Traffic Impact Analysis

Barrio Logan Community Plan Update

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EXECUTIVE SUMMARY

This study, prepared by Kimley-Horn and Associates, Inc., evaluates the potential traffic-related impacts associated with the Barrio Logan Community Plan Update.

Two land use alternatives were presented and analyzed as part of the Barrio Logan Community Plan Update. The purpose of these alternatives is to regulate and guide the strategic growth of the community. In addition to the land use alternatives within the Barrio Logan Community Plan Update, a Mobility Element was prepared based on the existing conditions within the community, potential future transportation deficiencies and improvement recommendations and extensive input from the community stakeholders.

Based on the intersection peak-hour analysis included in this study, the Barrio Logan Community Plan Update Land Use Alternatives will be considered to have a cumulative traffic related impact at the following twenty intersections:

- National Avenue and 16th Street;
- Harbor Drive and Sigsbee Street;
- Logan Avenue and Beardsley Street/I-5 SB off-ramp;
- National Avenue and Beardsley Street;
- Harbor Drive and Beardsley Street;
- Logan Avenue and Cesar Chavez Parkway;
- National Avenue and Cesar Chavez Parkway;
- *Newton Avenue and Cesar Chavez Parkway;*
- *Main Street and Cesar Chavez Parkway;*
- Harbor Drive and Cesar Chavez Parkway;
- Logan Avenue and Sampson Street;
- *Main Street and 26th Street;*
- *Harbor Drive and Schley Street;*
- National Avenue and 28th Street;
- Boston Avenue and 28th Street;
- *Main Street and 28th Street;*
- Harbor Drive and 28th Street;
- Boston Avenue and I-5 Southbound On-ramp;
- 32nd Street and Wabash Street; and
- *Harbor Drive and 32nd Street.*

The following intersection improvements are needed to mitigate the peak-hour intersection impacts of the proposed Barrio Logan Community Plan Update Land Use Alternatives. With the exception of the improvements recommended at the Harbor Drive/Cesar Chavez Parkway and Boston Avenue/28th Street intersections, all improvements would be the same for both alternative land use scenarios. Some improvements at the Harbor Drive /Cesar Chavez Parkway and Boston Avenue/28th Street intersections would only be needed with Alternative 2 Land Use scenario.



- <u>National Avenue and 16th Street</u>: A new traffic signal is recommended to be installed at this intersection.
- <u>Harbor Drive and Sigsbee Street</u>: A traffic signal is recommended to be installed at the intersection of Sigsbee Street and Harbor Drive. The signal is needed to serve the increased traffic from land uses proposed, as well as accommodating the traffic that would be diverted from Beardsley Street due to the median closure along Harbor Drive.
- Logan Avenue and Beardsley Street/I-5 SB off-ramp: A traffic signal is recommended to be installed at the intersection.
- <u>National Avenue and Beardsley Street:</u> A traffic signal is recommended to be installed at the intersection.
- <u>Harbor Drive and Beardsley Street:</u> This improvement would extend the raised median along Harbor Drive in front of Beardsley Street converting the intersection to right-in/right-out only movements.
- Logan Avenue and Cesar Chavez Parkway: The addition of an exclusive eastbound right-turn lane and a northbound right-turn overlap phase are recommended to be installed at this intersection. The addition of the exclusive eastbound right-turn lane could be implemented by restriping changes only. An existing MTS bus stop is located where the exclusive right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement. This improvement will not affect the existing on-street parking. The entrance to the State Route 75 ramps would be reconfigured to improve pedestrian circulation. This improvement could include the removal of the free northbound right-turn access from Cesar Chavez Parkway to the State Route 75 ramps.
- <u>National Avenue and Cesar Chavez Parkway:</u> Exclusive eastbound and westbound right-turn lanes are recommended to be installed at this intersection in order to reduce queuing along National Avenue. These improvements could be implemented by restriping changes only. These improvements will not affect the existing on-street parking. An existing MTS bus stop is located where the exclusive westbound right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement.
- Main Street and Cesar Chavez Parkway: An exclusive westbound right-turn lane is recommended to be installed at this intersection in order to reduce queuing along Main Street. This improvement could be implemented by restriping changes only. This improvement will not affect the existing on-street parking. An existing MTS bus stop is located where the exclusive westbound right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement.
- Harbor Drive and Cesar Chavez Parkway: A southbound right-turn overlap phase, dual eastbound left-turn lanes and an exclusive northbound right-turn lane are recommended to be installed. For Alternative 2 scenario, an exclusive westbound right-turn lane is also recommended. It is anticipated that the exclusive northbound right-turn lane will be completed by Caltrans in conjunction with the extension of the westbound left-turn lane.
- Logan Avenue and Sampson Street: A traffic signal is recommended to be installed. Also, southbound and northbound left-turn lanes are recommended. These lanes could be added with restriping changes only at the time of signalization, and would not require roadway widening. The configuration changes would require the removal of on-street parking along Sampson Street. A total of 16 parking spaces are anticipated to be removed as part of this improvement. The



removed parking spaces are likely serving commercial uses along Logan Avenue and multifamily residential units along Sampson Street. The removal of on-street parking spaces will create a shortage of on-street parking within the vicinity of this intersection.

- <u>Main Street and 26th Street:</u> A partial street closure is recommended at the intersection for truck traffic restrictions. The northbound through and eastbound left movements would be eliminated. This improvement is not required to mitigate intersection level of services, but it is recommended for a reduction of truck traffic along residential streets within the community.
- <u>Harbor Drive and Schley Street:</u> The southbound through and southbound left-turn movements are recommended to be prohibited. Right-turn overlap signal phasing is recommended for the southbound movement.
- <u>National Avenue and 28th Street:</u> An exclusive southbound right-turn lane is recommended to be added. This improvement could be accomplished by restriping the roadway without the need for widening. A removal of one on-street parking space would be required along the west side of National Avenue to accommodate a 100-foot southbound exclusive right-turn lane.
- <u>Boston Avenue and 28th Street:</u> An exclusive eastbound right-turn lane is recommended to be added. This improvement could be implemented by restriping changes only and will not affect on-street parking. This improvement is needed under Alternative 2 only.
- <u>Harbor Drive and 28th Street:</u> A second southbound left-turn lane and a second eastbound left-turn lane are recommended to be added.
- <u>Boston Avenue and Interstate 5 Southbound Ramp-29th Street:</u> This recommendation includes a truck right-turn prohibition for the northbound movement at the intersection of 28th Street and Boston Avenue and truck turning signage to encourage vehicles to use Main Street and 29th Street to enter the Interstate 5 southbound freeway. The Interstate 5 Southbound Ramp and Boston Avenue intersection is recommended to be signalized.
- <u>32nd Street and Wabash Boulevard:</u> Potential improvements at this intersection will be further defined once Caltrans completes its truck access improvement study.
- <u>Harbor Drive and 32nd Street:</u> Same as the improvements for Wabash Boulevard and 32nd Street.

With the implementation of the recommended improvements, all intersections within the study area would operate at LOS D or better with the following exceptions:

- Harbor Drive and 28th Street (will continue to operate at LOS E during the afternoon peak-hour period);
- 32nd Street and Wabash Street (will continue to operate at LOS F and LOS E during the morning and afternoon peak-hour periods, respectively); and
- Harbor Drive and 32nd Street (will continue to operate at LOS F during both peak-hour periods).

The Harbor Drive/32nd Street and 32nd Street/Wabash Street intersections are being studied further in an on-going Caltrans study. The latest report includes the installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15. Another improvement under study is the Vesta Street Overcrossing at Harbor Drive which would connect the wet and dry sides of the Naval Base San Diego. On November 1, 2010 the Navy temporarily closed the eastern leg (Norman Scott Road) of the 32nd Street/Norman Street-Wabash Street intersection to improve safety. The Navy is monitoring traffic to determine if this closure should remain. A preliminary analysis indicates that the mentioned projects would improve the intersection to acceptable levels and decrease the potential queuing problems.



Harbor Drive/28th Street is projected to operate at LOS E, even with improvements. There is the potential that improvements to be made between Harbor Drive and State Route 15 (Caltrans study) could divert some traffic off of 28th Street, further improving this intersection

SANDAGs 2050 Regional Transportation Plan (RTP) unconstrained network recommends the grade separation of the trolley lines at 28th Street and at 32nd Street. A peak-hour intersection analysis was conducted for the intersections of 28th Street and 32nd Street with Harbor Drive assuming these proposed grade separations. The results of the analysis indicated that the proposed grade separation would improve both intersections to LOS D or better during both peak-hour periods under the Horizon Year scenario with either alternative. The proposed grade separations are included in the "revenue constrained scenario". Due to the benefits to adjacent intersections, these grade separation projects are recommended.

Based on the roadway segment capacity analysis included in this study, the Barrio Logan Community Plan Update will be considered to have a cumulative traffic related impact along the following roadway segments:

- *Cesar Chavez Parkway between Logan Avenue and National Avenue (both Alternatives);*
- Cesar Chavez Parkway between National Avenue and Newton Avenue (both Alternatives);
- Cesar Chavez Parkway between Newton Avenue and Main Street (both Alternatives);
- Sampson Street between National Avenue and Harbor Drive (both Alternatives);
- 26th Street between National Avenue and Main Street (both Alternatives);
- 28th Street between I-5 and Boston Avenue (both Alternatives);
- 29th Street between Boston Avenue and Main Street (Alternative 2 only);
- 32nd Street between Main Street and Wabash Boulevard (both Alternatives):
- *Vesta Street between Main Street and I-5 Ramps (both Alternatives);*
- Logan Avenue between Sigsbee Street and Cesar Chavez Parkway (both Alternatives);
- *National Avenue between 16th Street and Sigsbee Street (Alternative 2 only);*
- National Avenue between Sigsbee Street and Beardsley Street (Alternative 2 only);
- National Avenue between Beardsley Street and Cesar Chavez Parkway (both Alternatives);
- National Avenue between Cesar Chavez Parkway and Evans Street (both Alternatives);
- National Avenue between Sicard Street and 27th Street (both Alternatives);
- Boston Avenue between 28th Street and 29th Street (both Alternatives);
- *Boston Avenue between* 29th *Street and* 32nd *Street (both Alternatives);*
- Main Street between Cesar Chavez Parkway and Evans Street (both Alternatives):
- *Main Street between Evans Street and 26th Street (both Alternatives);*
- *Main Street between* 26th *Street and* 28th *Street (both Alternatives);*
- Main Street between 28^{th} Street and 29^{th} Street (both Alternatives); Main Street between 29^{th} Street and 32^{nd} Street (both Alternatives);
- *Main Street between* 32^{*nd*} *Street and Rigel Street (both Alternatives);*
- Main Street between Rigel Street and Una Street (both Alternatives); and
- Main Street between Una Street and I-5 SB Off-ramp (both Alternatives).

The following roadway segment improvements are recommended to mitigate the roadway segment cumulative impacts of the proposed Barrio Logan Community Plan Update. The improvements listed would be the same for both land use alternatives.



- Cesar Chavez Parkway between Logan Avenue and Harbor Drive: This roadway segment will be reclassified as a three-lane urban major facility between Logan Avenue and Main Street. Between Main Street and Harbor Drive, the roadway segment will be reclassified as a three-lane major arterial. A raised median will be installed between Harbor Drive and Logan Avenue. The roadway segment will have two lanes in the northbound direction and one lane in the southbound direction. On-street parking will be allowed between Logan Avenue and Main Street. A southbound right-turn auxiliary lane will be present between Main Street and Harbor Drive. The entire roadway segment should be considered for "sharrow" bicycle marking treatment and will be considered a class III bicycle facility.
- <u>28th Street between I-5 and National Avenue:</u> This roadway segment will be reconfigured as a four-lane major arterial with a five-foot raised median. The new configuration would allow for two-lanes in each direction and an auxiliary lane in the southbound direction.
- <u>National Avenue between Cesar Chavez Parkway and Evans Street</u>: This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.
- <u>National Avenue between Sicard and 27th Street</u>: This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.
- <u>Main Street between Evans Street and 26th Street</u>: This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.

Although the above listed improvements will not mitigate all the roadway segment cumulative impacts identified in the study, no additional improvements are being proposed.

Boston Avenue, National Avenue and 26th Street are desired by the community of Barrio Logan to be more pedestrian and bicycle friendly corridors. The widening of these roadways to improve vehicular circulation was not desired by the community. The vehicular operations along these three facilities could be congested during peak periods and vehicular speeds would be low. Additional widening is not recommended. Traffic calming measures should be evaluated along National Avenue to further enhance the pedestrian and bicycle circulation.

Additional improvements to the failing roadway segments of Sampson Street, 28th Street, 32nd Street, Vesta Street, Logan Avenue and Main Street are not recommended since the roadway segment analysis used in this study is based on theoretical capacities based on the number of travel lanes. The analysis does not take into account other physical features that can affect the capacity of a roadway segment like grades, number of traffic signals, number of driveways, parking availability, etc. In addition, the analysis does not take into account the different traffic peak periods experienced on these roadways due to the surrounding land uses. As an example, the Barrio Logan traffic generators whose peak-hour of use do not correspond to typical peak-hour commuter traffic. Therefore, the typical planning level capacity for these streets may understate the carrying capacity of these roadways. To better represent the conditions of a roadway segment within the Barrio Logan community, the operations of the upstream and downstream intersections of each respective segment during the peak periods would indicate whether the roadway segment would have adequate capacity. As shown in the intersection analysis tables, all intersections along the failing roadway segments would operate at acceptable LOS.

In addition to the roadway segment improvements listed above, it is recommended that 28th Street between Harbor Drive and the I-5 Ramps be classified as a four-lane major arterial. For the segment between Harbor Drive and Main Street, a raised median should be installed with an entrance to the Navy



Commissary. The proposed configuration would allow two lanes in each direction with an auxiliary lane for the heavy southbound right-turn movements at Harbor Drive. Parking would need to be removed along both sides of the roadway, with a total loss of approximately 20 parking spaces. The removed parking spaces are likely utilized by NASCO employees or Naval Base San Diego employees or visitors. Additional diagonal parking is recommended to be evaluated for installation along Boston Avenue between 28th Street and 29th Street to replace the loss of parking along 28th Street. The west side of the roadway could be widened by 4 feet to accommodate the proposed interim cross-sections. The east sidewalk will widen to 10 feet to enhance pedestrian circulation. This improvement is not part of mitigation for a roadway segment impact. The improvement is recommended to encourage heavy truck traffic to use 28th Street instead of Main Street and to provide for pedestrians. The ultimate recommended cross-section of 28th Street will include a designated bike lane along both sides of the roadway and a fourteen foot parkway. The ultimate configuration along 28th Street will require additional roadway widening and right-of-way acquisition. An alignment study is required to further define the extent of additional right-way needed and future widening.

Based on the freeway segment capacity analysis included in this study, Barrio Logan Community Plan Update is considered to have a cumulative traffic related impact along the following freeway segments:

- I-5 from J Street to SR-75 Junction;
- I-5 from SR-75 Junction to 28th Street;
- I-5 from 28th Street to I-15 Interchange;
- I-5 from I-15 Interchange to Division Street; and
- I-15 from I-5 Interchange to Ocean View Boulevard

SANDAG's Draft 2050 Regional Transportation Plan (RTP) hybrid network includes the following freeway improvements:

- Operational freeway improvements along Interstate 5 between Interstate 15 and Interstate 8; and
- Addition of one (1) main lane and one (1) managed lane in each direction between Interstate 15 and State Route 54;

Both improvements listed above were included in the hybrid network's revenue constrained scenario, approved by SANDAG's board for further study on December 17th, 2010. The improvements included in the RTP are recommended to enhance the regional connectivity and accommodate the forecasted growth of the San Diego region. It should be noted that both land use alternatives presented on this plan would generate less traffic than the current adopted Community Plan land use alternative. Either proposed alternative would lessen, but not eliminate cumulative freeway traffic impacts.

In addition to the proposed freeway improvements listed in the SANDAG's Draft 2050 RTP, the following freeway access improvements are recommended within the Barrio Logan Community:

- Signalization of the intersection of Logan Avenue and Beardsley Street/ Interstate 5 SB off-ramp;
- Traffic signal modification at the intersection of Logan Avenue and Cesar Chavez Parkway (State Route 75 on-ramp);
- Signalization of the intersection of Boston Avenue and Interstate 5 SB on-ramp- 29th Street;



- Roadway improvements along 28th Street to accommodate an additional southbound lane, including the potential for widening the Interstate 5 overcrossing;
- Signalization of the intersection of 28th Street and Interstate 5 southbound off-ramp;
- Changes to the roadway striping along Main Street between 28th Street and 29th Street to facilitate freeway access to the Interstate 5 southbound on-ramp at Boston Avenue;
- Installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15 (under study by the Port of San Diego, and Caltrans);
- Construction of the Vesta Street Overcrossing at Harbor Drive (under study by the Navy);
- Coordination of City of San Diego and Navy related to the closure of the east leg of the 32nd Street and Norman Street-Wabash Street intersection (recently completed on a trial basis by the Navy); and
- Grade separation of the trolley tracks at the 28th Street and Harbor Drive and 32nd Street and Harbor Drive intersections (to be completed by SANDAG and part of the 2050 draft RTP).

The improvements listed above would decrease congestion along the major freeway access locations within the community.

Figures E-1 and E-2 illustrates the summary of Horizon Year intersections and roadway segments level of services with the implementation of the recommended improvements associated with Alternative 1 and 2, respectively.







1.0 INTRODUCTION

The following traffic study has been prepared to determine and evaluate the traffic impacts associated with the Barrio Logan Community Plan Update. This evaluation assesses the impacts of the proposed Land Use Element and Mobility Element.

Project Description

Two land use alternatives were presented and analyzed as part of the Barrio Logan Community Plan Update. The purpose of these alternatives is to regulate and guide the strategic growth of the community. In addition to the land use alternatives within the Barrio Logan Community Plan Update, a Mobility Element was prepared based on the existing conditions within the community, potential future transportation deficiencies and improvement recommendations, and extensive input from the community stakeholders. A copy of the Mobility Element is included in **Appendix A**.

Figure 1-1 depicts the location of the project in a regional context and Figure 1-2 shows the project boundary for the Barrio Logan Community. Figure 1-3 shows the adopted community plan land use designations. Figures 1-4 and 1-5 shows the two alternative proposed land use designations presented under the project.

Analysis Scenarios

A total of four scenarios were analyzed as part of the project, which are listed below:

• Existing Conditions (2010)

> Existing Conditions: Represents the conditions of the existing street network.

- Horizon Year Conditions (2030)
 - Horizon Year Conditions (Adopted Community Plan): Represents the traffic conditions of the street network assumed to be in place under Horizon Year conditions with the implementation of the Adopted Community Plan.
 - Horizon Year Conditions (Alternative 1): Represents the traffic conditions of the street network assumed to be in place under Horizon Year conditions with the implementation of the proposed Alternative 1 land use changes.
 - Horizon Year Conditions (Alternative 2): Represents the traffic conditions of the street network assumed to be in place under Horizon Year conditions with the implementation of the proposed Alternative 2 land use changes.



Regional Vicinity Map





Figure 1-3: Adopted Community Plan

Barrio Logan Community Plan Update

Exclusively Residential Residential/Commercial/Industrial Exclusively Industrial Parks and Open Space Military Use Right-of-Way Railroad Right of Way Port Tidelands



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Figure 1-4: Land Use Alternative 1

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Figure 1-5: Land Use Alternative 2

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2.0 METHODOLOGY

The following section describes the methodology used to determine study area, analysis of the study area operations, and determine significant impacts.

Study Area

The intersections within the project boundary to be included in the study area were selected based on several factors, which included the following:

- Roadways intersecting with each other that function as a collector or higher
- On- and off-ramp intersections to/from freeways
- Intersections near approved and pending projects

Based on the criteria listed above, a total of 41 intersections have been selected for analyses and are shown in **Table 2-1** below.

TABLE 2-1 STUDY INTERSECTIONS								
Intersection Traffic Control (a)								
1	Commercial St & 16th St	Signal						
2	National Ave & 16th St	TWSC						
3	National Ave & Sigsbee St	Signal						
4	Newton Ave & Sigsbee St	AWSC						
5	Main St and Sigsbee St	AWSC						
6	Harbor Dr & Sigsbee St	OWSC						
7	Logan Ave & I-5 SB off-ramp (Caltrans intersection)/ Beardsley St	AWSC						
8	National Ave & Beardsley St	AWSC						
9	Newton Ave & Beardsley St	AWSC						
10	Main St & Beardsley St	AWSC						
11	Harbor Dr & Beardsley St	OWSC						
12	Kearny Ave & Cesar Chavez Pkwy	Signal						
13	Logan Ave & Cesar Chavez Pkwy/SR-75 on-ramp	Signal						
14	National Ave & Cesar Chavez Pkwy	Signal						
15	Newton Ave & Cesar Chavez Pkwy	Signal						
16	Main St & Cesar Chavez Pkwy	Signal						
17	Harbor Dr & Cesar Chavez Pkwy	Signal						
18	Logan Ave & I-5 SB on-ramp (Caltrans intersection)	Uncontrolled						
19	National Ave & SR-75 off-ramp (Caltrans intersection)	OWSC						
20	National Ave & Evans St	TWSC						
21	Newton Ave & Evans St	TWSC						
22	Main St & Evans St	OWSC						
23	Logan Ave & Sampson St	AWSC						
Notes: (a) Sig	nal = Traffic signal, OWSC = One-Way Stop-Control, Two-Way Stop-Control, AWSC	e = All-Way Stop-Control						

TABLE 2-1 STUDY INTERSECTIONS (cont.)						
	Intersection	Traffic Control (a)				
24	National Ave & Sampson St	Signal				
25	Newton Ave & Sampson St	AWSC				
26	Main St & Sampson St	AWSC				
27	Harbor Dr & Sampson St	Signal				
28	National Ave & Sicard St	AWSC				
29	National Ave & 26th St	TWSC				
30	National Ave & 27th Street	OWSC				
31	Main St & 26th St	AWSC				
32	Harbor Dr & Schley St	Signal				
33	National Ave & 28th St	Signal				
34	Boston Ave & 28th St	Signal				
35	Main St & 28th St	Signal				
36	Harbor Dr & 28th St	Signal				
37	Boston Ave & 29th St/I-5 SB on-ramp (Caltrans Intersection)	OWSC				
38	Main St & 32nd St	Signal				
39	Wabash & 32nd St	Signal				
40	Harbor Dr & 32nd St	Signal				
41	Main St & I-15 ramps (Caltrans Intersection)	Signal				
Notes: (a) Sig	nal = Traffic signal, OWSC = One-Way Stop-Control, Two-Way Stop-Control, AWS	C = All-Way Stop-Control				

As shown in the table, 21 of the 41 intersections evaluated are signalized while 20 intersections are unsignalized with vehicles required to stop on one leg, two legs, or all legs of the intersection. Two of the intersections (Kearny Avenue/Cesar Chavez Parkway and National Avenue/28th Street) are outside of the project area boundary. However, these intersections have been included as part of the study area, since traffic heading to/from the Barrio Logan community via the freeway would travel through these two locations. **Figure 2-1** displays the location of the study intersections.



Analysis Process

The analysis process includes determining the levels of service at the study intersections and freeway segments for the a.m. and p.m. peak-hours and levels of service on roadway segments using ADT volumes.

The freeway ramps within the Community of Barrio Logan are not currently metered. It is uncertain whether or not Caltrans will meter these ramps in the future. Ramp meter analysis was not included in this study. In the case that Caltrans decides to implement ramp meter analysis in the future, a ramp meter evaluation should be prepared to document the impact of the ramp metering to the City of San Diego's surface streets.

Analysis Software

To analyze the vehicular operations of both signalized and unsignalized intersections, Synchro 6 (Trafficware) was used for the analysis. Synchro 6 uses the methodologies outlined in the 2000 *Highway Capacity Manual (HCM)*.

The following list contains the assumptions used for the intersection analyses:

- Peak-hour factor (PHF) = A default PHF of 0.92 was use for all scenarios.
- Percent of heavy vehicle (PHV) = Measured in field PHV were used at all locations with available data (Harbor Drive, Cesar Chavez Parkway, Main Street, 28th Street and 32nd Street). For locations with no PHV data, a 2 percent value was used. The measured PHV ranged from 2 percent to 32 percent along Cesar Chavez Parkway south of Harbor Drive.
- Pedestrians & Bicycles = Measured in field pedestrian and bicycle data were used for the intersection analyses. Data was collected for the majority of the intersections.
- Signal Timing = With the exception of the traffic signals along Cesar Chavez Parkway between Main Street and Logan Avenue, all cycle lengths were optimized and account for the minimum pedestrian crossing times. Cesar Chavez Parkway between Main Street and Logan Avenue is a coordinated corridor with an 80 second cycle length. The coordinated 80 second cycle length for Cesar Chavez Parkway was used for all scenarios.

To accurately evaluate the interactions of the San Diego Trolley with the signalized intersections along Harbor Drive, a special signal phasing was used to simulate the signal interaction with the adjacent Light Rail crossing. When a trolley vehicle approaches a cross street, the crossing guards are lowered for approximately 30 seconds, allowing time for clearance of queues on the tracks and for the trolley to pass. This special phasing to replicate the trolley disruption to cross street traffic was simulated through the Synchro software. The phasing diagram used for the signalized intersections along Harbor Drive was extracted from a report prepared by Jeff G. Gerken and Sarah A. Tracy titled "Analysis of Traffic Impacts at Isolated Light Rail Transit (LRT) Crossings Using Sim Traffic." A copy of the report can be found in **Appendix B**.

Signalized and Unsignalized Intersections

The 2000 *HCM* published by the Transportation Research Board establishes procedures to evaluate highway facilities and rate their ability to process traffic volumes. The terminology "level of service" is used to provide a qualitative evaluation based on certain quantitative calculations, which are related to empirical values.

Level of service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in addition to the stop delay. The LOS for unsignalized intersections is determined by the computed or measured control delay and is defined for each minor movement. At an all-way stop controlled intersection, the delay reported is the average control delay of the intersection. At a one-way or two-way stop controlled intersection, the delay reported represents the worst movement, which are typically the left-turns from the minor street approach.

The criteria for the various levels of service designations are given in Table 2-2.

TABLE 2-2 LOS CRITERIA FOR INTERSECTIONS							
	Control Delay (sec/veh) Signalized Unsignalized						
LOS	Intersections (a)	Intersections (b)	Description				
А	<u><</u> 10.0	<u><</u> 10.0	Operations with very low delay and most vehicles do not stop.				
В	>10.0 and <u><</u> 20.0	>10.0 and \leq 15.0	Operations with good progression but with some restricted movement.				
С	>20.0 and <35.0	>15.0 and <25.0	Operations where a significant number of vehicles are stopping with some backup and light congestion.				
D	>35.0 and <u><</u> 55.0	>25.0 and <u><</u> 35.0	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines				
Е	Operations where there is significant delay, extensiv		Operations where there is significant delay, extensive queuing, and poor progression.				
F	F >80.0 >50.0 Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.						
	Notes: (a) 2000 Highway Capacity Manual, Chapter 16, Page 2, Exhibit 16-2 (b) 2000 Highway Capacity Manual, Chapter 17, Page 2, Exhibit 17-2						

The acceptable Level of Service (LOS) standard for roadways and intersections in the City of San Diego is LOS D, except in the Centre City Community Plan area (Downtown) for which the acceptable LOS is E.

Roadway Segments

In order to determine the operations along the study area roadway segments, daily roadway traffic volumes were compared to assumed roadway capacities. Table 2-3 has been developed by the City of San Diego and was used in this analysis. The segment traffic volumes under LOS E as shown in this table are considered at capacity because at LOS E the volume-to-capacity Ratio (v/c Ratio) is equal to 1.0. It should be noted that the values listed in the table are planning-level estimates only. The actual operations of a roadway segment would be affected by the type and frequency of traffic control, terrain, lane width, presence of raised median, local access/driveways, percent of heavy vehicles, distribution of traffic over the day, etc.

TABLE 2-3 ROADWAY SEGMENT CAPACITY AND LOS							
Road			Level of Service (LOS)				
Class	Lanes	Α	В	С	D	E	
Expressway	6	30,000	42,000	60,000	70,000	80,000	
Prime Arterial	6	25,000	35,000	50,000	55,000	60,000	
Major Arterial	6	20,000	28,000	40,000	45,000	50,000	
Major Arterial	4	15,000	21,000	30,000	35,000	40,000	
Collector	4	10,000	14,000	20,000	25,000	30,000	
Collector (No center lane) (Continuous left- turn lane)	4 2	5,000	7,000	10,000	13,000	15,000	
Collector (No fronting property)	2	4,000	5,500	7,500	9,000	10,000	
Collector (Commercial/Industrial fronting)	2	2,500	3,500	5,000	6,500	8,000	
Collector (Multi-family)	2	2,500	3,500	5,000	6,500	8,000	
Sub-Collector (Single family)	2			2,200			

Notes:

The volumes and the average daily level of service listed above are only intended as a general planning guideline. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Source: City of San Diego Traffic Impact Study Manual, Table 2, Page 8, July 1998.

Freeway Segments Analysis

In order to determine the impacts on the study area, freeway segments were evaluated using procedures developed by Caltrans District 11. The procedure involves comparing the peak-hour volume of the mainline freeway segment to the theoretical capacity of the segment, which results in a v/c ratio. The calculated v/c ratio is then compared to the accepted ranges of v/c ratio values corresponding to the respective LOS, as displayed in Table 2-4.

For this study, the freeway segment analysis includes the freeway segments along Interstate 5, Interstate 15 and State Route 75.

TABLE 2-4 LOS CRITERIA FOR FREEWAY SEGMENT ANALYSIS						
LOS	Traffic Description					
А	< 0.41	None	Free flow			
В	0.41 - 0.62	None	Free to stable flow, light to moderate volumes			
С	C 0.63 – 0.80 None to minimal		Stable flow, moderate volumes, freedom to maneuver noticeably restricted			
D 0.81 – 0.92 Minimal to substantial Approaches unstable flow, freedom to maneuver		Approaches unstable flow, heavy volumes, and very limited freedom to maneuver				
$\mathbf{F} = [0.93 \pm 1.00]$ Significant		Extremely unstable flow, maneuverability and psychological comfort extremely poor				
F ₀	1.01 – 1.25	Considerable 0 – 1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go			
F_1	1.26 – 1.35	Severe 1 -2 hour delay	Very heavy congestion, very long queues			
F ₂	F_2 1.36 – 1.45 Very severe 2-3 hour delay		Extremely heavy congestion, very long queues			
F ₃	> 1.46	Extremely severe 3+ hours of delay	Gridlock			
Notes: Based on the 1992 Caltrans guidelines.						

A graphical representation of the LOS definitions for the different facilities is shown in Figure 2-2.

It should be noted that all the freeway ramps within the Community of Barrio Logan are non-metered. Ramp meter analysis is not included in this study.



Figure 2-2 Graphical Summary of LOS Definitions

Source: Florida Department of Transportation 2002 Quality/Level of Service Handbook, Figure 1-2

Significance Determination

To determine the impacts to roadway/freeway segments and intersections, the City of San Diego has developed thresholds based on allowable increases in delay at intersections and volume to capacity (v/c) ratios for roadway and freeway segments. The existing condition analysis was compared to each of the Horizon Year conditions to determine where traffic impacts occur. Since the Horizon Year conditions includes the project and Year 2030 growth for the San Diego region, traffic impacts that occur are considered to be cumulative impacts. At intersections, the measure of effectiveness (MOE) is based on allowable increases in delay. At roadway and freeway segments, the MOE is based on allowable increases in the v/c ratio. At intersections that are expected to operate at LOS E under Horizon Year 2030, the allowable increase in delay to existing conditions is two seconds, while for intersections that are expected to operate at LOS F, the allowable increase in delay is one second. If vehicle trips associated with the Barrio Logan Community Plan Update cause the delay at an intersection to increase by more than the City's threshold, this would be considered a significant traffic related impact. Under this condition, mitigation to restore the operations of the intersection to LOS D was investigated. If an existing intersection is operating at LOS E or F, the intersection would be considered an existing deficiency.

For roadway and freeway segments that are forecasted to operate at LOS E, the allowable increase in v/c ratio is 0.02, while for roadway and freeway segments that are forecasted to operate at LOS F, the allowable increase in v/c ratio is 0.01. An increase in v/c ratio higher than the City's thresholds would be considered a significant impact.

 Table 2-5 shows the criteria for determining levels of significance for the different facilities in our study area.

TABLE 2-5 SIGNIFICANCE CRITERIA FOR FACILITIES IN STUDY AREA					
Facility	Measurement of Effectiveness (MOE)	Significance Threshold (a)			
Intersection	Seconds of delay	>2.0 seconds at LOS E or >1.0 seconds at LOS F			
Roadway Segment	ADT, v/c ratio	>0.02 at LOS E or >0.01 at LOS F			
Freeway Segment	v/c ratio	>0.01 at LOS E or >0.005 at LOS F			

(a) Significance threshold applies only when the type of facility operates at LOS E or F.

3.0 EXISTING CONDITIONS

This section summarizes the existing conditions within the Barrio Logan community with respect to the following:

- Roadway and Freeway Segments
- Intersections
- Parking
- Truck Traffic

Roadway & Freeways Segments

The following section provides a description of the existing study streets within the Barrio Logan community. Functional roadway classifications for the different roadways in the study area were based on field observations.

Cesar Chavez Parkway functions as a north-south, 4-lane collector between Logan Avenue and National Avenue and between Main Street and Harbor Drive. This road functions as a 3-lane collector between Logan Avenue and Kearny Avenue and between National Avenue and Main Street. Cesar Chavez Parkway is lined with sidewalks and curbs on both sides of the road, for the entire length of the street. Parallel parking is available on the west side of the street between National Avenue and Main Street. Signs prohibit trucks above five tons from traveling along Cesar Chavez Parkway. A northbound, I-5 on-ramp is located at the intersection of Cesar Chavez Parkway and Kearny Avenue. A westbound, SR-75 on-ramp is located at the intersection of Cesar Chavez Parkway and Logan Avenue. The posted speed limit is 30 miles per hour (mph).

Sampson Street functions as a north-south, 2-lane collector between I-5 and Harbor Drive. Sidewalks, curbs, and parallel parking spaces are located on both sides of the road. Trucks above five tons are prohibited by signage to travel along Sampson Street. The speed limit along Sampson Street is 25 mph within the study area.

 26^{th} Street functions as a north-south, 2-lane collector between Logan Avenue and Main Street. Sidewalks, curbs, and parallel parking spaces are located on both sides of the road. Signs prohibit trucks above five tons from traveling along 26^{th} Street. The posted speed limit is 25 mph.

28th Street functions as a north-south, 4-lane collector between Boston Avenue and Main Street and a 4-lane with raised median major arterial between Main Street and Harbor Drive. Between National Avenue and Boston Avenue, 28th Street functions as a three-lane collector with two northbound lanes and a southbound lane. This street is a designated truck route. Sidewalks and curbs line both sides of the street for the entire length of the segment. Parallel parking is available on both sides of the street between Main Street and Harbor Drive. The NASSCO shipyard is located at the southern end of 28th Street. South of Main Street, Naval Base San Diego fronts on the east side of 28th Street, including an access gate to the base. I-5 on and off-ramps connect 28th Street to I-5 near the northern end of the segment. The posted speed limit is 30 mph.

 32^{nd} Street functions as a north-south, 2-lane collector between Main Street and Wabash Street and a 4-lane major arterial between Wabash Street and Harbor Drive. Between Wabash Street and Harbor Drive, 32^{nd} Street has additional auxiliary lane for the northbound and southbound directions. This segment is a designated truck route. Sidewalks and curbs are located on both sides of the road. 32^{nd} Street provides access to I-15 via Wabash Street, which functions as an on and off-ramp. South of Main Street, 32^{nd} Street is completely fronted by Navy property. The entrance to Naval Base San Diego is located at the south end of 32^{nd} Street. The speed limit along 32^{nd} Street is 30 mph within the study area.

Rigel Street functions as a north-south, 2-lane collector between Dalbergia Street and I-5. This segment has sidewalks, curbs, and parallel parking spaces on both sides of the street. The posted speed limit is 25 mph.

Vesta Street functions as a north-south, 2-lane collector between Dalbergia Street and I-5. The road has sidewalks, curbs, and parallel parking spaces on both sides of the road. The posted speed limit is 25 mph.

Logan Avenue functions as an east-west, 2-lane collector between 17th Street and Sampson Street. This road has a two-way left-turn lane. Logan Avenue has a southbound I-5 off-ramp at the intersection with Beardsley Street and a southbound I-5 on-ramp located between Cesar Chavez Parkway and Evans Street. Signs prohibit trucks above five tons from traveling along Logan Avenue. This segment has sidewalks, curbs, and parallel parking on both sides of the road. The posted speed limit is 25 mph.

National Avenue functions as an east-west, 2-lane collector between 16th Street and 27th Street and a 4-lane collector between Commercial Street and 16th Street. Trucks above five tons are prohibited by signage to travel along National Avenue. An eastbound, SR-75 off-ramp is located along National Avenue between Cesar Chavez Parkway and Evans Street. This segment of National Avenue has sidewalks, curbs, and parallel parking on both sides of the road. Diagonal parking is provided on National Avenue on the south side of the street for portions of the segment between Beardsley Street and Evans Street. The posted speed limit is 30 mph.

Boston Avenue functions as an east-west, 2-lane collector between 28th Street and 32nd Street. This road has sidewalks, curbs, and parallel parking spaces on both sides of the street. A southbound, I-5 on-ramp is located at the intersection with 29th Street. The posted speed limit is 25 mph.

Main Street functions as an east-west, 2-lane collector between Beardsley Street and 26th Street and between Rigel Street and Yama Street. Main Street functions as a 3-lane collector between 26th Street and 27th Street and between 29th Street and 32nd Street, and a 4-lane collector between 27th Street and 29th Street and between 32nd Street and Rigel Street. Curbs and sidewalks are located on both sides of the road, along the entire length of the segment. Signs prohibit trucks over five tons from traveling on Main Street, west of 26th Street. A northbound I-15 on-ramp and a southbound I-15 off-ramp is located between 32nd Street and Rigel Street. Southbound I-5 on and off-ramps are also located near the intersection with Yama Street. Main Street is a designated class III bikeway. Parallel parking is intermittently permitted along both sides of the road. The posted speed limit is 35 mph.

Harbor Drive functions as an east-west, 4-lane major arterial between Sigsbee Street and Vesta Street. The road has a raised or landscaped median along the entire length of the segment. Harbor Drive is a designated truck route and has a class II bikeway with bike lanes along both sides of the road. The street has intermittent curbs, sidewalks, and parallel parking along the northern side of the road. The southern side of Harbor Dive has limited curbs and sidewalks. Parallel parking is intermittently permitted between Schley Street and 32nd Street. The posted speed limit is 40 and 45 mph.

Interstate 5 is classified and functions as an 8-lane freeway with four main lanes of traffic in each direction. Interstate 5 provides connections for the community to locations to the north and the south within the region.

Interstate 15 is classified and functions as a 6-lane freeway with three main lanes of traffic in each direction. Interstate 15 provides connections to locations to the east and north within the region. Interstate 15 is a major truck corridor in Southern California.

San Diego-Coronado Bridge is classified and functions as a 5-lane freeway. The traffic lanes on the bridge are separated by a movable median, which allows for three westbound traffic lanes in the morning and three eastbound traffic lanes in the afternoon and evening. The approach on each side of the bridge contains three lanes. An out-of-service toll plaza is located on the west side of the bridge and serves as a traffic calming

device for vehicles entering the island. The San Diego-Coronado Bridge is designated as State Route (SR) 75. The posted speed limit is 50 mph.

Figure 3-1 shows the existing geometrics of the study intersections within the study area and **Figure 3-2** shows the functional classification for the roadway segments in the study area.

Traffic Volumes

The peak-hour intersection turning movements at study area intersections were obtained from several sources. Where appropriate, traffic counts from previous studies were utilized since traffic volumes generally remained constant. For the counts listed in the Year 2003, traffic data was obtained from the *Barrio Logan Truck Study*, prepared by Willdan. For the counts listed in the Year 2005/2006, traffic data was obtained from the *Mercado Traffic Study*, prepared by Darnell and Associates. For the counts listed in June 2008, traffic data was obtained by National Data and Surveying Services. For the counts listed in the December 2008, traffic data was obtained from Caltrans Port Access Study.

Similar to the study area intersections, the roadway segment traffic data were obtained from several sources. All of the ramp volumes for I-5 and I-15 were obtained from Caltrans with most of the data coming from 2005/2006. All of the segment counts prior to the Year 2008 were obtained from the *Barrio Logan Truck Study*, prepared by Willdan, *Mercado Traffic Study*, prepared by Darnell and Associates, City of San Diego, and Wilson and Company. For the counts listed in the Year 2008 and 2010, traffic data was obtained by National Data and Surveying Services.

Freeway ADTs and peak-hour volumes were taken from Caltrans' traffic database and they correspond to the year 2008.

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Commercial St/	National Ave/	National Ave/	Newton Ave/
16th St	16th St	Sigsbee St	Sigsbee St
Main St/	Harbor Dr/	Logan Ave/Beardsley St-	National Ave/
Sigsbee St	Sigsbee St	I-5 SB off-ramp	Beardsley St
Newton Ave/	Main St/	Harbor Dr/	Kearney St/
Beardsley St	Beardsley St	Beardsley St	Cesar Chavez Pkwy



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Logan Ave/	National Ave/	Newton Ave/	Main St/
Cesar Chavez Pkwy	Cesar Chavez Pkwy	Cesar Chavez Pkwy	Cesar Chavez Pkwy
Harbor Dr/	Logan Ave/	National Ave/	National Ave/
Cesar Chavez Pkwy	I-5 SB On-ramp	SR-75 Off-ramp	Evans St
	Caltrans Intersection	Caltrans Intersection	
Newton Ave/	Main St/	Logan Ave/	National Ave/
Evans St	Evans St	Sampson St	Sampson St
	(0.13 - L - 22 		





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FIGURE 3-1.1 Existing Intersection Geometrics
Barrio Logan Community Plan Update

Newton Ave/	Main St/	Harbor Dr/	National Ave/	
Sampson St	Sampson St	Sampson St	Sicard St	
National Ave/	National Ave/	Main St/	Harbor Dr/	
26th St	27th St	26th St	Schley St	
National Ave/	Boston Ave/	Main St/	Harbor Dr/	
28th St	28th St	28th St	28th St	



FIGURE 3-1.2 Existing Intersection Geometrics

Barrio Logan Community Plan Update

Boston Ave/	Main St/	Wabash Blvd/	Harbor Dr/
I-5 SB On-ramp	32nd St	32nd St	32nd St
37 Caltrans Intersection			
Main St /			
I-15 Ramps			
41 Caltrans Intersection			





FIGURE 3-1.3

Existing Intersection Geometrics

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Kimley-Horn and Associates, Inc.



Barrio Logan Community Plan Update

Table 3-1 summarizes the date of the counts for the study intersections and **Table 3-2** summarizes the date of the counts for roadway segments. The existing traffic volume data is contained in **Appendix C**.

Figure 3-3 illustrates the existing peak-hour traffic volumes at the study intersections. **Figure 3-4** illustrates the existing ADT volumes along the roadway segments in the study area.

	TABLE 3-1 STUDY INTERSECTIONS COUNT SOURCE DATA					
	Intersection	Date of Count (a)				
1	Commercial St & 16th St	6/3/08				
2	National Ave & 16th St	6/3/08				
3	National Ave & Sigsbee St	6/5/08				
4	Newton Ave & Sigsbee St	6/4/08				
5	Main St & Sigsbee St	6/4/08				
6	Harbor Dr & Sigsbee St	12/2/08				
7	Logan Ave & I-5 SB off-ramp	12/2/08				
8	National Ave & Beardsley St	6/5/08				
9	Newton Ave & Beardsley St	6/5/08				
	affic counts in the Year 2006 were obtained from the <i>Mercado Traffic Sta</i> ates. Traffic counts in the Year 2008 were obtained by National Data and					
Access	Study being prepared by Caltrans.					

TABLE 3-1
STUDY INTERSECTIONS COUNT SOURCE DATA (cont.)

	Intersection	Date of Count (a)
10	Main St & Beardsley St	6/5/08
11	Harbor Dr & Beardsley St	2/16/06
12	Kearny Ave & Cesar Chavez Pkwy	12/2/08
13	Logan Ave & Cesar Chavez Pkwy/SR-75 on-ramp	6/5/08
14	National Ave & Cesar Chavez Pkwy	12/2/08
15	Newton Ave & Cesar Chavez Pkwy	12/2/08
16	Main St & Cesar Chavez Pkwy	6/5/08
17	Harbor Dr & Cesar Chavez Pkwy	6/4/08
18	Logan Ave & I-5 SB on-ramp	12/2/08
19	National Ave & SR-75 off-ramp	12/2/08
20	National Ave & Evans St	3/7/06
21	Newton Ave & Evans St	3/7/06
22	Main St & Evans St	12/2/08
23	Logan Ave & Sampson St	3/15/06
24	National Ave & Sampson St	6/5/08
25	Newton Ave & Sampson St	6/5/08
26	Main St & Sampson St	6/10/08
27	Harbor Dr & Sampson St	6/11/08
28	National Ave & Sicard St	6/10/08
29	National Ave & 26th St	6/10/08
30	National Ave & I-5 SB off-ramp	6/11/08
31	Main St & 26th St	6/10/08
32	Harbor Dr & Schley St	6/10/08
33	National Ave & 28th St	12/2/08
34	Boston Ave & 28th St	12/2/08
35	Main St & 28th St	6/11/08
36	Harbor Dr & 28th St	6/11/08
37	Boston Ave & 29th St/I-5 SB on-ramp	12/2/08
38	Main St & 32nd St	6/12/08
39	Wabash & 32nd St	12/2/08
40	Harbor Dr & 32nd St	6/12/08
41	Main St & I-15 ramps	6/12/08

(a) Traffic counts in the Year 2006 were obtained from the *Mercado Traffic Study* performed by Darnell and Associates. Traffic counts in the Year 2008 were obtained by National Data and Surveying Services and from the Port Access Study being prepared by Caltrans.

	Roadway Segment	Date of Count (a)
1	I-5 SB Off Ramp at Beardsley St	2005
2	I-5 SB On Ramp at Logan Ave	2005
3	I-5 SB Off Ramp at 27th St	2005
4	I-5 SB Off Ramp at 28th St	2005
5	I-5 SB On Ramp at Boston Ave	2006
6	I-5 SB Off Ramp at Main St	2006
7	I-15 SB Off Ramp at Main St	2006
8	I-15 NB On Ramp at Main St	1998
9	SR-75 Off Ramp at National Ave	6/10/08
10	SR-75 On Ramp at Cesar Chavez Pkwy	6/10/08
11	Cesar Chavez Pkwy north of Logan Ave	2/3/10
12	Cesar Chavez Pkwy between Logan Ave and National Ave	2/9/10
13	Cesar Chavez Pkwy between National Ave and Newton Ave	6/10/08
14	Cesar Chavez Pkwy between Newton Ave and Main St	2/3/10
15	Cesar Chavez Pkwy between Main St and Harbor Dr	6/10/08
16	Sampson St between I-5 and National Ave	6/10/08
17	Sampson St between National Ave and Harbor Dr	6/10/08
18	26th St between National Ave and Newton Ave	2/03
19	28th St north of I-5 SB Off ramp	6/11/08
20	28th St between I-5 and Main St	6/11/08
21	28th St between Main St and Harbor Dr	6/11/08
22	32nd St between Main St and Wabash Blvd	6/11/08
23	32nd St between Wabash Blvd and Harbor Drive	6/11/08
24	Rigel St between Dalbergia St and I-5	6/11/08
25	Vesta St between Dalbergia St and I-5	1/06
26	Logan Ave between 17th St and Sigsbee St	12/07
27	Logan Ave between I-5 SB Off ramp and Cesar Chavez Pkwy	2/3/10
28	Logan Ave between Evans St and Sampson St	6/10/08
29	National Ave between Commercial St and 16th St	2/04
30	National Ave between 16th St and Sigsbee St	12/07
31	National Ave between Sigsbee St and Beardsley St	2003
32	National Ave between Beardsley St and Cesar Chavez Pkwy	6/10/08
33	National Ave between Cesar Chavez Pkwy and Evans St	2/3/10
34	National Ave between Evans St and Sampson St	2/3/10
35	National Ave between Sampson St and 27th St	6/10/08
36	Boston Ave between 29th St and 30th St	6/10/08
37	Main St between Beardsley St and Cesar Chavez Pkwy	2/3/10

(a) Traffic counts at the I-5 and I-15 ramps were provided by Caltrans. Traffic counts prior to the Year 2008 were obtained from the *Barrio Logan Truck Study* performed by Willdan, *Mercado Traffic Study* performed by Darnell and Associates, City of San Diego, and Wilson and Company. Traffic counts in the Year 2008 and 2010 were obtained by National Data and Surveying Services.

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	TABLE 3-2.1 ROADWAY SEGMENT COUNT SOURCE DATA	(cont.)
	Roadway Segment	Date of Count (a)
38	Main St between Cesar Chavez Pkwy and Sampson St	6/10/08
39	Main St between 26th St and 28th St	10/06
40	Main St between 28th St and 32nd St	6/10/08
41	Main St between 32 nd St and Rigel St	1999
42	Main St between Rigel St and Siva St	1/06
43	Main St between Dalbergia St and I-5 SB Off Ramp	1/07
44	Harbor Dr between Beardsley St and Cesar Chavez Pkwy	6/10/08
45	Harbor Dr between Cesar Chavez Pkwy and Sampson St	2/3/10
46	Harbor Dr between Sampson St and Schley St	6/11/08
47	Harbor Dr between Schley St and 28th St	6/11/08
48	Harbor Dr between 28th St and 32nd St	6/11/08
49	Harbor Dr between 32nd St and Vesta St	10/03
Notes:		

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(a) Traffic counts at the I-5 and I-15 ramps were provided by Caltrans. Traffic counts prior to the Year 2008 were obtained from the *Barrio Logan Truck Study* performed by Willdan, *Mercado Traffic Study* performed by Darnell and Associates, City of San Diego, and Wilson and Company. Traffic counts in the Year 2008 were obtained by National Data and Surveying Services.

Barrio Logan Co	mmunity Plan	Update				
29 / 19 ⇔ 49 / 16 ⊮ 7 / 6 16th St	 № 22 / 24 ⇔ 125 / 192 № 13 / 0 Commercial St 	 8 13 /7 8 36 /25 8 24 /16 16th St 	 № 25 / 25 ⇔ 101 / 90 2 3 / 3 National Ave 	3 8 8 8 8 15 7 15 7 15 7 15 7 15 7 15 7 15 7 15 7 15 7 15 7 11 8 7 7 7 7 7 7 7 7 7 7 7 7 7	2005 50 6 30 2005 2015 10 10 10 10 10 10 10 10 10 10 10 10 10	0 / 8 4 / 23 3 / 1 on Ave
3 / 18	9 /14 2 20 /21 5 9 /12 2	4 / 8	11 /15 2 34 /41 5 12 /7 2	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5/8	
5 2 / 1 ⇔ 42 / 27 ∞ 31 / 20 Sigsbee St	∾ 61/31 ⇔ 4/0 ∞ 6/10 Main St	 24 / 18 24 / 18 12 / 23 Sigsbee St 	∾ 20 / 13 ⇔ 831 / 314 Harbor Dr	7 91/12 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 / 12 1 / 77 8 / 33 nal Ave
1/4	1/0 2 39/39 4 5/1 2	22 / 82		68 / 210 ↔ 55 0 11 / 32 ↔ 12 / 38 / 23 / 38 / 23 / 38 / 23 / 38 / 23 / 38 / 23 / 38 / 23 / 38 / 23 / 38 / 23 / 38 / 23 / 38 / 38	8/2 2 6/20 8/19 2 5 0 2 6 7 0 2 7 0 2 6 7 0 2 6 7 0 2 6 7 0 2 6 7 0 2 7 0 2 7 0 2 7 0 2 7 0 2 7 0 2 7	
© 28 / 9 ⇔ 137 / 81 ⊘ 52 / 44 Beardsley St	© 15 / 19 ⇔ 39 / 47 ∞ 16 / 6 Newton Ave	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	≅ 20 / 9 ⇔ 90 / 33 ∞ 35 / 15 Main St	11 9 9 16/16 9 16/16 9 10/329 2 3 4 9 16/16 9 10/329 2 3 4 10/16 10/329 10/10 10	2 ∛ 5 ⇔ 13. 2 ∛ 2 ≥ 510	0 / 113 4 / 54 6 / 415 ey Ave
13 / 5	5 / 1 23 / 66 4 23 / 66 4 11 / 16 2	15 / 22	2 / 0 2 8 / 25 4 16 / 31 2	13 / 60	109 /189 ∞ 106 /262 ⇔	







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Barrio Logan Community Plan	Barrio Logan Community Plan Update			
13 13 13 13 13 14/28 19/19 14/9 14/9 14/9 Logan Ave	14 14 14 14 14 14 14 14 14 14	15 27 / 44 27 / 44 27 / 44 27 / 44 28 / 21 27 / 44 28 / 21 27 / 44 28 / 21 20 / 13 8 / 21 20 / 2	5 82 / 34 ⇔ 361 / 269 ∞ 25 / 26 Cesaf Chavez PKwy	ıs 45 / 60 ⇔ 47 / 22 2 25 / 18 Main St
54 / 97 Ø ∅ ∅ ∅ 109 / 205 ↔ 69 / 44 6/ 109 109 69 / 44 ∿ 6/ 109 109	42 / 88	28 / 52	56/53 ⊘ 43/34 ⇔ 1/7 ∿	7 /4 % 155 /455 % 4 /19 %
17 330 / 544 050 / 529 / 534 ∞ 050 / 534 ∞ 050 / 534 ∞ 050 / 534 ∞ 050 / 534 ∞ 050 / 544 050	18 □ 6 ▷ 53 / 51 8 ⇔ 60 / 73 9 Logan Ave	19 CZL/120 CZL/120 CZL/120 CZL/120 CZL/120 CZL/134 ↔ 142/134 National Ave	20 ⇒ 16/37 ⇒ 8/10 ∞ 5/27 Evans St	 S 16 / 15 ⇔ 123 / 103 ☆ 18 / 17 National Ave
107 / 375 ∞ № 0 153 / 713 ⇔ 16 / 12 № 17 16 / 12 ∞ 17 4 12	251/473 Ø № № Ø 93/267 ⇔ M 1/5 № 0 ↓ ↓ ↓ ↓ ↓ ₩ ₩ 0 ↓ ↓ ↓ ↓	67 / 160 ⇒	7 / 18	10 / 5 26 / 8 4 10 / 29 2
21 11 12 12 12 12 12 12 12 12	22 1 114/78 2 3 2 41 2 5 2 5 2 5 2 5 2 7/9 3 7/9 4 114/78 3 5 5 7/9 5 7/	23 50 50 50 50 50 50 50 50 50 50	57 55 / 18 55 / 18 5 / 33 5 / 19 / 36 Sampson St	 № 24 / 28 ⇔ 94 / 70 ≥ 48 / 21 National Ave
12/13	11 / 5	90 / 101	13/25	7 / 13 % 41 / 77 & 16 / 30 %





Barrio Logan Co	mmunity Plan	Update				
5 22/15 ⇔ 66/42 ∞ 3/5 Sampson St	≅ 8/6 ⇔ 17/16 ☆ 2/0 Newton Ave	26 15 / 10 ⇔ 59 / 27 ∞ 10 / 8 Sampson St	ıs 16 / 8 ⇔ 115 / 44 ∞ 53 / 27 Main St	27 927 92,728 92,728 92,92,92 92	8 2 11 / 9 8 11 / 9 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	∾ 3 / 1 ⇔ 155 / 124 ☆ 27 / 8 National Ave
15 / 23	4 /6 2 35 /63 4 7 /3 2	5/13 ⊅ 33/82 ⇔ 12/8 ∿	14 /5 ≈ 31 /46 ⇔ 35 /49 ∿	10 / 56	4/10 ⊘ 79/162 ⇔ 7/8 ∿	13 /3 a 25 /25 🗢 12 /17 a
53 21/2 21/2 21/2 26th St 26th St	∾ 48 / 54 ⇔ 191 / 117 ⊉ 36 / 35 National Ave	30	⇔ 224 / 194 ⊉ 42 / 31 National Ave	31 ∞ 0 2 7 ∞ 1 48 / 45 ∞ 3 3 ∞ 0 7 ∞ 1 48 / 45 ∞ 59 / 19 Main St	25 27 27 27 27 27 27 27 27 27 27	∾ 17/39 ⇔ 531/182 Harbor Dr
3/5	7 /14 ∞ 18 /19 ⊕ 15 /34 ∞	110/275 ⇔ ten 4/10 ∾ to 88 s	28 / 32 &	10 / 14	58 / 75	
33 307 /102 ⇔ 166 /210 ∞ 34 /70 28th St	∾ 49 / 128 ⇔ 422 / 327 ☆ 71 / 162 National Ave	24 122 /245 245 28th St	 is 64 / 43 ⇔ 17 / 12 ₂ 8 / 7 Boston Ave 	35 6/2 / 80 8/2 / 90 8/2 / 11 8/2 / 12 1/238 ⇔ 245 / 121 2/249 / 78 Main St	22/13 ⇒ 15/12 ⇒ 333/480 28th St	∾ 115 / 221 ⇔ 372 / 202 ⊮ 13 / 8 Harbor Dr
106 / 94	33 / 18 ∞ 83 / 98 ⊕ 25 / 46 ∞	22 / 42	9 / 7 ≈ 377 / 516 ⇔ 90 / 203 №	58 / 174	56 / 156	0/1 ∞ 5/133 ⇔ 1/0 ∞









FIGURE 3-3.2 Existing Peak-Hour Traffic Volumes (cont.)

Barrio Logan C	community Plan	Update					
37 4	 № 40 / 58 ⇔ 57 / 46 ☆ 6 / 5 Boston Ave 	8 12 /27 ⇔ 83 /61 ⊘ 39 /123 32nd St	ıs 74 / 98 ⇔ 317 / 241 2 314 / 207 Main St		40 001/981 47 / 172 112 / 127 11 / 41 244 / 120	739 89 32nd	 № 276 / 321 ⇔ 316 / 267 № 207 / 26 Harbor Dr
224 / 495 40 / 59 7 / 14 S	4 /6 2 20 /49 U 5 /13 2	9 / 24	110 /183 ⊘ 50 /112 ⇔ 26 /307 ≌	36 / 63 ▷ ▷ ▷ 9 / 71 ▷ C1 / 62 29 / 41 ▷ 1 / 62 24 / 37 ▷ 28	_	6 ⇒	20 /48 & 105 /487 & 19 /97 &
41 268 / 126 & 108 / 126	∾ 107 / 154 ⇔ 390 / 275 Main St						
36 / 254							







Intersection Analysis

Table 3-3 displays the LOS analysis results for the study intersections under Existing Conditions. As shown in the table, all intersections currently operate at LOS D or better during both peak periods, except for the following intersection:

Boston Avenue & I-5 SB On-Ramp (LOS F – p.m. peak)

The movement that operates at LOS F is the northbound movement, which is stop controlled. In the afternoon peak, the majority of the vehicles traveling through the intersection are making a left-turn onto the I-5 Southbound Ramp from Boston Avenue and the vehicles in the northbound approach need to find a gap to turn onto Boston Avenue or continue across the intersection.

In addition to the level of service results based on intersection delay, a queuing analysis found that the following intersections have movements that may exceed the available storage capacity with a 95th percentile level of traffic volumes:

- Kearney Street & Cesar Chavez Parkway (Westbound movements a.m. peak);
- Logan Avenue & Cesar Chavez Parkway (Southbound left-turn movement p.m. peak);
- Harbor Drive & Cesar Chavez Parkway (Eastbound left-turn movement a.m. and p.m. peak);
- Boston Avenue & 28th Street (Southbound left-turn movement- a.m. and p.m. peaks);
- Main Street & 28th Street (Southbound left-turn movement- a.m. and p.m. peaks);
- Harbor Drive & 28th Street (Eastbound left-turn movement- a.m. and p.m. peaks);
- Main Street & 32nd Street (Westbound left-turn and Northbound left-turn movements a.m. and p.m. peaks); and
- Main Street & I-15 Ramps (Eastbound left-turn movement p.m. peaks)

Based on Synchro 6.0 queuing report, none of the above listed intersections would have queuing interactions that would affect the LOS and/or capacity of the intersections.

Appendix D contains the LOS calculation worksheets.

Roadway Segment Analysis

Table 3-4 displays the roadway segments analysis under Existing Conditions. As shown in the table, based on planning level analysis and on ADT volumes, it is estimated that all roadway segments function at an acceptable LOS in the study area, except for the following segments:

- 28th Street between I-5 and Boston Avenue (LOS E)
- 32nd Street between Main Street and Wabash Boulevard (LOS E)
- National Avenue between Sicard Street and 27th Street (LOS F)
- Boston Avenue between 28th Street and 32nd Street (LOS F)
- Main Street between 32nd Street and Rigel Street (LOS F)
- Main Street between Rigel Street and Una Street (LOS F)
- Main Street between Una Street and I-5 SB Off-Ramp (LOS F)

The roadway segment analysis used in this study is based on theoretical capacities based on the number of travel lanes. The analysis does not take into account other physical features that can affect the capacity of a roadway segment like grades, number of traffic signals, number of driveways, parking availability, etc.

In addition, the analysis does not take into account the different traffic peak periods experienced on these roadways due to the surrounding land uses. As an example, the Barrio Logan traffic patterns are unique in that they are heavily influenced by the Port of San Diego and the Navy Base traffic generators who peak-hour of use do not correspond to typical peak-hour commuter traffic. Therefore, the typical planning level capacity for these streets may understate the carrying capacity of these roadways. To better represent the conditions of a roadway segment within the Barrio Logan community, the operations of the upstream and downstream intersections of each respective segment during the peak periods would indicate whether the roadway segment would have adequate capacity. As shown in the intersection analysis tables, all intersections along the failing roadway segments would operate at acceptable LOS.

Freeway Segment Analysis

Table 3-5 displays the freeway segments analysis under Existing Conditions. As shown in the table, it is estimated that all freeway segments function at an acceptable LOS in the study area, except for the segment of Interstate 5 between Interstate 15 and Division Street which operates at LOS E during the morning peak-hour period.

TABLE 3-3 EXISTING CONDITIONS PEAK-HOUR INTERSECTION LOS SUMMARY

				EXIS	TING
	INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	DELAY (a)	LOS (b)
1	Commercial St & 16th St	Signal	AM	19.4	В
1	commercial St & Tour St	Signar	PM	24.6	С
2	National Ave & 16th St	Two-Way Stop	AM	11.7	В
2	Ivational Ave & Toth St	1 wo- way Stop	PM	12.5	В
3	National Ave & Sigsbee St	Signal	AM	9.6	А
5	Ivational Ave & Sigsbee St	Signal	PM	9.6	А
4	Newton Ave & Sigsbee St	All-Way Stop	AM	7.9	А
4	Newton Ave & Sigsbee St	All-way Stop	PM	7.6	А
5	Main St & Sigsbee St	All-Way Stop	AM	7.4	А
5	Wall St & Sigsbee St	All-way Stop	PM	7.4	А
6	6 Harbor Dr & Sigsbee St	One-Way Stop	AM	17.0	С
0		One-way Stop	PM	18.1	С
7	Logan Ave & Beardsley St- I-5 SB ramp	All-Way Stop	AM	11.1	В
'	Logan Ave & Deardsley St- 1-5 SD fallip	An-way Stop	PM	11.9	В
8		All-Way Stop	AM	8.5	А
0	National Ave & Beardsley St	All-way Stop	PM	8.7	А
9		All Way Stop	AM	8.5	А
9	Newton Ave & Beardsley St	All-Way Stop	PM	8.2	А
10	0 Main St & Beardsley St	All-Way Stop	AM	8.5	А
10	Main St & Beardsley St		PM	7.8	А
11	Harbor Dr & Beardsley St	One-Way Stop	AM	20.3	С
11	Harbor Dr & Beardsley St		PM	18.3	С
12	Kearney St & Cesar E. Chavez Pkwy	Signal	AM	21.7	С
12	Kearney St & Cesar E. Chavez I Kwy	Signal	PM	21.2	С
13	Logan Ave & Cesar E. Chavez Pkwy	Signal	AM	14.0	В
15	Eogan Ave & Cesar E. Chavez I Kwy	Signal	PM	13.0	В
14	National Ave & Cesar E. Chavez Pkwy	Signal	AM	11.0	В
14	National Ave & Cesal E. Chavez I Kwy	Signal	PM	14.0	В
15	Newton Ave & Cesar E. Chavez Pkwy	Signal	AM	8.1	А
15	Newton Ave & Cesar E. Chavez I Kwy	Signal	PM	9.1	А
16	Main St & Cesar E. Chavez Pkwy	Signal	AM	9.6	А
10		Signal	PM	8.7	А
17	Harbor Dr & Cesar E. Chavez Pkwy	Signal	AM	33.2	С
1/	Lindon Di & Cesai L. Chavez i Kwy	Signal	PM	43.6	D
18	Logan Ave & I-5 SB On-ramp	One-Way Stop	AM	8.8	А
10	Logan Ave & 1-5 SD Oli-fallip	One-way Stop	PM	9.9	А
19	National Ave & SR-75 Off-ramp	One-Way Stop	AM	10.1	В
17		One-way Stop	PM	11.0	В
20	National Ave & Evans St	Two-Way Stop	AM	11.2	В
20	Tational Ave & Evails St	1 wo- way Stop	PM	11.9	В

Notes:

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement. (b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0

(c) Delay calculations based on SimTraffic 6.0 microsimulation. These intersections were analyzed with SimTraffic to account for interaction with the trolley

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	PEA	TABLE EXISTING CO K-HOUR INTERSECTIO	NDITIONS	(cont.)	
	INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	EXIST DELAY (a)	TING LOS (b)
			AM	9.8	A
21	Newton Ave & Evans St	Two-Way Stop	PM	9.8	A
		0 11/ 0	AM	9.3	А
22	Main St & Evans St	One-Way Stop	PM	9.6	А
22	Lange Area & Campany St	All Wess Of an	AM	10.0	В
23	Logan Ave & Sampson St	All-Way Stop	PM	10.7	В
24	National Asso & Gauss - Gr	c: 1	AM	10.3	В
24	National Ave & Sampson St	Signal	PM	9.4	А
25	Number And & Company Cit		AM	7.5	А
25	Newton Ave & Sampson St	All-Way Stop	PM	7.6	А
26	Main St. 9. Common St.		AM	8.6	А
26	Main St & Sampson St	All-Way Stop	PM	8.2	А
27	HI DAG	c: 1	AM	23.1	С
27	Harbor Dr & Sampson St	Signal	PM	27.1	C
26			AM	12.0	B
28	National Ave & Sicard St	Two-Way Stop	PM	11.4	B
• •			AM	8.7	А
29	National Ave & 26th St	All-Way Stop	PM	8.8	А
20		0 W 0	AM	11.5	В
30	National Ave & I-5 SB Off-ramp	One-Way Stop	PM	17.8	С
			AM	7.7	А
31	Main St & 26th St-Schley St	All-Way Stop	PM	8.0	А
22	Harken Dr. G. Califord C.	Gianal	AM	19.6	В
32	Harbor Dr & Schley St	Signal	PM	14.1	В
22	National Ava & 28th St	Cianal	AM	35.3	D
33	National Ave & 28th St	Signal	PM	29.8	С
24	Poston Ava & 20th St	Cianal	AM	10.6	В
34	Boston Ave & 28th St	Signal	PM	17.7	В
25	Main St. R. 28th St.	C	AM	23.4	С
35	Main St & 28th St	Signal	PM	29.2	С
36	Harbor Dr. & 28th St	Signal	AM	34.3	С
36	Harbor Dr & 28th St	Signal	PM	45.6	D
37	Boston Ava & I.5 SP On some 20th St	One Wey Ster	AM	17.3	С
37	Boston Ave & I-5 SB On-ramp-29th St	One-Way Stop	PM	260.7	F
29	Main St & 32nd St	Cianal	AM	21.9	С
38	Main St & 52nd St	Signal	PM	29.2	С
20	22nd St & Wahash St	C	AM	38.5	D
39	32nd St & Wabash St	Signal	PM	32.0	С
40	Horbor Dr. & 22nd St	Cianal	AM	31.7	С
40	Harbor Dr & 32nd St	Signal	PM	51.1	D
41	Main St & L 15 Damas	Cianal	AM	10.8	В
41	Main St & I-15 Ramps	Signal	PM	11.5	В

Notes: Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0

(c) Delay calculations based on SimTraffic 6.0 microsimulation. These intersections were analyzed with SimTraffic to account for interaction with the trolley

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TABLE 3-4 **EXISTING CONDITIONS** ROADWAY SEGMENT LOS SUMMARY

		LOS E		V/C RATIO	
ROADWAY SEGMENT	ROADWAY CLASSIFICATION (a)	CAPACITY	ADT (b)	(c)	LOS
Cesar Chavez Pkwy	·	•		•	
north of Logan Ave	3 Lane Collector (with TWLT)	22,500	14,170	0.63	С
between Logan Ave and National Ave	4 Lane Collector (with TWLT)	30,000	15,300	0.51	С
between National Ave and Newton Ave	3 Lane Collector (with TWLT)	22,500	12,494	0.56	С
between Newton Ave and Main St	3 Lane Collector (with TWLT)	22,500	11,812	0.53	С
between Main St and Harbor Dr	4 Lane Collector (with TWLT)	30,000	10,381	0.35	В
Sampson St		•	•	• • •	
between I-5 and National Ave	2 Lane Collector (No TWLT)	8,000	3,086	0.39	В
between National Ave and Harbor Dr	2 Lane Collector (No TWLT)	8,000	2,561	0.32	В
26th St					
between National Ave and Main St	2 Lane Collector (No TWLT)	8,000	2,380	0.30	А
28th St			,	1	
between I-5 and Boston Ave	3 Lane Collector (with TWLT)	22,500	22,000	0.98	Е
between Boston Ave and Main St	4 Lane Collector (with TWLT)	30,000	18,856	0.63	C
between Main St and Harbor Dr	4 Lane Major Arterial	40,000	16,658	0.42	B
32nd St			.,		-
between Main St and Wabash Blvd	2 Lane Collector (with TWLT)	15,000	13,172	0.88	Е
between Wabash Blvd and Harbor Drive	4 Lane Major Arterial	40,000	19,785	0.50	B
Rigel St		,			
between Main St and I-5	2 Lane Collector (No TWLT)	8,000	1,723	0.22	А
Vesta St		0,000	1,720	0.22	
between Main St and I-5	2 Lane Collector (No TWLT)	8,000	4,900	0.61	С
Logan Ave		0,000	1,200	0.01	U
between 17th St and Sigsbee St	2 Lane Collector (with TWLT)	15,000	3,659	0.24	А
between Sigsbee St and Cesar Chavez Pkwy	2 Lane Collector (with TWLT)	15,000	7,478	0.50	C
between Cesar Chavez Pkwy and 26th St	2 Lane Collector (with TWLT)	15,000	2,954	0.20	A
National Ave		,	_,, .	0.20	
between 16th St and Sigsbee St	2 Lane Collector (with TWLT)	15,000	2,603	0.17	А
between Sigsbee St and Beardsley St	2 Lane Collector (with TWLT)	15,000	4,500	0.30	A
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	8,000	3,511	0.44	C
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT)	8,000	4,643	0.58	C
between Evans St and Sicard St	2 Lane Collector (with TWLT)	15,000	3,677	0.25	A
between Sicard St and 27th St	2 Lane Collector (Wall 1 (VEI)) 2 Lane Collector (No TWLT)	8,000	8,445	1.06	F
Boston Ave		0,000	0,115	1.00	
between 28th St and 32th St	2 Lane Collector (No TWLT)	8,000	2,420	0.30	А
Main St		0,000	_, 0		
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	8,000	3,566	0.45	С
between Deardshey St and Cesar Chavez 1 kwy between Cesar Chavez Pkwy and 26th St	2 Lane Collector (No TWLT) 2 Lane Collector (No TWLT)	8,000	2,598	0.33	B
between 26th St and 28th St	3 Lane Collector (No TWLT)	11,250	7,435	0.66	C
between 28th St and 32nd St	3 Lane Collector (No TWLT)	11,250	11,266	1.00	F
between 32nd St and Rigel St	4 Lane Collector (No TWLT)	15,000	21.100	1.41	F
between Rigel St and Una St	2 Lane Collector (with TWLT)	15,000	15,944	1.06	F
between Una St and I-5 SB Off Ramp	2 Lane Collector (with TWLT) 2 Lane Collector (with TWLT)	15,000	15,177	1.00	F
Harbor Dr		10,000	10,177	1.01	•
between Beardsley St and Cesar Chavez Pkwy	4 Lane Major Arterial	40,000	12,094	0.30	А
between Cesar Chavez Pkwy and Sampson St	4 Lane Major Arterial	40,000	13,778	0.34	A
between Cesar Chavez T Kwy and Sampson St between Sampson St and Schley St	4 Lane Major Arterial	40,000	9,080	0.23	A
between Schley St and 28th St	4 Lane Major Arterial	40,000	8,816	0.23	A
between 28th St and 28th St between 28th St and 32nd St	4 Lane Major Arterial	40,000	18,900	0.22	B
between 22th St and S2hd St between 32nd St and Vesta St	4 Lane Major Arterial	40,000	16,320	0.47	B
Notes:	- Lane major miteriar	10,000	10,520	0.71	Ъ

TWLT= Two-way left-turn lane (or centerlane)

Bold values indicate roadway segments operating at LOS E or F.
(a) Existing roadway classifications are based on field observations.
(b) Average Daily Traffic (ADT) volumes for the roadway segments were collected between 1999-2010.
(c) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.

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	FREI	EXISTING	BLE 3-5 CONDITIONS ENT LOS SUM				
FREEWAY SEGMENT	DIRECTION	NUMBER OF LANES	CAPACITY (a)	ADT (b)	PEAK- HOUR VOLUME (c)	V/C RATIO	LOS
		AM	PEAK				
1-5			0.400		7.700	0.000	
J Street to SR-75 Junction	NB	4 M	9,400	164,000	7,793	0.829	D
	SB	4 M	9,400				
SR-75 Junction to 28th Street	NB	4 M	9,400	160,000	7,603	0.809	D
	SB	4 M	9,400		5.015	0.550	
28th Street to I-15 Interchange	NB	4 M	9,400	154,000	7,317	0.778	С
	SB	4 M	9,400		0.022	0.050	Б
-15 Interchange to Division St	NB	4 M	9,400	188,000	8,933	0.950	E
[-15	SB	4 M	9,400				
	NB	3 M	7,050				
I-5 Interchange to Ocean View Blvd	SB	3 M	7,050	95,000	4,722	0.670	С
SR-75 (d)	52	0 111	7,000		.,. ==	0.070	
	WB	2 M	4,700	72.000			
I-5 Interchange to Glorietta Blvd	EB	3 M	7,050	73,000	4,629	0.657	С
		PM	PEAK				
[-5							
Street to SR-75 Junction	NB	4 M	9,400	164,000			
	SB	4 M	9,400	,	7,036	0.749	С
SR-75 Junction to 28th Street	NB	4 M	9,400	160,000			
	SB	4 M	9,400	,	6,865	0.730	С
28th Street to I-15 Interchange	NB	4 M	9,400	154,000			
2	SB	4 M	9,400	*	6,607	0.703	C
-15 Interchange to Division St	NB	4 M	9,400	188,000			
	SB	4 M	9,400	, .	8,066	0.858	D
-15						0 = 10	~
I-5 Interchange to Ocean View Blvd	NB	3 M	7,050	95,000	5,216	0.740	С
SR-75 (d)	SB	3 M	7,050				
	WB	3 M	7,050		4,585	0.650	С
I-5 Interchange to Glorietta Blvd	EB	2 M	4,700	73,000	4,303	0.030	

Bold values indicate freeway segments operating at LOS E or F.

M=Main Lane; A= Auxiliary Lane.

This analysis evaluates the higher peak-hour direction of traffic

(a) The capacity is calculated as 2,350 ADT per main lane and 1,200 ADT per auxiliary lane
(b) Traffic volumes provided by Caltrans
(c) Peak-hour volume calculated by: (ADT*K*D)/Truck Factor
(d) SR-75 has reversable lanes.

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<u>Parking</u>

On-street

Parking has been a major issue and concern in Barrio Logan for decades. The community parking shortage is largely due to there not being enough parking provided on-site for workers at Harbor-related industries. The community and the city have undertaken various measures to control where people park through the use of residential permit parking districts and time limited parking.

Three time periods were selected for data collection to capture a snapshot of on-street parking occupancy in the Barrio Logan community. The first time period selected was between 9:00 a.m. and 11:00 a.m. This time period captured the majority of the industrial and military uses as most of the employees would be at work during this time period. The second time period selected was between 12:00 p.m. and 2:00 p.m. and captured the peak retail/commercial parking demand. This time period is consistent with the data obtained from the *Barrio Logan Parking Study*, dated April 20, 1999 and prepared by Linscott, Law & Greenspan Engineers. The third time period selected was between 7:00 p.m. and 9:00 p.m. and captured the peak residential uses as most people would be home during this time period.

An inventory of all on-street parking spaces was conducted in June 2008 and counted a total of 2,842 onstreet parking spaces for the entire Barrio Logan community. Of the 2,842 parking spaces, the majority of them (2,325 spaces, 82 percent) are unrestricted and available for the general public. The remaining parking spaces have some sort of restriction, such as time restrictions or residential permit parking.

The on-street parking occupancy data collection was conducted on Thursday, June 5, 2008. In order to show the different peaking characteristics in different parts of the community, the Barrio Logan community was separated into the following five areas, with the first zone in the northwest portion of the community and the last zone in the southeastern portion of the community. **Figure 3-5** graphically displays the five areas.

- <u>Area 1</u>: Generally bounded by I-5 to the north, Harbor Drive to the south, SR-75 to the east, and 16th Street to the west. Land uses generally include commercial and residential.
- <u>Area 2</u>: Generally bounded by I-5 to the north, Harbor Drive to the south, 26th Street to the east, and SR-75 to the west. Land uses generally include commercial and residential.
- <u>Area 3</u>: Generally bounded by I-5 to the north, Harbor Drive to the south, 28th Street to the east, and 26th Street to the west. Land uses generally include industrial and some residential.
- <u>Area 4</u>: Generally bounded by I-5 to the north, Main Street to the south, 32nd Street to the east, and 28th Street to the west. Land uses generally include residential with some commercial and industrial.
- <u>Area 5</u>: Generally bounded by I-5 to the north, Main Street to the south, Woden Street to the east, and 32nd Street to the west. Land uses generally include industrial and commercial.

Table 3-6 summarizes the results of the on-street parking occupancy survey. As shown in the table, parking spaces are classified by restriction or type. The majority, 82 percent, of on-street parking spaces in the Barrio Logan Community are spaces without any restrictions. The residential permit restriction is the most prevalent restriction and accounts for 9 percent of the parking spaces. Time limit and metered parking accounts for 5 percent of the on-street parking supply. Loading zones account for 3 percent of the spaces and the remaining 1 percent accounts for handicap parking spaces.

Appendix E contains a more detailed summary by each block face for the entire community.



TABLE 3-6 EXISTING CONDITIONS ON-STREET PARKING SUMMARY

	1	fime Lim	it						
AREA	15 MIN.	30 MIN.	2 HR.	Residential PERMIT	LOADING ZONE	METERED	HANDI- CAP	REMAINING SPACES	TOTAL SPACES
Zone 1	7	7	5		21		6	755	800
Zone 2	11	10	37	146	26		7	560	797
Zone 3	5	7	16	71	22	17	3	215	356
Zone 4		4		41	10	10	5	279	349
Zone 5	3	5			14		2	516	540
TOTAL	26	33	58	258	93	27	23	2,325	2,842
Percentage (a)	1%	1%	2%	9%	3%	1%	1%	82%	

Notes:

Parking inventory taken on June 05, 2008.

K:\TPTO\095707000\Data\Parking Data\[Parking Occupancy Data Collection.xls]Parking Table

Offsite/Off-street

Several off-street parking areas in Barrio Logan were observed to be used by two major port tenants, NASSCO and BAE Systems. These lots are depicted on **Figure 3-6** and occur either in privately owned lots or in railroad right-of-way located north of Harbor Drive. **Table 3-7** provides a summary of the parking supply and description of each of these parking areas. Over 2,600 parking spaces are located in these lots, which were observed to be full or nearly full during working hours.

	TABLE 3-7 EXISTING CONDITIONS OFF-STREET PARKING SUMM	ARY	
LOCATION	DESCRIPTION	USER	TOTAL SPACES
Harbor Dr between 32nd St , Chollas Creek and Railroad Tracks	Upper lot between Railroad and Navy base		170
Chomas Creek and Kanroad Tracks	Lower lot accessed from Harbor Dr		70
	Upper lot between Railroad and Navy Base		280
Harbor Dr between Chollas Creek and 28 th St	Middle lot between freight and trolley tracks	NASSCO, owned by BN&SF Railroad	390
	Lower lot access from Harbor Dr	Divest Rambad	280
Harbor Dr between 28 th St and	Upper lot between freight tracks and Harbor Dr		240
Schley St	Lower lot between freight tracks and Harbor Drive		100
Harbor Dr between Schley St and Sampson St	Lot between trolley tracks and Harbor Dr, access is from Schley St and Harbor Dr		100
Main St between Sampson St, Schley St and trolley tracks	Privately owned lot	BAE Systems	780
Main St east of Schley St and north of trolley tracks	Privately owned lot	NASSCO	180
Boston Ave west of 29 th St and south of I-5	Privately owned lot	NASSCO	70
	TOTAL		2,660





Figure 3-6: Off-Site/Off-Street Parking

Barrio Logan Community Plan Update



January 2011







Truck Traffic

Within certain areas in the Barrio Logan community, trucks comprise a high percentage of the vehicular traffic on the roadways. Based on data obtained in October 2003 and provided in the *Barrio Logan Truck Study*, dated May 4, 2004 (Willdan), approximately 32 percent of the vehicles on Cesar Chavez Parkway south of Harbor Drive consisted of trucks. The large percentage was due to the Tenth Avenue Marine Terminal that requires trucks to transport goods to/from the terminal to the rest of the region. Along Cesar Chavez Parkway between Harbor Drive and I-5, the truck percentage ranged between 16 and 18 percent of the total traffic volume on the street. Along Harbor Drive, the percentage of truck traffic decreased from approximately 10 percent near Cesar Chavez Parkway to approximately seven percent near 32^{nd} Street.

However, since the time that the study was completed, truck restrictions on various roadways in the community (as described under the Roadway Network section) have been implemented, and trucks to/from the Tenth Avenue Marine Terminal over five tons are required to use 28th Street to access I-5.

Vehicle classification counts were obtained on June 11 and 12, 2008 along Cesar Chavez Parkway between National Avenue and Newton Avenue. The average of the two days of data indicated that on a daily basis, 13 percent of the total vehicles along this segment are trucks. Although there has been a decline in truck traffic along Cesar Chavez Parkway, it appears that the truck restrictions along Cesar Chavez Parkway are not effective and field observations have verified that trucks are still present on this roadway.

Additional truck counts were collected during the morning and afternoon peak-hours along the Harbor Drive intersections between Cesar Chavez Parkway and Schley Street. These counts were collected in June and July 2009. The purpose of the counts was to estimate the existing truck distribution for the port industrial sites. The counts indicated that the majority of truck traffic uses Schley Street and Main Street to access the I-5 ramps at 28th Street and Boston Avenue. **Appendix F** contains copies of the truck count data.

Truck Restrictions

Based on the recommendation outlined in the *Barrio Logan Truck Study*, dated May 4, 2004 (Willdan), trucks over five tons are currently restricted along Cesar Chavez Parkway between I-5 and Harbor Drive. For the trucks accessing the Tenth Avenue Marine Terminal from I-5, the truck route is via 28th Street and Harbor Drive. As shown in **Figure 3-7** below, a sign indicating the truck route is placed on the south leg of the Cesar Chavez Parkway/Harbor Drive intersection.

However, based on field observations, trucks in excess of five tons are still using Cesar Chavez Parkway and Main Street via Sampson Street and Schley Street to access I-5. Trucks using Main Street to/from I-5 are avoiding the 28th Street/Harbor Drive intersection due to the geometric deficiencies (tight turns for large vehicles) and traffic congestion.



Figure 3-7 Truck Route Sign for Trucks Destined to I-5

An inventory of all existing truck restriction signs within the Barrio Logan community was completed in May 2008. Two types of truck restriction signs are present. The first type is a sign restricting trucks that weigh over one ton. All of these signs are located along Beardsley Street between Logan Avenue and Newton Avenue and along Newton Avenue between Sigsbee Street and Beardsley Street.

The second type is a sign restricting trucks that weigh over five tons. These signs are generally located in the area between Cesar Chavez Parkway and 27^{th} Street, along the following street segments:

- Cesar Chavez Parkway between I-5 and Harbor Drive
- Evans Street between Logan Avenue and Main Street
- Sampson Street between Logan Avenue and Main Street
- Sicard Street between Logan Avenue and Main Street
- 26th Street between Logan Avenue and Main Street
- 27th Street between Newton Avenue and Main Street

Figure 3-8 shows examples of several truck restriction signs that are found in the community. It should be noted that truck restrictions do not apply to delivery trucks needing to access facilities located within the community. **Figure 3-9** graphically displays the truck routes and the truck restrictions in the Barrio Logan community.

Figure 3-8 Examples of Truck Restriction Signs





4.0 HORIZON YEAR (2030) WITH BARRIO LOGAN ADOPTED COMMUNITY PLAN

This section summarizes the results of the Horizon Year (2030) conditions analysis within the Barrio Logan community taking into account the land use changes proposed under the Adopted Community Plan. This section is included for planning comparison purpose only. Since this report does not analyze for traffic related impact for the Adopted Community Plan, a detailed peak-hour intersection analysis was not included in this chapter.

Roadway Network

No roadway network changes are assumed to take place under this scenario, with the exception of the addition of a High Occupancy Vehicle (HOV) lane along the I-5 Corridor for both directions of traffic. The additional HOV lane is listed in Sandag's 2030 Regional Transportation Plan (RTP).

Traffic Volumes

The Horizon Year Average Daily Traffic (ADT) volumes on the roadway segments in the study area were derived from a City of San Diego traffic forecast model that incorporated the land use changes proposed under the Adopted Community Plan. A copy of the forecast model is included in **Appendix G**.

Table 4-1 presents a more detailed trip generation summary for the community with the land uses included in the Adopted Community Plan. As shown in the table, the land use designation of the Adopted Community Plan would generate a total of approximately 180,666 average daily trips, including 12,390 (9,713 in and 2,677 out) morning peak-hour trips and 18,484 (6,614 in and 11,870 out) afternoon peak-hour trips.

Modeled forecast volumes experienced some minor refinements. In the process of calibrating the existing model, it was concluded that three post model adjustments should be made to the 2030 traffic models. Traffic volumes along Cesar Chavez Parkway between Newton Avenue and Main Street were reduced by 4,300 ADT to account for Newton Avenue not being in the model. Traffic volumes on 28th Street and 32nd between Main Street and Harbor Drive were increased by 4,000 ADT and 600 ADT, respectively, per calibration between base year model and actual traffic volume counts. Minor smoothing of traffic volumes were made to reflect the gross nature of model loadings from TAZs. Volumes for streets that were not in the traffic model were estimated applying a growth rate generally consistent with other facilities in the community. Resulting daily traffic volumes for the Adopted Community Plan are depicted in **Figure 4-1**.



TRIP GENE	RATION SUMM	TABLE 4-1 IARY (ADOP	TED CO.	MMUN	TTY PLA	N)		
Land Use	Units ¹	Daily Trips	AN	/I Peak-H	Iour	F	M Peak-H	Iour
			In	Out	Total	In	Out	Total
ACTIVE PARK	8.50 acre	372	0	15	15	0	30	30
ELEMENTARY SCHOOL (stu)	529.00 stu	1,539	286	191	477	117	175	292
FAST FOOD REST. (ksf)	19.50 ksf	13,675	328	219	547	547	548	1,095
FIRE OR POLICE STATION	1.00 site	229	31	3	34	3	31	34
HEAVY INDUSTRY (ksf)	3,490.30 ksf	14,140	1,400	155	1,555	339	1,358	1,697
INACTIVE USE	7.50 acre	0	0	0	0	0	0	0
JUNIOR COLLEGE (ksf)	70.00 ksf	1,295	140	15	155	31	73	104
LIGHT INDUSTRY (ksf)	3,009.40 ksf	48,157	4,767	531	5,298	1,156	4,623	5,779
LOW RISE OFFICE(3917)(ksf)	178.60 ksf	2,601	257	29	286	62	250	312
LOW RISE OFFICE(3921)(ksf)	132.30 ksf	2,464	244	27	271	59	237	296
LOW RISE OFFICE(3957)(ksf)	84.10 ksf	1,476	146	16	162	35	142	177
LOW RISE OFFICE(3988)(ksf)	31.30 ksf	698	69	8	77	17	67	84
LOW RISE OFFICE(FT3985)(ksf)	15.70 ksf	414	48	6	54	12	46	58
LOW RISE OFFICE(FT3988)(ksf)	120.90 ksf	1,937	227	25	252	54	217	271
MARINA (CCDC)	0.00 acre	0	0	0	0	0	0	0
MARINE TERMINAL	0.00 acre	0	0	0	0	0	0	0
MILITARY USE (Gate 9 - site)	0.00 site	7,581	68	159	227	318	213	531
MULTI-FAMILY (BL)	3,191.00 du	19,491	176	408	584	819	546	1,365
NEIGHBORHOOD SHOP CNT (ksf)	175.10 ksf	20,813	500	333	833	1,146	1,143	2,289
OTHER HEALTH CARE (ksf)	112.70 ksf	5,610	269	67	336	168	393	561
OTHER PUBLIC SERVICE	0.20 acre	58	5	0	5	2	5	7
OTHER TRANSPORTATION	5.10 acre	433	42	19	61	19	46	65
PARKING	0.50 acre	0	0	0	0	0	0	0
RAIL STATION (BL)	0.60 acre	181	18	7	25	8	19	27
REGIONAL COMM.(Mtro)(ksf)	0.00 ksf	5,817	81	35	116	262	262	524
SINGLE FAMILY (BL)	31.00 du	274	5	17	22	18	9	27
SPECIALTY COMM.(mtro)(ksf)	0.00 ksf	2,958	53	36	89	133	133	266
STREETFRONT COMMERCIAL (ksf)	698.60 ksf	27,994	505	335	840	1,260	1,260	2,520
WAREHOUSING (ksf)	90.60 ksf	459	48	21	69	29	44	73
WHOLESALE TRADE	0.00 acre	0	0	0	0	0	0	0
Fotal		180,666	9,713	2,677	12,390	6,614	11,870	18,484

 I. du = Dwelling Unit; stu = Students; Kst = Thousand square rest

 K:\SND_TPTO\095707000\Excel\[707000TG.xlsm]ACP Totals (LU)

Roadway Segment Analysis

Table 4-2 displays the roadway segment analysis under the Horizon Year (2030) conditions for the Adopted Community Plan. As shown in the table, based on planning level analysis and on ADT volumes, the Adopted Community Plan would be considered having a cumulative roadway segment impact along the following roadway segments:

- Cesar Chavez Parkway between Logan Avenue and National Avenue (LOS E);
- Cesar Chavez Parkway between National Avenue and Newton Avenue (LOS F);
- Cesar Chavez Parkway between Newton Avenue and Main Street (LOS F):
- Sampson Street between National Avenue and Harbor Drive (LOS F);
- 26th Street between National Avenue and Main Street (LOS F);
- 28th Street between I-5 and Boston Avenue (LOS F);
- 32nd Street between Main Street and Wabash Boulevard (LOS F):
- Vesta Street between Main Street and I-5 Ramps (LOS E);
- Logan Avenue between Sigsbee Street and Cesar Chavez Parkway (LOS F);
- National Avenue between 16th Street and Sigsbee Street (LOS E);
- National Avenue between Sigsbee Street and Beardsley Street (LOS E);
- National Avenue between Beardsley Street and Cesar Chavez Parkway (LOS F);
- National Avenue between Cesar Chavez Parkway and Evans Street (LOS F);
- National Avenue between Sicard Street and 27th Street (LOS F);
- Boston Avenue between 28th Street and 29th Street (LOS F);
- Boston Avenue between 29th Street and 32nd Street (LOS F);
- Main Street between Cesar Chavez Parkway and Evans Street (LOS F);
- Main Street between Evans Street and 26th Street (LOS F);
- Main Street between 26th Street and 28th Street (LOS F); Main Street between 28th Street and 29th Street (LOS F);
- Main Street between 29th Street and 32nd Street (LOS F): •
- Main Street between 32nd Street and Rigel Street (LOS F);
- Main Street between Rigel Street and Una Street (LOS F); and
- Main Street between Una Street and I-5 SB Off-ramp (LOS F).

Freeway Segment Analysis

Table 4-3 displays the freeway segments analysis under the Horizon Year (2030) conditions for the Adopted Community Plan. As shown in the table, the Adopted Community Plan would have a cumulative traffic related impact along the following freeway segments:

- I-5 from J Street to SR-75 Junction (LOS F and LOS E for the morning and afternoon peak-hour periods, respectively);
- I-5 from SR-75 Junction to 28th Street (LOS F and LOS E for the morning and afternoon peakhour periods, respectively);
- I-5 from 28th Street to I-15 Interchange (LOS E during the morning peak-hour periods);
- I-5 from I-15 Interchange to Division Street (LOS F both peak-hour periods); and
- I-15 from I-5 Interchange to Ocean View Boulevard (LOS E and LOS F for the morning and afternoon peak-hour periods, respectively)

ROADWAY SEGMENT	ROADWAY CLASSIFICATION (a)	HIGHEST ACCEPTABLE LOS D VOLUME	LOSE CAPACITY	EXIST	EXISTING CONDITIONS DT V/C RATIO DT (b) LOC	SOT	YEAF CON ADT	YEAR 2030 (ADOPTED COMMUNITY PLAN) V/C RATIO DT (b) LC	TED AN) LOS	Δ in V/C	SIGNIFICANT
Cesar Chavez Pkwy north of Locan Aus	3 I and Collector (with TWI T)	18 750	<i>37</i> 500	14 170	0.63.0	ر	16.000	0.711	2	0.081	ON
between Logan Ave and National Ave	4 Lane Collector (with TWLT)	25,000	30,000	15.300	0.510	c c	27.600	0.920	ы	0.410	YES
between National Ave and Newton Ave	3 Lane Collector (with TWLT)	18,750	22,500	12,494	0.555	C	27,300	1.213	F	0.658	YES
between Newton Ave and Main St	3 Lane Collector (with TWLT)	18,750	22,500	11,812	0.525	С	23,300	1.036	F	0.511	YES
between Main St and Harbor Dr	4 Lane Collector (with TWLT)	25,000	30,000	10,381	0.346	в	12,500	0.417	в	0.071	NO
Sampson St hertusen I.5 and National Ave	2 I and Collector (No TWI T)	6 500	8 000	3.086	0.386	<u>م</u>	6 200	0 775	6	0.380	ON
between National Ave and Harbor Dr	2 Lane Collector (No TWLT)	6,500	8,000	2,561	0.320	а <u>а</u>	9,200	1.150	n E	0.830	YES
26th St											
between National Ave and Main St	2 Lane Collector (No TWLT)	6,500	8,000	2,380	0.298	А	8,700	1.088	F	0.790	YES
28th St						ŗ	007 10		ţ		
between I-5 and Boston Ave between Boston Ave and Main St	3 Lane Collector (with 1 WL1) 41 ane Collector (with TWLT)	18,/30 25,000	30.000	22,000	8/9.0 0.629	а C	21,200	0 707	× C	161.0	X ES
between Main St and Harbor Dr	4 Lane Major Arterial	35,000	40,000	16,658	0.416	в	19,600	0.490	в	0.074	ON
29th St											
between Boston Ave and Main St	2 Lane Collector (No TWLT)	6,500	8,000	1,500	0.188	A	5,800	0.725	D	0.538	NO
32nd St between Main St and Wahach Rlvd	2 I ane Collector (with TWI T)	13 000	15 000	13 172	0.878	Γ.	15 000	1 000	[±	0 122	VES
between Wabash Blvd and Harbor Drive	4 Lane Major Arterial	35,000	40,000	19,785	0.495	n m	27,200	0.680	c D	0.185	N
Rigel St										_	
between Main St and I-5 Vesta St	2 Lane Collector (No TWLT)	6,500	8,000	1,723	0.215	Α	1,400	0.175	Υ	-0.040	NO
between Main St and I-5	2 Lane Collector (No TWLT)	6,500	8,000	4,900	0.613	С	6,600	0.825	E	0.212	YES
Logan Ave		000 07	000 21	0.20	100		1 100		4	, L	CIA CIA
between 1/til Stand Sigsbee St hetween Sjoshee St and Cesar Chavez Pkuvy	2 Lane Collector (with TWLT) 2 I ane Collector (with TWLT)	13,000	15 000	есо,с 7 478	0.244	ų ر	11,400	0.700		010.0	VES
between Cesar Chavez Pkwy and 26th St	2 Lane Collector (with TWLT)	13,000	15,000	2,954	0.197	A	6,900	0.460	в	0.263	N
National A ve											
between 16th St and Sigsbee St	2 Lane Collector (with TWLT)	13,000	15,000	2,603	0.174	А	14,400	0.960	E	0.786	YES
between Sigsbee St and Beardsley St	2 Lane Collector (with TWLT)	13,000	15,000	4,500	0.300	A	14,400	0.960	ы	0.660	YES
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	6,500	8,000	3,511	0.439	C	18,000	2.250	ы	1.811	YES
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT)	6,500	8,000	4,643 3 677	086.0	- ح	8,700	1.088	<u>ت</u> ي ز	0.508	XES NO
between Evans 5t and 77th St	2 Latte Collector (With 1 W L1) 2 I ane Collector (No TWI T)	13,000 6 500	8 000	8 445	1 056	ч н	6,/UU 9.300	0.00C.U	⊾ ر	0 107	VES
Boston Ave		0000	0000	6	0.001		2024	00111		10110	
between 28th and 29th St	2 Lane Collector (No TWLT)	6,500	8,000	2,420	0.303	A	17,100	2.138	F	1.835	YES
between 29th St and 32nd St	2 Lane Collector (No TWLT)	6,500	8,000	2,420	0.303	A	9,200	1.150	Ъ	0.847	YES
Main St hattvaan Baardelat St and Casor Charles Druvy	21 and Collector (No TWI T)	6 500	000 8	3 566	0.446	C	5 700	0.713	2	290.0	ON
between Cesar Chavez Pkwv and Evans St	2 Lane Collector (No TWLT)	6 500	8,000	000.c	0.325	ש נ	10.300	617.0	⊐ ⊑	0.963	VES
between Evans St and 26th St	2 Lane Collector (No TWLT)	6,500	8,000	2,598	0.325	c n	17,100	2.138	. E	1.813	YES
between 26th St and 28th St	3 Lane Collector (No TWLT)	9,750	11,250	7,435	0.661	C	14,300	1.271	ы	0.610	YES
between 28th and 29th St	\sim	13,000	15,000	11,266	0.867	н	13,500	0.900	ы	0.033	YES
between 29th St and 32nd St	3 Lane Collector (No TWLT)	9,750	11,250	11,266	1.407	F	19,400	1.724	F	0.317	YES
between 32nd St and Rigel St	4 Lane Collector (No TWLT)	13,000	15,000	21,100	1.407	н	26,300	1.753	ы	0.346	YES
between Rigel St and Una St	2 Lane Collector (with TWLT)	13,000	15,000	15,944	1.063	н	20,100	1.340	ы	0.277	YES
between Una St and I-5 SB Off Ramp	2 Lane Collector (with TWLT)	13,000	15,000	15,177	1.012	F	17,500	1.167	F	0.155	YES
arbor Ur between Beardsley St and Cesar Chavez Pkwy	4 Lane Major Arterial	35,000	40,000	12,094	0.302	A	30,200	0.755	D	0.453	ON
between Cesar Chavez Pkwy and Sampson St	4 Lane Major Arterial	35,000	40,000	13,778	0.344	A	26,300	0.658	С	0.314	NO
between Sampson St and Schley St	4 Lane Major Arterial	35,000	40,000	9,080	0.227	А	25,300	0.633	С	0.406	NO
between Schley St and 28th St	4 Lane Major Arterial	35,000	40,000	8,816	0.220	А	20,700	0.518	в	0.298	NO
between 28th St and 32nd St	4 Lane Major Arterial	35,000	40,000	18,900	0.473	в	28,500	0.713	C	0.240	NO
atmeen 32nd St and Vacta St	A I and Major Artarial		10.000		0.100	٩		0000	4	007 0	

				HORL	ON YEAR (203 FF	TABLE 4-3 030) CONDITIONS WITH ADOFTED CI FREEWAY SEGMENT LOS SUMMARY	TABLE 4-3 IONS WITH AD GMENT LOS SI	TABLE 4-3 HORIZON YEAR (2030) CONDITIONS WITH ADOFTED COMMUNITY PLAN FREEWAY SEGMENT LOS SUMMARY	NITY PLAN						
				EXISTING	ING				ADOP	ADOPTED COMMUNITY PLAN	NITY PLAN				
FREEWAY SEGMENT	DIRECTION	NUMBER OF LANES	CAPACITY (a)	ADT (b)	PEAK- HOUR VOLUME (c)	V/C RATIO	ros	NUMBER OF LANES	CAPACITY (a)	ADT (b)	PEAK- HOUR VOLUME (c)	V/C RATIO	ros	V/C RATIO A	SIGNIFICANT?
I-5															
J Street to SR-75 Junction	NB	4 M	9,400	164,000	7,793	0.829	D	4 M + 1 H	11,000	244,500	11,618	1.056	E0	0.23	YES
	SB	4 M	9,400		C02 E	0000	4	4 M + 1 H	11,000		11 204	1 045	£	100	
SR-75 Junction to 28th Street	SB	4 M 4 M	9,400	160,000	,005	608.0	ŋ	4 M + 1 H 4 M + 1 H	11,000	242,100	11,004	1.040	PI	0.24	YES
	ac an	4 M	9,400			0000	c		11,000		10 501	0.007	β	0.10	
28th Street to I-15 Interchange	SB	4 M 4 M	9,400 9,400	154,000	/10,/	0.778	د	4 M + 1 H 4 M + 1 H	11,000	222,900	166,01	c0%.0	2	0.18	155
	NB	4 M	9,400	100,000	8,933	0.950	Е	4 M + 1 H	11,000	001.000	12,454	1.132	F0	0.18	YES
1-1-1 Therchange to DIVISION St	SB	4 M	9,400	188,000				4 M + 1 H	11,000	707,100					-
I-15															:
L-5 Interchance to Ocean View Blud	NB	3 M	7,050	05 000				3 M	7,050	130 800					
	SB	3 M	7,050	000107	4,722	0.670	С	3 M	7,050	000'001	6,501	0.922	Е	0.25	YES
SR-75 (d)															:
I-5 Interchange to Glorietta Blvd	WB	2 M	4,700	73.000				2 M	4,700	89,800					1
5	EB	3 M	7,050		4,629	0.657	U	3 M	7,050		5,694	0.808	D	0.15	:
						Р	PM PEAK								
I-5															
J Street to SR-75 Junction	NB	4 M	9,400	164,000				4 M + 1 H	11,000	244,500					
	SB	4 M	9,400		7,036	0.749	J	4 M + 1 H	11,000		10,490	0.954	ы	0.21	YES
SR-75 Junction to 28th Street	NB	4 M	9,400	160,000				4 M + 1 H	11,000	242,100					-
	SB	4 M	9,400		6,865	0.730	c	4 M + 1 H	11,000		10,387	0.944	ы	0.21	YES
28th Street to I-15 Interchange	NB	4 M	9,400	154,000				4 M + 1 H	11,000	222,900					1
	SB	4 M	9,400		6,607	0.703	υ	4 M + 1 H	11,000		9,563	0.869	D	0.17	
I-15 Interchange to Division St	SB SB	4 M 4 M	9,400 9.400	188,000	8.066	0.858	٩	4 M + 1 H 4 M + 1 H	11,000	262,100	11.245	1.022	F0	0.16	- YES
I-15															1
L-5 Interchange to Ocean View Rlvd	NB	3 M	7,050	95 000	5,216	0.740	С	3 M	7,050	130 800	7,182	1.019	$\mathbf{F0}$	0.28	YES
	SB	3 M	7,050	000,00				3 M	7,050	000,001					1
SR-75 (d)															-
I-5 Interchange to Glorietta Blvd	WB	3 M	7,050	73,000	4,585	0.650	υ	3 M	7,050	89,800	5,640	0.800	D	0.15	•
	EB	2 M	4,700					2 M	4,700						:
Notes: BAAI volues indicens fractions connection of LOCE of F	TOCHOLE														
M=Main Lane; A= Auxiliary Lane; H= HOV Lane.															
This analysis evaluates the higher peak-hour direction of traffic	ion of traffic														
(a) The capacity is calculated as 2,350 ADT per main lane and 1,200 ADT per auxiliary lane	ain lane and 1,200) ADT per auxiliary l	ane												
(b) Traffic volumes provided by Caltrans															
(c) Peak-hour volume calculated by: (ADT*K*D)/Truck Factor	Truck Factor														
(d) SR-75 has reversable lanes.															
K:\SND_TPTO\095707000\Excel\[707000FR01.xls]ACP	vls]ACP														

5.0 HORIZON YEAR (2030) WITH ALTERNATIVE 1

This section summarizes the results of the Horizon Year (2030) conditions analysis within the Barrio Logan community taking into account the land use changes proposed under the Alternative 1 of the Community Plan Update.

Roadway Network

No roadway network changes are assumed to take place under this scenario, with the exception of the addition of a High Occupancy Vehicle (HOV) lane along the I-5 Corridor for both directions of traffic. The additional HOV lane is listed in Sandag's 2030 Regional Transportation Plan (RTP).

Traffic Volumes

The Horizon Year Average Daily Traffic (ADT) volumes on the roadway segments in the study area were derived from a City of San Diego traffic forecast model that incorporated the land use changes proposed under the Alternative 1 scenario. A copy of the forecast model is included in **Appendix G**.

Table 5-1 presents a more detailed trip generation summary for the community with the land uses included in the Alternative 1 of the Community Plan Update. As shown in the table, the land use designation of Alternative 1 would generate a total of approximately 137,267 average daily trips, including 8,540 (5,216 in and 3,324 out) morning peak-hour trips and 13,692 (76,213 in and 7,479 out) afternoon peak-hour trips.

Modeled forecast volumes experienced some minor refinements. In the process of calibrating the existing model, it was concluded that three post model adjustments should be made to the 2030 traffic models. Traffic volumes along Cesar Chavez Parkway between Newton Avenue and Main Street were reduced by 4,300 ADT to account for Newton Avenue not being in the model. Traffic volumes on 28th Street and 32nd between Main Street and Harbor Drive were increased by 4,000 ADT and 600 ADT, respectively, per calibration between base year model and actual traffic volume counts. Minor smoothing of traffic volumes were made to reflect the gross nature of model loadings from TAZs. Volumes for streets that were not in the traffic model were estimated applying a growth rate generally consistent with other facilities in the community. Resulting daily traffic volumes for the Adopted Community Plan are depicted in **Figure 5-1**.

To estimate the turning movement volumes at the study intersections, the existing turning movements at each respective study intersection were factored up based on the projected Average Daily Traffic (ADT) volumes along each segment shown in the model plot. Each respective movement was derived using an iterative approach that balances the inflows and outflows for each approach. The input values include the existing turning movement volumes and future year peak-hour approach and departure volumes along each leg of the intersection. The future peak-hour approach volumes would be estimated by applying the existing peak-hour factor (K-factor) and directional distributional percentage (D-factor) to the future ADT volumes along each approach. A more detailed description of the methodology used to forecast turning movement volumes is contained in National Cooperative Highway Research Program (NCHRP) 255 Highway Traffic Data for Urbanized Area Project Planning and Design, Chapter 8. An Excel model computes the forecast turning volumes from existing turning movement volumes and forecasted approach and departure volumes by the techniques described in NCHRP 255. A copy of the NCHRP 255 Report and excel calculation worksheets are included in **Appendix H**. **Figure 5-2** displays the Horizon Year peak-hour turning movements used in the analysis of Alternative 1.

	Unit	1		Al	M Peak-H	Iour	I	PM Peak-I	Hour
Land Use	Cint	3	Daily Trips	In	Out	Total	In	Out	Total
ACTIVE PARK	9.10	acre	398	0	16	16	0	32	32
ELEMENTARY SCHOOL (stu)	529.00	stu	1,539	286	191	477	117	175	292
FAST FOOD REST. (ksf)	19.50	ksf	13,675	328	219	547	547	548	1,095
FIRE OR POLICE STATION	1.00	site	229	31	3	34	3	31	34
HEAVY INDUSTRY (ksf)	3,130.40	ksf	12,682	1,256	139	1,395	304	1,218	1,522
JUNIOR COLLEGE (ksf)	70.00	ksf	1,295	0	0	0	0	0	0
LIGHT INDUSTRY (ksf)	79.50	ksf	1,272	126	14	140	31	122	153
LOW RISE OFFICE(FT3917)(ksf)	258.50	ksf	3,467	406	45	451	97	388	485
LOW RISE OFFICE(FT3921)(ksf)	162.90	ksf	2,435	285	32	317	68	273	341
LOW RISE OFFICE(FT3957)(ksf)	81.90	ksf	1,450	170	19	189	41	162	203
LOW RISE OFFICE(FT3988)(ksf)	121.30	ksf	1,943	227	26	253	54	218	272
LOW RISE OFFICE(FT3985)(ksf)	15.70	ksf	414	48	6	54	12	46	58
LUMBER STORE (mtro)(ksf)	0.00	ksf	0	0	0	0	0	0	0
MARINA (CCDC)	0.00	acre	0	0	0	0	0	0	0
MARINE TERMINAL	0.00	acre	0	0	0	0	0	0	0
MILITARY USE (Gate 9 - site)	0.00	site	0	0	0	0	0	0	0
MULTI-FAMILY(BL)(over 20DU)	4,203	du	25,377	407	1,622	2,029	1,599	686	2,285
NEIGHBORHOOD SHOP CNT (ksf)	175.10	ksf	20,813	500	333	833	1,146	1,143	2,289
OTHER HEALTH CARE (ksf)	112.70	ksf	5,610	269	67	336	168	393	561
OTHER PUBLIC SERVICE	0.20	acre	58	5	0	5	2	5	7
OTHER TRANSPORTATION	5.10	acre	433	42	19	61	19	46	65
PARKING	0.50	cre	0	0	0	0	0	0	0
RAIL STATION (BL)	0.60	acre	181	0	0	0	0	0	0
REGIONAL COMM.(Mtro)(ksf)	0.00	ksf	0	0	0	0	0	0	0
SINGLE FAMILY (BL)	69	du	607	9	38	47	43	19	62
SPECIALTY COMM.(mtro)(ksf)	0.00	ksf	0	0	0	0	0	0	0
STREETFRONT COMMERCIAL (ksf)	1,071.30	ksf	42,930	773	514	1,287	1,933	1,930	3,863
WAREHOUSING (ksf)	90.60	ksf	459	48	21	69	29	44	73
WHOLESALE TRADE	0.00	acre	0	0	0	0	0	0	0
Total			137,267	5,216	3,324	8,540	6,213	7,479	13,692

TABLE 5-1 TRIP GENERATION SUMMARY (ALTERNATIVE 1 - TOTAL)

 I.
 du = Dwelling Unit; stu = Students; ksf = Thousar

 K:\SND_TPTO\095707000\Excel\[707000TG.xlsm]Alt 1 Totals (LU)


Barrio Logan Co	mmunity Plan	Update				
5 136 / 77 ⇔ 250 / 490 ⊗ 47 / 40 41 / 40	 № 114 / 122 ⇔ 295 / 488 ☆ 24 / 0 Commercial St 	 B 1 / 70 B 36 / 25 B 56 / 127 16th St 	∾ 34 / 25 ⇔ 495 / 458 ⊉ 3 / 3 National Ave	3 6 6 6 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9	 79 / 38 8 79 / 38 23 / 16 Sigsbee St 	∾ 51 / 23 ⇔ 80 / 50 ∞ 15 / 9 Newton Ave
16 / 64	13 /21 ∞ 340 /670 ⇔ 16 /26 ≌	40/91 ≈ 194/347 ⇔ 40/31 ∿	40 /61 234 /41 40 12 /7 22	10 / 34	6 / 9	24 /20 a 111 /91 e 34 /12 a
5 3/2 ⇔ 96/60 ∞ 31/20 Sigsbee St	∾ 61/31 ⇔ 8/0 ∞ 31/38 Main St	 710/80 110/80 110/100 Sigsbee St 	is 20 / 100 ⇔ 1670 / 780 Harbor Dr	7 8 8 2 2 2 2 2 2 2 2 2 2 2 2 2	8 23 / 11 ⇔ 138 / 83 ∞ 216 / 189 Beardsley St	 № 67 / 77 ⇔ 421 / 347 241 / 113 National Ave
3 / 4	5 / 0 23 97 / 98 45 24 / 12 23	60 / 160		170 / 515 ⇔ 56 24 / 69 ⇔ 217 / 69 88 / 155 89 / 155 89	8 / 19	4 / 9 2 30 / 43 5 50 / 134 2
6 41 /12 ⇔ 156 /94 ∞ 56 /46 Beardstay St	© 15 / 19 ⇔ 82 / 93 ⊉ 29 / 13 Newton Ave	2 /17 ⇒ 52 /17 ⇒ 57 /39 ∞ 275 /144 Beardstay St	∿ 76 / 79 ⇔ 109 / 33 ⊉ 163 / 78 Main St	11 55 SE 74 SE	 31 / 40 350 / 330 Cesar Chavez Pkwy 	ನ. 192 / 154 ⇔ 259 / 157 ಜ 613 / 517 Kearney Ave
18 / 7	13 /5 ≈ 23 /71 ⇔ 19 /37 ≌	15/22 <i>a</i> 74/64 ⇔ 4/4 ∾	2 /0 ∞ 8 /25 ⇔ 52 /109 ∞	22 / 95		257 / 382 ≈ 262 / 345 ⇔





FIGURE 5-2



Barrio Logan Co	mmunity Plan	Update				
2 /52 /52 ⇔ 909 /694 ⊗ 70 /114 c.esar c.navez Pkwy.SR.75 0n- rank	 № 76 / 90 ⇔ 325 / 280 ∞ 100 / 120 Logan Ave 	 № 310 / 410 ⇔ 745 / 550 ⇔ 745 / 120 ∞ 70 / 120 © Cesar Converse Prive 	 № 120 / 275 ⇔ 350 / 270 ☆ 120 / 110 National Ave 	15 so constraints 15 so constraints 16 so constraints 17 so constraints 18 so constraints 19 so constraints 10 800 11 so constraints 11 so constraints 12 so constraints 13 so constraints 14 so constraints 15 so constraints 16 so constraints 17 so constraints 18 so constraints 19 so constraints 10 so constraints <	5 180 / 260 ⇔ 580 / 540 ∞ 150 / 250 © Cesar Chavez Pkwy	 № 190 / 270 ⇔ 330 / 230 ∞ 70 / 70 Main St
140 / 130	100 /140	190 / 300 ⊘ 250 / 400 ⇔ 180 / 290 ∿	90 /120 ≈ 580 /1000 ⇔ 50 /100 ≈	75 / 135 Ø 04 / 014 40 / 130 ↔ 60 / 70 3 06 / 014 90 / 00 09 / 00 90 09 / 00 90 00 00 90 00 00 90 00 90 90 90 00 90 900 90	150 / 120	70 /70 2 340 /640 5 90 /180 2
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	 № 95 / 43 ⇔ 1047 / 465 2 80 / 50 Harbor Dr 	18 dwe¥+0 88 <u>9</u> -1	∾ 84 / 73 ⇔ 127 / 158 Logan Ave	19 88 97 19 88 10 10 10 10 10 10 10 10 10 10	6 30 / 72 4 18 / 22 9 / 45 Evans St	 Image: space state sta
118 / 468	10 / 50 2 14 / 63 5 27 / 35 2	497/933	0 /11 2 2 /2 4 2 /3 2	128 / 308 ⇒	17 / 37	28 / 13 24 / 62 24 / 62 24 / 62 25
5 37 / 21 c 30 / 28 c 7 / 30 Evans st	rs 30 / 27 ⇔ 63 / 70 ⊉ 16 / 27 Newton Ave	 45 / 16 56 / 75 56 / 75 Fevans St 	∾ 65 / 62 ⇔ 350 / 239 Main St	23 89 99 75 10 75 80 10	54 118 / 107 ⇔ 109 / 86 ⊕ 109 / 86 Sampson St Sampson St	 № 100 / 100 ⇔ 104 / 70 ∞ 48 / 21 National Ave
23 / 24	27/7 ≈ 58/47 ⇔ 31/28 ≌	33 / 12		110 / 108 Ø № û 224 / 255 ⇔ 224 / 255 163 / 203 № 100 / 100 66 61	75 / 162	7 / 13 2 95 / 185 4 16 / 30 2



The northbounf right-turn volumes for Logan Avenue/SR-75 and Cesar Chavez Parkway intersection include the vehicles turning north from Cesar Chavez Parkway using the free northbound right-turn lane. The intersection analysis did not include a reduction for these volumes.





FIGURE 5-2.1



Horizon Year (2030) Peak-Hour Volumes (Alternative 1) (cont.)

Barrio Logan Co	mmunity Plan	Update				
22 37 /19 ☆ 99 /66 ☆ 18 /19 Sampson St	∾ 35 / 31 ⇔ 81 / 76 ☆ 15 / 0 Newton Ave	20 ⇒ 172 /85 ⇒ 59 /27 ⇒ 10 /8 Sampson St	∾ 16/8 ⇔ 218/83 ∞ 53/27 Main St	27 90/25/26/26/27/27/27/27/27/27/27/27/27/27/27/27/27/	8 36 / 42 4 41 / 18 ∞ 4 / 4 ∞ 4 / 4 Scand st Scand st	∾ 3 / 1 ⇔ 163 / 125 ∞ 27 / 8 National Ave
21 / 34	7 /13	70 / 118	50 /60 ≈ 31 /46 ⇔ 35 /49 ∿	10 / 56	21 / 40	48 / 33 2 48 / 46 5 12 / 17 2
29 33 / 68 51 / 90 26th St 26th St	 № 48 / 55 ⇔ 223 / 124 2 36 / 35 National Ave 	30	⇔ 269 / 234 ஜ 42 / 31 National Ave	31 ∞ (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2 (2	0 164 / 75 0 164 / 75 0 25 / 10 0 25 / 20 0 25 / 2	∾ 17 / 39 ⇔ 1422 / 538 Harbor Dr
28 / 33	27 /46 ∞ 47 /60 ⊕ 15 /34 ∞	146/368 ⇔ 18/23 ∿ 88 9	72 / 94 &	10 / 14	124 / 203	
23 307 /102 505 /210 ∞ 205 /210 ∞ 115 /199 28th St	 № 123 / 240 ⇔ 628 / 427 ☆ 192 / 463 National Ave 	34 860 / 980 ← 860 / 980 ← 160 / 330 28th St	 ⊾ 120 / 70 ⇔ 70 / 70 ₂ 45 / 60 Boston Ave 	35 9 9 9 9 9 9 9 9 9 9 180 / 280 ↓ 180 / 280 ↓ 9 9 150 ↓ 9 9 150 ↓ 15 ↓ 150 ↓ 15 ↓ 150 ↓ 15 150 ↓ 150 ↓ 150 ↓ 150 ↓ 150 ↓	8 25 /13 ⇔ 15 /12 ∞ 375 /505 28th St	 ₅ 116 / 278 ⇔ 822 / 474 ⊉ 17 / 14 Harbor Dr
106 / 94	33 / 18 % 98 / 98 ⊕ 86 / 168 %	230 / 320	90 / 50	190 / 270 Ø S û Ø 300 / 600 ⇔ 50 / 40 S 25 / 28 40 S 25 / 20 S 25	110/290 ⊘ 560/1120 ⇔ 4/2 ∿	0/10 2 6/134 5 2/0 2









Barrio Logan Co	ommunity Plan	Update		
37 37 48 8	 5 88 / 118 ⇔ 102 / 83 ∞ 18 / 20 Boston Ave 	38 £ 19 / 50 50 79 / 102 27 8 8 9 2314 / 207 28 8 5 314 / 207 Main St 5	39 67/ 59/ 50/ 205 67/ 50/ 205 70/ 50/ 205	2 300 / 40
234 / 559	5 /9 & 30 /72 & 19 /45 &	38 / 70 ∞ 0 √ 130 / 653 ⇔ 213 / 153 218 / 166 ⊕ 27 / 152 130 / 200 / 123 € 100 / 123	65/115 み 10/10 (10 km) (10 k	140 / 340 Ø S û Ø 657 / 1185 ↔ 140 / 100 S 22 / 000 00 000 00 00 000 00 000 00 000 00 000 00 00
م 309 / 153 د 108 / 153 د 108 / 120 -15 Ramps	s 107 / 154 ⇔ 497 / 361 Main St			
47 / 303				





Intersection Analysis

Table 5-2 displays the LOS analysis results for the study intersections under Horizon Year with the Barrio Logan Community Plan Update conditions for Alternative 1 scenario. As shown in the table, all intersections would operate at LOS D or better during both peak-hour periods, with the exception of the following fourteen intersections:

- National Avenue and 16th Street (LOS F during both peak-hour periods);
- Harbor Drive and Sigsbee Street (LOS F during both peak-hour periods);
- Logan Avenue and Beardsley Street/I-5 SB off-ramp (LOS F during the afternoon peak-hour period);
- National Avenue and Beardsley Street (LOS E and LOS F in the morning and afternoon peakhour periods, respectively);
- Harbor Drive and Beardsley Street (LOS F during both peak-hour periods);
- Logan Avenue and Cesar Chavez Parkway (LOS E in the afternoon peak-hour period);
- Harbor Drive and Cesar Chavez Parkway (LOS E and LOS F in the morning and afternoon peakhour periods, respectively);
- Logan Avenue and Sampson Street (LOS F during both peak-hour periods);
- Harbor Drive and Schley Street (LOS E in the morning peak-hour period);
- National Avenue and 28th Street (LOS F and LOS E in the morning and afternoon peak-hour periods, respectively);
- Harbor Drive and 28th Street (LOS F in the afternoon peak-hour period);
- Boston Avenue and I-5 Southbound On-ramp (LOS F in the afternoon peak-hour period);
- 32nd Street and Wabash Street (LOS F during both peak-hour periods); and
- Harbor Drive and 32nd Street (LOS F during both peak-hour periods).

The Barrio Logan Community Plan Update Alternative 1 is considered to have a cumulative traffic related impact at all fourteen intersections listed above.

Appendix D contains the LOS calculation worksheets.

TABLE 5-2 HORIZON YEAR (2030) CONDITIONS ALTERNATIVE 1 PEAK-HOUR INTERSECTION LOS SUMMARY										
				EXIS	FING	AL	TERNAT	TVE 1		
	INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	DELAY (a)	LOS (b)	DELAY	Y (a)	LOS (b)	Δ (c)	SIGNIFICANT?
			AM	19.4	В	12.8	. /	В	-6.6	NO
1	Commercial St & 16th St	Signal	PM	24.6	С	27.7		С	3.1	NO
2	National Ave & 16th St	T W G	AM	11.7	В	51.7	(NB)	F	40.0	YES
2	National Ave & 16th St	Two-Way Stop	PM	12.5	В	232.1	(SB)	F	219.6	YES
3	National Ave & Sigsbee St	Signal	AM	9.6	А	8.1		А	-1.5	NO
3	National Ave & Sigsbee St	Signar	PM	9.6	А	7.3		А	-2.3	NO
4	Newton Ave & Sigsbee St	All-Way Stop	AM	7.9	А	8.8		А	0.9	NO
-	Newton Five & Sigsbee St	All Way Stop	PM	7.6	А	8.0		А	0.4	NO
5	Main St & Sigsbee St	All-Way Stop	AM	7.4	А	8.1		Α	0.7	NO
5	initial bit de bigsoete bit	Thin thuy brop	PM	7.4	А	7.8		А	0.4	NO
6	Harbor Dr & Sigsbee St	One-Way Stop	AM	17.0	С	ECL	(SB)	F		YES
0		one may stop	PM	18.1	С	ECL	(SB)	F		YES
7	Logan Ave & Beardsley St- I-5 SB ramp	All-Way Stop	AM	11.1	В	33.1		D	22.0	NO
,	Logan Tive & Deardsley St. 19 SD ramp	Am Way Stop	PM	11.9	В	81.9	(EB)	F	70.0	YES
8	National Ave & Beardsley St	All-Way Stop	AM	8.5	А	39.9		Е	31.4	YES
0	Futional Five & Deardisley St	Am Way Stop	PM	8.7	А	129.0	(EBL)	F	120.3	YES
9	Newton Ave & Beardsley St	All-Way Stop	AM	8.5	А	9.4		А	0.9	NO
<i></i>	Newton Pive & Deardsley St	Am Way Stop	PM	8.2	А	8.6		А	0.4	NO
10	Main St & Beardsley St	All-Way Stop	AM	8.5	А	15.5		С	7.0	NO
10	Main St & Deardsley St	All-Way Stop	PM	7.8	А	9.5		Α	1.7	NO
11	Harbor Dr & Beardsley St	One-Way Stop	AM	20.3	С	173.7	(SB)	F	153.4	YES
	Tharbor Dr & Deurdsky St	one way stop	PM	18.3	С	51.6	(SB)	F	33.3	YES
12	Kearney St & Cesar E. Chavez Pkwy	Signal	AM	21.7	С	46.6		D	24.9	NO
12	Reality St & Cesar E. Chavez I kwy	Bighti	PM	21.2	С	34.0		С	12.8	NO
13	Logan Ave & Cesar E. Chavez Pkwy	Signal	AM	14.0	В	31.1		С	17.1	NO
15	Logun Ave & Cesu E. Chavez F Kwy	Signal	PM	13.0	В	62.1		Е	49.1	YES
14	National Ave & Cesar E. Chavez Pkwy	Signal	AM	11.0	В	30.4		С	19.4	NO
14	National Ave & Cesai E. Chavez I Kwy	Signal	PM	14.0	В	52.4		D	38.4	NO
15	Newton Ave & Cesar E. Chavez Pkwy	Signal	AM	8.1	А	9.1		А	1.0	NO
15	Newton Ave & Cesar E. Chavez I Kwy	Signal	PM	9.1	А	15.3		В	6.2	NO
16	Main St & Cesar E. Chavez Pkwy	Signal	AM	9.6	А	39.3		D	29.7	NO
10	Main St & Cesar E. Chavez I kwy	Signai	PM	8.7	А	42.5		D	33.8	NO
17	Harbor Dr & Cesar E. Chavez Pkwy	Signal	AM	33.2	С	77.5		Е	44.3	YES
17	indesi Di de Cesul El Chavez i kwy	Signar	PM	43.6	D	85.2		F	41.6	YES
18	Logan Ave & I-5 SB On-ramp	One-Way Stop	AM	8.8	А	9.5		А	0.7	NO
10	Logan Trie & F 5 55 on runp	one may stop	PM	9.9	А	16.3		С	6.4	NO
19	National Ave & SR-75 Off-ramp	One-Way Stop	AM	10.1	В	13.2		В	3.1	NO
.,		one may stop	PM	11.0	В	13.8		В	2.8	NO
20	National Ave & Evans St	Two-Way Stop	AM	11.2	В	14.6		В	3.4	NO
20	i aconti rive ce Evuio Bt	1 o ay 510p	PM	11.9	В	21.0		С	9.1	NO

ī

Notes: Bold values indicate intersections operating at LOS E or F. SB= Southbound; NB= Northbound; EB=Eastbound; WB=Westbound (a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement. (b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0 K:(SND_TPTO\095707000\Excel\[707000IN01.xlsm]Alt1

RSECTION Evans St ns St sampson St Sampson St spson St ampson St Sicard St 26th St 1-5 SB Off-ramp	TRAFFIC CONTROL Two-Way Stop One-Way Stop All-Way Stop Signal All-Way Stop All-Way Stop Signal Two-Way Stop All-Way Stop All-Way Stop All-Way Stop All-Way Stop Signal All-Way Stop All-Way Stop All-Way Stop All-Way Stop	PEAK HOUR AM PM AM PM AM PM AM PM AM PM AM PM AM PM AM PM AM PM AM PM AM	DELAY (a) 9.8 9.8 9.3 9.6 10.0 10.7 10.3 9.4 7.5 7.6 8.6 8.2 23.1 27.1 12.0 11.4	LOS (b) A A A A B B B B B A A A A A A C C C	DELAY (a) 11.8 12.4 14.4 14.3 143.5 197.1 197.1 8.1 9.1 8.7 8.8 11.5 10.4 29.2 41.7	LOS (b) B B B F F A A A A A B B C	▲ 2.0 2.6 5.1 4.7 133.5 186.4 -2.2 -0.3 1.2 1.2 1.2 2.9 2.2 6.1	SIGNIFICAN NO NO NO VES YES NO NO NO NO NO NO NO
ns St sampson St sampson St sampson St ampson St sicard St 26th St	One-Way Stop All-Way Stop Signal All-Way Stop All-Way Stop Signal Two-Way Stop All-Way Stop All-Way Stop Signal Two-Way Stop All-Way Stop All-Way Stop	PM AM PM AM PM AM PM AM PM AM PM AM PM AM PM AM PM AM PM	9.8 9.3 9.6 10.0 10.7 10.3 9.4 7.5 7.6 8.6 8.2 23.1 27.1 12.0	A A B B A A A A A C C C	12.4 14.4 14.3 143.5 (WBT) 197.1 (NB) 8.1 9.1 8.7 8.8 11.5 10.4 29.2 2	B B F A A A A A B B B	2.6 5.1 4.7 133.5 186.4 -2.2 -0.3 1.2 1.2 1.2 2.9 2.2	NO NO YES YES NO NO NO NO NO
ampson St sampson St sampson St ampson St sicard St 26th St	All-Way Stop Signal All-Way Stop All-Way Stop Signal Two-Way Stop All-Way Stop All-Way Stop	AM PM AM PM AM PM AM PM AM PM AM PM AM PM AM PM	9.3 9.6 10.0 10.7 10.3 9.4 7.5 7.6 8.6 8.2 23.1 27.1 12.0 12.0	A B B A A A A A C C C	14.4 14.3 143.5 (WBT) 197.1 (NB) 8.1 9.1 8.7 8.8 11.5 10.4 29.2 2	B F F A A A A B B B	5.1 4.7 133.5 186.4 -2.2 -0.3 1.2 1.2 1.2 2.9 2.2	NO NO YES NO NO NO NO NO
ampson St sampson St sampson St ampson St sicard St 26th St	All-Way Stop Signal All-Way Stop All-Way Stop Signal Two-Way Stop All-Way Stop All-Way Stop	PM AM PM AM PM AM PM AM PM AM PM AM PM AM PM	9.6 10.0 10.7 10.3 9.4 7.5 7.6 8.6 8.2 23.1 27.1 12.0	A B B A A A A A C C C	14.3 143.5 (WBT) 197.1 (NB) 8.1 9.1 8.7 8.8 11.5 10.4 29.2 2	B F A A A A B B B	4.7 133.5 186.4 -2.2 -0.3 1.2 1.2 1.2 2.9 2.2	NO YES NO NO NO NO NO
x Sampson St Sampson St ppson St ampson St Sicard St 26th St	Signal All-Way Stop All-Way Stop Signal Two-Way Stop All-Way Stop	AM PM AM PM AM PM AM PM AM PM AM PM AM PM	10.0 10.7 10.3 9.4 7.5 7.6 8.6 8.2 23.1 27.1 12.0	B B A A A A A C C C	143.5 (WBT) 197.1 (NB) 8.1 9.1 8.7 8.8 11.5 10.4 29.2 2	F F A A A B B B	133.5 186.4 -2.2 -0.3 1.2 1.2 2.9 2.2	YES YES NO NO NO NO NO
x Sampson St Sampson St ppson St ampson St Sicard St 26th St	Signal All-Way Stop All-Way Stop Signal Two-Way Stop All-Way Stop	PM AM PM AM PM AM PM AM PM AM PM AM PM	10.7 10.3 9.4 7.5 7.6 8.6 8.2 23.1 27.1 12.0	B B A A A A C C C	197.1 (NB) 8.1 9.1 8.7 8.8 11.5 10.4 29.2 2	F A A A B B B	186.4 -2.2 -0.3 1.2 1.2 2.9 2.2	YES NO NO NO NO
Sampson St pson St ampson St Sicard St 26th St	All-Way Stop All-Way Stop Signal Two-Way Stop All-Way Stop	AM PM AM PM AM PM AM PM AM PM PM	10.3 9.4 7.5 7.6 8.6 8.2 23.1 27.1 12.0	B A A A A C C C	8.1 9.1 8.7 8.8 11.5 10.4 29.2	A A A B B B	-2.2 -0.3 1.2 1.2 2.9 2.2	NO NO NO NO
Sampson St pson St ampson St Sicard St 26th St	All-Way Stop All-Way Stop Signal Two-Way Stop All-Way Stop	PM AM PM AM PM AM PM AM PM PM	9.4 7.5 7.6 8.6 8.2 23.1 27.1 12.0	A A A A C C C	9.1 8.7 8.8 11.5 10.4 29.2	A A A B B	-0.3 1.2 1.2 2.9 2.2	NO NO NO
pson St ampson St Sicard St 26th St	All-Way Stop Signal Two-Way Stop All-Way Stop	AM PM AM PM AM PM AM PM	7.5 7.6 8.6 8.2 23.1 27.1 12.0	A A A C C	8.7 8.8 11.5 10.4 29.2	A A B B	1.2 1.2 2.9 2.2	NO NO NO
pson St ampson St Sicard St 26th St	All-Way Stop Signal Two-Way Stop All-Way Stop	PM AM PM AM PM AM PM	7.6 8.6 8.2 23.1 27.1 12.0	A A A C C	8.8 11.5 10.4 29.2	A B B	1.2 2.9 2.2	NO NO
ampson St Sicard St 26th St	Signal Two-Way Stop All-Way Stop	PM AM PM AM PM	8.2 23.1 27.1 12.0	A C C	10.4 29.2	B B	2.2	
ampson St Sicard St 26th St	Signal Two-Way Stop All-Way Stop	AM PM AM PM	23.1 27.1 12.0	C C	29.2			NO
Sicard St 26th St	Two-Way Stop All-Way Stop	PM AM PM	27.1 12.0	С		С	6.1	
Sicard St 26th St	Two-Way Stop All-Way Stop	AM PM	12.0		41.7		0.1	NO
26th St	All-Way Stop	PM			41.7	D	14.6	NO
26th St	All-Way Stop		11.4	В	14.3	В	2.3	NO
		AM	11.4	В	14.0	В	2.6	NO
I-5 SB Off-ramp			8.7	А	9.5	А	0.8	NO
I-5 SB Off-ramp		PM	8.8	А	10.4	В	1.6	NO
	One-Way Stop	AM	11.5	В	12.7	В	1.2	NO
		PM	17.8	C	20.9	С	3.1	NO
St-Schley St	All-Way Stop	AM	7.7	A	8.2	A	0.5	NO
		PM	8.0	AB	8.0	A	0.0	NO
hley St	Signal	AM	19.6		76.2	E	56.6	YES NO
								YES
28th St	Signal							YES
	<i>a</i> . <i>i</i>							NO
28th St (c)	Signal	PM				D		NO
<u> </u>	C: 1	AM	23.4	С	31.6	С	8.2	NO
St (c)	Signal	PM	29.2	С	40.8	D	11.6	NO
th St	Signal	AM	34.3	С	43.3	D	9.0	NO
ui st	Signal	PM	45.6	D	92.2	F	46.6	YES
-5 SB On-ramp-29th St	One-Way Stop	AM	17.3	С	21.0	С	3.7	NO
o ob on ranp 25arbt	one way brop	PM	260.7	F	523.6 NB	F	262.9	YES
l St	Signal	AM	21.9	С	22.7	С	0.8	NO
	Ű	PM	29.2		33.2	С	4.0	NO
ash St	Signal	AM						YES
	-							YES
nd St	Signal							YES
								YES
Ramps	Signal							NO NO
	8th St (c) St (c) h St 5 SB On-ramp-29th St St sh St ad St Ramps ections operating at LOS E or 1	8th St (c) St (c) St (c) St Signal th St Signal 5 SB On-ramp-29th St One-Way Stop St Signal sh St Signal ush St Signal add St Signal Ramps Signal extions operating at LOS E or F. Frithound; EB=Eastbound; WB=Westbound	$\begin{array}{ c c c c } & & & & & & & & & & & & & & & & & & &$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

Roadway Segment Analysis

Table 5-3 displays the roadway segment analysis under the Horizon Year (2030) conditions for the Alternative 1 scenario. As shown in the table, based on planning level analysis and on ADT volumes, the Alternative 1 scenario would be considered having a cumulative roadway segment impact along the following roadway segments:

- Cesar Chavez Parkway between Logan Avenue and National Avenue (LOS E);
- Cesar Chavez Parkway between National Avenue and Newton Avenue (LOS F);
- Cesar Chavez Parkway between Newton Avenue and Main Street (LOS E);
- Sampson Street between National Avenue and Harbor Drive (LOS E);
- 26th Street between National Avenue and Main Street (LOS E);
- 28th Street between I-5 and Boston Avenue (LOS F);
- 32nd Street between Main Street and Wabash Boulevard (LOS E);
- Vesta Street between Main Street and I-5 Ramps (LOS E);
- Logan Avenue between Sigsbee Street and Cesar Chavez Parkway (LOS F);
- National Avenue between Beardsley Street and Cesar Chavez Parkway (LOS F);
- National Avenue between Cesar Chavez Parkway and Evans Street (LOS F);
- National Avenue between Sicard Street and 27th Street (LOS F);
- Boston Avenue between 28th Street and 29th Street (LOS F);
- Boston Avenue between 29th Street and 32nd Street (LOS F);
- Main Street between Cesar Chavez Parkway and Evans Street (LOS E);
- Main Street between Evans Street and 26th Street (LOS E);
- Main Street between 26th Street and 28th Street (LOS F);
- Main Street between 28th Street and 29th Street (LOS F);
- Main Street between 29th Street and 32nd Street (LOS F);
- Main Street between 32nd Street and Rigel Street (LOS F);
- Main Street between Rigel Street and Una Street (LOS F); and
- Main Street between Una Street and I-5 SB Off-ramp (LOS F)

Freeway Segment Analysis

Table 5-4 displays the freeway segments analysis under the Horizon Year (2030) conditions for the Alternative 1 scenario. As shown in the table, the Alternative 1 scenario would have a cumulative traffic related impact along the following freeway segments:

- I-5 from J Street to SR-75 Junction (LOS F and LOS E for the morning and afternoon peak-hour periods, respectively);
- I-5 from SR-75 Junction to 28th Street (LOS F and LOS E for the morning and afternoon peakhour periods, respectively);
- I-5 from 28th Street to I-15 Interchange (LOS E during the morning peak-hour periods);
- I-5 from I-15 Interchange to Division Street (LOS F both peak-hour periods); and
- I-15 from I-5 Interchange to Ocean View Boulevard (LOS F during the afternoon peak-hour period)

ROMOWAY SECANENT READ	HIGHEST ACCEPTABLE LOS ACCEPTABLE LOS D VOLUME 0 18,750 18,750 18,750 18,750 25,000 25,000 18,750 18,750 25,000 25,000 18,750 18,750 18,750 25,000 25,000 6,500 35,000 35,000 18,750 18,750 35,000 35,000 35,000 35,000 35,000 35,000 13,000 35,000 35,000 35,000 13,000 35,000 35,000 35,000 35,000 13,000 13,000 13,000 35,000	LOSE CAPACITY 22,500 30,000 30,000 8,000 8,000 8,000 8,000 8,000 15,000 15,000 8,0000 8,000 8,000 8,0000 8,0000 8,000 8,000 8,000 8,000 8,000 8,000 8,0000 8,000 8,000 8,000 8,000 8,0000 8,000 8,0000 8,0000 8,0000 8,000 8,0000 8,0000 8,00000000	EXISTI ADT 14.170 15,300 15,300 15,300 11,812 10,381 11,812 10,381 2,561 2,561 2,561 2,561 2,561 10,381 1,8856 18,856 18,856 18,856 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,7785 10,77855 10,77855 10,77855 10,77855 10,77855 10,778555 10,778555 10	EXISTING CONDITIONS DT V/C.RATIO LON 0.1 (b) LON (170 0.630 C (300 0.510 C (311) 0.650 C (312) 0.555 C (314) 0.555 C (314) 0.525 C (314) 0.525 C (314) 0.525 C (314) 0.525 C (314) 0.320 B (312) 0.908 C (312) 0.90 C (312) 0.90 0.188 (172) 0.878 E (172) 0.878 E (733) 0.215 A (733) 0.215 A	IONS LOS B B B B	YEAR 20 ADT ADT 25,200 25,200 24,300 20,000 12,900	YEAR 2030 (ALTERNATIVE I) ADT V/C RATIO ADT 0.662	LOS	Δ in V/C	SIGNIFICANT?
ROADWAY SEGMENT ROADWAY CLASSIFICATION (a) auvez Pkwy Lugan Ave allane Collector (with TWLT) Logan Ave 3 Lane Collector (with TWLT) I.National Ave 3 Lane Collector (with TWLT) Main St and Harbor Dr 3 Lane Collector (with TWLT) Main St and Harbor Dr 3 Lane Collector (with TWLT) St 3 Lane Collector (with TWLT) National Ave and Main St 4 Lane Collector (with TWLT) St 2 Lane Collector (with TWLT) National Ave and Harbor Dr 2 Lane Collector (with TWLT) National Ave and Harbor Dr 2 Lane Collector (with TWLT) National Ave and Main St 2 Lane Collector (with TWLT) National Ave and Main St 2 Lane Collector (with TWLT) National Ave and Main St 2 Lane Collector (with TWLT) Main St and Harbor Dr 4 Lane Major Arterial Main St and Harbor Dr 2 Lane Collector (with TWLT) Main St and Main St 2 Lane Collector (with TWLT) Main St and Harbor Dr 2 Lane Collector (with TWLT) Main St and LS 2 Lane Collector (with TWLT) Main St and LS 2 Lane Collector (with TWLT) Main St an		APACITY 22,500 30,000 22,500 30,000 30,000 8,000 8,000 30,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000	ADI 14,170 15,300 15,300 15,300 12,494 11,812 10,381 2,561 2,561 2,561 16,658 16,658 16,658 16,658 19,785	(b) 0.630 0.510 0.555 0.555 0.510 0.510 0.555 0.525 0.326 0.326 0.326 0.326 0.328 0.386 0.328 0.298 0.328 0.2988 0.2988 0.2988 0.2988 0.2988 0.2988 0.2988 0.2988 0.2		ADT 14,900 25,200 24,300 22,000 12,900	(b) 0.662	ros		IGNIFICAN
Instruction 3 Lane Collector (with TWLT) Logan Ave and National Ave 3 Lane Collector (with TWLT) National Ave and National Ave 3 Lane Collector (with TWLT) Newton Ave and Main St 3 Lane Collector (with TWLT) National Ave and Main St 3 Lane Collector (with TWLT) National Ave and Main St 3 Lane Collector (with TWLT) St 2 Lane Collector (with TWLT) National Ave and Harbor Dr 2 Lane Collector (with TWLT) National Ave and Harbor Dr 2 Lane Collector (with TWLT) National Ave and Harbor Dr 2 Lane Collector (with TWLT) National Ave and Main St 2 Lane Collector (with TWLT) I Boston Ave and Main St 2 Lane Collector (with TWLT) Main St and Harbor Dr 4 Lane Major Arterial Main St and Harbor Dr 2 Lane Collector (with TWLT) Main St and Harbor Dr 2 Lane Collector (with TWLT) Main St and Harbor Dr 2 Lane Collector (with TWLT) Main St and Harbor Dr 2 Lane Collector (with TWLT) Main St and Harbor Dr 2 Lane Collector (with TWLT) Main St and Sigshee St and Cesar Chavez Pkwy and Soft St 2 Lane Collector (with TWLT) Main St and Sigshee St	18,750 25,000 18,750 18,750 18,750 25,000 25,000 6,500 6,500 18,750 18,750 5,500 6,500 13,000 6,500 6,500 13,000 6,500 13,000 13,000 13,000 13,000 6,500	22,500 30,000 30,000 22,500 22,500 30,000 8,000 8,000 30,000 30,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000	14,170 15,300 12,494 12,494 12,494 11,812 10,381 10,381 10,381 2,561 2,561 2,561 2,3086 3,086 2,3086 10,381 10,381 10,381 10,381 11,8,856 16,658 16,658 16,658 16,658 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785	0.630 0.630 0.510 0.510 0.555 0.555 0.555 0.525 0.555 0.536 0.346 0.346 0.336 0.336 0.336 0.320 0.320 0.320 0.320 0.328 0.320 0.328 0.495 0.495 0.495 0.495 0.215 0.613		14,900 25,200 24,300 20,000 12,900	0.662			
Logan Ave and National Ave4 Lane Collector (with TWLT)National Ave and Newton Ave3 Lane Collector (with TWLT)Newton Ave and Main St3 Lane Collector (with TWLT)Nain St and Harbor Dr3 Lane Collector (with TWLT)Nain St and Harbor Dr2 Lane Collector (with TWLT)St2 Lane Collector (No TWLT)St2 Lane Collector (No TWLT)National Ave and Main St2 Lane Collector (No TWLT)National Ave and Main St2 Lane Collector (No TWLT)National Ave and Main St2 Lane Collector (with TWLT)National Ave and Main St2 Lane Collector (with TWLT)National Ave and Main St2 Lane Collector (with TWLT)Nain St and Harbor Dr3 Lane Collector (with TWLT)Nain St and Harbor Dr2 Lane Collector (with TWLT)Main St and Wabash Blvd2 Lane Collector (with TWLT)Main St and Wabash Blvd2 Lane Collector (with TWLT)Main St and Vabash Blvd2 Lane Collector (with TWLT)Main St and Sigabee St2 Lane Collector (with TWLT)Main St and L-52 Lane Collector (with TWLT)Sigsbee St and Cesar Chavez Pkvy2 Lane Collector (with TWLT)Sigsbee St and Cesar Chave	25,000 18,750 18,750 25,000 6,500 6,500 6,500 18,750 18,750 6,500 13,000 35,000 6,500 6,500 13,000 14,0000 14,000 14,000 14,	30,000 22,500 30,000 8,000 8,000 8,000 15,000 15,000 8,0000 8,0000 8,0000 8,0000 8,000000 8,0000 8,0000 8,0000 8,0000 8,0000 8,0000 8,0000 8,00000 8,0000 8,0000 8,0000 8,0000 8,0000 8,000000 8,0000 8,0000 8,00000000	15,300 12,494 11,812 10,381 10,381 10,381 2,561 2,561 2,561 2,561 2,561 10,381 10,500 18,856 18,856 18,856 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785	0.510 0.555 0.5555 0.5255 0.5255 0.5255 0.3266 0.3366 0.3366 0.336 0.336 0.336 0.336 0.336 0.336 0.336 0.336 0.336 0.336 0.337 0.336 0.495 0.495 0.215 0.613		25,200 24,300 20,000 12,900	_	C	0.032	ON
National Ave and Newton Ave 3 Lane Collector (with TWLT) Newton Ave and Main St 3 Lane Collector (with TWLT) Newton TWLT) <td>18.750 18.750 18.750 25.000 6.500 6.500 6.500 18.750 5.500 6.500 13.000 6.500 6.500 13.000 6.500 6.500</td> <td>22.500 22.500 30,000 8,000 8,000 8,000 15,000 15,000 8,0000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,00000 8,0000 8,0000 8,000 8,000 8,0000 8,0000 8,0000 8,000 8,0000 8,0000 8,0000 8,0000 8,0000 8,00000000</td> <td>12,494 11,812 11,812 10,381 2,561 1,566 1,573 1,573 1,573 1,573</td> <td>0.555 0.555 0.346 0.346 0.336 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.416 0.495 0.495 0.495 0.215 0.613</td> <td></td> <td>24,300 20,000 12,900</td> <td>0.840</td> <td>Е</td> <td>0.330</td> <td>YES</td>	18.750 18.750 18.750 25.000 6.500 6.500 6.500 18.750 5.500 6.500 13.000 6.500 6.500 13.000 6.500 6.500	22.500 22.500 30,000 8,000 8,000 8,000 15,000 15,000 8,0000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000 8,00000 8,0000 8,0000 8,000 8,000 8,0000 8,0000 8,0000 8,000 8,0000 8,0000 8,0000 8,0000 8,0000 8,00000000	12,494 11,812 11,812 10,381 2,561 1,566 1,573 1,573 1,573 1,573	0.555 0.555 0.346 0.346 0.336 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.416 0.495 0.495 0.495 0.215 0.613		24,300 20,000 12,900	0.840	Е	0.330	YES
Newton Ave and Main St 3 Lane Collector (with TWLT) Main St and Harbor Dr 4 Lane Collector (with TWLT) St 2 Lane Collector (with TWLT) I-5 and National Ave 2 Lane Collector (No TWLT) I-5 and National Ave 2 Lane Collector (No TWLT) I-5 and National Ave 2 Lane Collector (No TWLT) National Ave and Main St 2 Lane Collector (No TWLT) I-5 and Boston Ave 3 Lane Collector (No TWLT) I-5 and Boston Ave 3 Lane Collector (No TWLT) I-5 and Boston Ave 3 Lane Collector (Nith TWLT) I-5 and Boston Ave 3 Lane Collector (Nith TWLT) I-5 and Boston Ave 3 Lane Collector (Nith TWLT) I-5 and Harbor Dr 4 Lane Major Arterial I-5 and Harbor Dr 2 Lane Collector (Nith TWLT) Main St and Wabash Blvd 2 Lane Collector (No TWLT) I-1 Main St and V-5 2 Lane Collector (No TWLT) Main St and V-5 2 Lane Collector (No TWLT) Main St and Harbor Drive 2 Lane Collector (No TWLT) Main St and Harbor Drive 2 Lane Collector (No TWLT) Main St and L-5 2 Lane Collector (No TWLT) Main St and L-5 2 Lane Collector (No TWLT) Main St and L-5 2 Lane Collector (No TWLT) Main St and L-5 2 Lane Collector (No TWLT) Main St and L-5	18,750 25,000 6,500 6,500 6,500 6,500 18,750 35,000 35,000 35,000 35,000 6,500 6,500 13,000 6,500 6,500	22,500 30,000 30,000 8,000 8,000 8,000 30,000 30,000 30,000 15,000 15,000 15,000 8,000 8,000	11,812 10,381 10,381 3,086 3,086 2,561 16,658 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785 19,785	0.525 0.525 0.346 0.346 0.336 0.386 0.320 0.386 0.320 0.386 0.320 0.386 0.320 0.386 0.320 0.386 0.416 0.416 0.415 0.495 0.495 0.495 0.013 0.013	A B B C	20,000 12,900	1.080	F	0.525	YES
Main St and Harbor Dr 4 Lane Collector (with TWLT) St St 1-5 and National Ave 2 Lane Collector (No TWLT) National Ave and Harbor Dr 2 Lane Collector (No TWLT) National Ave and Harbor Dr 2 Lane Collector (No TWLT) I-5 and National Ave and Main St 2 Lane Collector (with TWLT) National Ave and Main St 3 Lane Collector (with TWLT) I-5 and Boston Ave 3 Lane Collector (with TWLT) Boston Ave and Main St 4 Lane Collector (with TWLT) I-5 and Boston Ave and Main St 2 Lane Collector (with TWLT) I-5 and Boston Ave and Main St 2 Lane Collector (with TWLT) Main St and Harbor Dr 4 Lane Major Arterial Main St and Wabash Blvd 2 Lane Collector (with TWLT) Main St and Wabash Blvd 2 Lane Collector (with TWLT) Main St and Wabash Blvd 2 Lane Collector (with TWLT) Main St and Harbor Drive 2 Lane Collector (with TWLT) Main St and Harbor Drive 2 Lane Collector (with TWLT) Main St and L-5 2 Lane Collector (with TWLT) Main St and L-5 2 Lane Collector (with TWLT) Main St and L-5 2 Lane Collector (with TWLT) Main St and L-5 2 Lane Collector (with TWLT) Main St and L-5 2 Lane Collector (with TWLT) Main St and L-5 2 Lane Collec	25,000 6,500 6,500 6,500 118,750 118,750 118,750 118,750 113,000 6,500 6,500 6,500 6,500 113,000 113,000 113,000	30,000 8,000 8,000 30,000 8,000 15,000 8,0000 8,000 8,0000 8,0000 8,000 8,000 8,000 8,0000	10.381 3,086 3,086 2,561 2,500 19,785	0.346 0.346 0.380 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.320 0.416 0.416 0.495 0.495 0.495 0.215 0.613 0.613	A B B B	12,900	0.889	Е	0.364	YES
St 3 Lane Collector (No TWLT) I I-5 and National Ave 2 Lane Collector (No TWLT) National Ave and Harbor Dr 2 Lane Collector (No TWLT) I-5 and Boston Ave 3 Lane Collector (No TWLT) I-5 and Boston Ave 3 Lane Collector (No TWLT) I-5 and Boston Ave 3 Lane Collector (with TWLT) I-5 and Boston Ave and Main St 4 Lane Collector (with TWLT) I Boston Ave and Main St 4 Lane Collector (with TWLT) I Boston Ave and Main St 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I O Sigsbee St 2 Lane Collector (with TWLT) I O Sigsbee St and Sigsbee	6,500 6,500 6,500 18,750 35,000 35,000 13,000 13,000 6,500 6,500 13,0000 13,0000 13,0000 13,0000000000	8,000 8,000 30,000 30,000 15,000 15,000 8,000 8,000 8,000 8,000	3,086 2,561 2,561 2,380 18,856 18,856 18,856 18,856 18,856 19,785	0.386 0.320 0.320 0.320 0.298 0.978 0.629 0.416 0.878 0.495 0.495 0.495 0.215 0.613	A B B		0.430	В	0.084	NO
1-5 and National Ave 2 Lane Collector (No TWLT) National Ave and Harbor Dr 2 Lane Collector (No TWLT) National Ave and Main St 2 Lane Collector (No TWLT) I-5 and Boston Ave 3 Lane Collector (No TWLT) I Boston Ave and Main St 4 Lane Collector (with TWLT) I Boston Ave and Main St 1 Lane Collector (with TWLT) I Boston Ave and Main St 1 Lane Collector (with TWLT) I Boston Ave and Main St 2 Lane Collector (with TWLT) I Boston Ave and Main St 2 Lane Collector (with TWLT) I Boston Ave and Main St 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Wabash Blvd and Harbor Drive 2 Lane Collector (with TWLT) I Wabash Blvd and Harbor Drive 2 Lane Collector (with TWLT) I Wabash Blvd and Harbor Drive 2 Lane Collector (with TWLT) I Wabash Blvd and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Trh St and Sigsbee St and Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) I Obst and Sigsbee St and Sigsbee St	6,500 6,500 6,500 18,750 35,000 35,000 6,500 6,500 6,500 13,000 13,000 13,000	8,000 8,000 30,000 8,000 8,000 8,000 8,000 8,000 8,000 8,000	3,086 3,086 2,561 2,561 2,561 2,561 2,561 2,561 2,561 2,561 2,561 2,561 2,561 2,561 2,561 2,561 2,561 2,561 2,561 1,500 1,500 1,500 1,500 1,500 1,723 1,723 1,723	0.386 0.320 0.298 0.978 0.978 0.416 0.416 0.188 0.878 0.495 0.495	A B B					
National Ave and Harbor Dr 2 Lane Collector (No TWLT) I-5 and Boston Ave and Main St 2 Lane Collector (with TWLT) I-5 and Boston Ave 3 Lane Collector (with TWLT) I Boston Ave and Main St 4 Lane Collector (with TWLT) I Boston Ave and Main St 4 Lane Collector (with TWLT) I Main St and Harbor Dr 4 Lane Collector (with TWLT) I Main St and Harbor Dr 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Vabash Blvd 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Ocear Chavez Pkwy and Seth St 2 Lane Collector (with TWLT) Si	6,500 6,500 35,000 6,500 6,500 13,000 13,000 6,500 6,500 13,000 13,000 13,000 13,000 13,000 13,000	8,000 8,000 30,000 15,000 15,000 8,000 8,000 8,000 8,000 8,000 8,000 15,0000 15,0000 15,0	2,380 2,380 18,856 16,658 16,658 16,658 16,658 19,785 19,7	0.298 0.978 0.629 0.416 0.878 0.878 0.878 0.495 0.495	A B	5,800	0.725	D	0.339	on
National Ave and Main St 2 Lane Collector (No TWLT) I - S and Boston Ave 3 Lane Collector (with TWLT) I - Boston Ave and Main St 4 Lane Collector (with TWLT) I - Boston Ave and Main St 4 Lane Collector (with TWLT) I - Boston Ave and Main St 2 Lane Collector (with TWLT) I - Boston Ave and Main St 2 Lane Collector (No TWLT) I - Boston Ave and Main St 2 Lane Collector (No TWLT) I - Boston Ave and Main St 2 Lane Collector (No TWLT) I - Boston Ave and Main St 2 Lane Collector (with TWLT) I - Main St and Vabash Blvd 2 Lane Collector (with TWLT) I - Main St and I-5 2 Lane Collector (No TWLT) I - Main St and I-5 2 Lane Collector (No TWLT) I - Main St and I-5 2 Lane Collector (No TWLT) I - Main St and I-5 2 Lane Collector (No TWLT) I - Main St and I-5 2 Lane Collector (No TWLT) I - Main St and I-5 2 Lane Collector (No TWLT) I - Main St and I-5 2 Lane Collector (No TWLT) I - Main St and Sigsbee St and Beardsley St 2 Lane Collector (with T	6,500 18,750 25,000 35,000 6,500 13,000 35,000 13,000 6,500 6,500 13,000 10	8,000 30,000 30,000 8,000 8,000 8,000 8,000 8,000 8,000	2,380 22,000 18,856 16,658 16,658 16,658 16,658 19,785 19,	0.298 0.978 0.978 0.416 0.188 0.188 0.188 0.188 0.188 0.188 0.188 0.188 0.188 0.188 0.188 0.188 0.188 0.188 0.188 0.188	А	7,800	0.975	ы	0.655	YES
I F5 and Boston Ave 3 Lane Collector (with TWLT) I Boston Ave and Main St 4 Lane Collector (with TWLT) I Boston Ave and Main St 4 Lane Collector (with TWLT) I Boston Ave and Main St 2 Lane Collector (with TWLT) I Boston Ave and Main St 2 Lane Collector (with TWLT) I Boston Ave and Main St 2 Lane Collector (No TWLT) I Main St and Wabash Blvd 2 Lane Collector (No TWLT) I Main St and L5 2 Lane Collector (with TWLT) I Main St and L5 2 Lane Collector (with TWLT) I Main St and L5 2 Lane Collector (with TWLT) I Main St and L5 2 Lane Collector (with TWLT) I TYth St and Sigsbee St 2 Lane Collector (with TWLT) Ve 2 Lane Collector (with TWLT) Na 2 Lane Collector (with TWLT) I TYth St and Sigsbee St and Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) I Sigsbee St and Sigsbee	18,750 25,000 35,000 6,500 13,000 6,500 6,500	22.500 30,000 8,000 8,000 8,000 8,000 8,000 8,000	22,000 18,856 16,658 1,500 1,500 1,500 1,725 19,785 1,723 1,725 1,725 1,725 1,725 1,725 1,725 1,725 1,725 1,725 1,725	0.978 0.629 0.416 0.188 0.878 0.878 0.878 0.495 0.495		7.000	0.875	Е	0.577	YES
I-5 and Boston Ave 3 Lane Collector (with TWLT) I Boston Ave and Main St 4 Lane Collector (with TWLT) I Main St and Harbor Dr 4 Lane Collector (with TWLT) I Boston Ave and Main St 2 Lane Collector (with TWLT) I Boston Ave and Main St 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Harbor Drive 4 Lane Major Arterial I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (with TWLT) I T/th St and Sigsbee St and Cesar Chavez Pkwy 2 Lane Collector (with TWLT) Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St and Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) Cesar Chavez Pkwy and Soth St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St and Beardsley St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St and Beardsley St 2 Lane Collector (with TWLT)	18,750 25,000 35,000 6,500 13,000 35,000 6,500 6,500 13,000	22.500 30,000 8,000 8,000 8,000 8,000 8,000	22,000 18,856 16,658 1,500 1,702 1,702 1,702 1,702 1,700 1,702	0.978 0.629 0.416 0.188 0.878 0.878 0.878 0.495 0.495		0 0 0		1		
I Boston Ave and Main St 4 Lane Collector (with TWLT) I Main St and Harbor Dr 4 Lane Major Arterial I Boston Ave and Main St 2 Lane Collector (No TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Main St and Vabash Blvd 2 Lane Collector (with TWLT) I Main St and I-5 2 Lane Collector (No TWLT) I Main St and I-5 2 Lane Collector (No TWLT) I Main St and I-5 2 Lane Collector (No TWLT) I Tht St and Sigsbee St 2 Lane Collector (with TWLT) Ne 2 Lane Collector (with TWLT) Ne 2 Lane Collector (with TWLT) I Ofth St and Sigsbee St and Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) I Ofth St and Sigsbee St and Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) I Ofth St and Sigsbee St and Beardsley St 2 Lane Collector (with TWLT) I Ofth St and Sigsbee St and Beardsley St 2 Lane Collector (with TWLT)	25,000 35,000 6,500 35,000 6,500 6,500 13,000	30,000 8,000 8,000 8,000 8,000 8,000 8,000	18,856 16,658 1,500 1,500 13,172 19,785 19,785 1,723 1,723 1,723	0.629 0.416 0.188 0.878 0.878 0.878 0.495 0.495	E	34,500	1.533	F	0.555	YES
Main St and Harbor Dr 4 Lane Major Arterial n Boston Ave and Main St 2 Lane Collector (with TWLT) n Main St and Wabash Blvd 2 Lane Collector (with TWLT) n Wabash Blvd and Harbor Drive 4 Lane Major Arterial n Main St and U-5 2 Lane Collector (with TWLT) n Main St and I-5 2 Lane Collector (with TWLT) n Main St and I-5 2 Lane Collector (No TWLT) n Main St and I-5 2 Lane Collector (No TWLT) n Main St and I-5 2 Lane Collector (No TWLT) n Main St and I-5 2 Lane Collector (No TWLT) n Sigsbee St and Cesar Chavez Pkwy 2 Lane Collector (with TWLT) n 17th St and Sigsbee St and Cesar Chavez Pkwy 2 Lane Collector (with TWLT) cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) n Sigsbee St and Sigsbee St and Beardsley St 2 Lane Collector (with TWLT)	35,000 6,500 13,000 35,000 6,500 6,500 13,000	40,000 8,000 8,000 8,000 8,000	16,658 1,500 1,500 19,785 19,785 1,723 1,723 1,723 1,723	0.416	С	24,200	0.807	D	0.178	ON
n Boston Ave and Main St 2 Lane Collector (No TWLT) Main St and Wabash Blvd 2 Lane Collector (with TWLT) i Wabash Blvd and Harbor Drive 4 Lane Major Arterial i Wabash Blvd and Harbor Drive 2 Lane Collector (with TWLT) i Main St and I-5 2 Lane Collector (No TWLT) i Main St and I-5 2 Lane Collector (No TWLT) i Main St and I-5 2 Lane Collector (No TWLT) i T7th St and Sigsbee St 2 Lane Collector (No TWLT) Sigsbee St and Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) i Oth St and Sigsbee St and Destrop (with TWLT) 2 Lane Collector (with TWLT) i Sigsbee St and S	6.500 13,000 35,000 6,500 13,000	8,000 8,000 8,000 8,000	1,500 13,172 19,785 19,785 4,900	0.188 0.878 0.495 0.215 0.613	В	23,300	0.583	С	0.167	NO
n Boston Ave and Main St 2 Lane Collector (No TWLT) Main St and Wabash Blvd 2 Lane Collector (with TWLT) wabash Blvd and Harbor Drive 4 Lane Major Arterial Main St and U-5 2 Lane Collector (No TWLT) Main St and I-5 2 Lane Collector (No TWLT) Main St and I-5 2 Lane Collector (No TWLT) I Th St and Sigsbee St 2 Lane Collector (No TWLT) Name 2 Lane Collector (Nith TWLT) Name 2 Lane Collector (with TWLT)	6,500 13,000 35,000 6,500 13,000 13,000	8,000 15,000 8,000 8,000	1,500 13,172 19,785 1,785 1,723 1,723 4,900	0.188 0.878 0.495 0.495 0.215 0.613					-	
Main St and Wabash Blvd 2 Lane Collector (with TWLT) I Wabash Blvd and Harbor Drive 4 Lane Major Arterial Main St and I-5 2 Lane Collector (No TWLT) Main St and I-5 2 Lane Collector (No TWLT) Main St and I-5 2 Lane Collector (No TWLT) Main St and I-5 2 Lane Collector (No TWLT) I Trth St and Sigsbee St 2 Lane Collector (with TWLT) Sigsbee St and Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St and Destroper	13,000 35,000 6,500 6,500	8,000	13,172 19,785 1,723 4,900	0.878 0.495 0.215 0.215	Α	5,300	0.663	D	0.476	NO
I Wabash Blvd and Harbor Drive 2 Lane Collector (No TWLT) I Main St and I-5 2 Lane Collector (No TWLT) Main St and I-5 2 Lane Collector (No TWLT) I Tth St and Sigsbee St 2 Lane Collector (No TWLT) I Tth St and Sigsbee St 2 Lane Collector (with TWLT) Sigsbee St and Cesar Chavez Pkwy 2 Lane Collector (with TWLT) I ofth St and Sigsbee St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St 2 Lane Collector (with TWLT)	35,000 6,500 13,000	8,000	1,723	0.495	E	14 500	70 O	Ę	080.0	VEC
I Main St and I-5 2 Lane Collector (No TWLT) I Main St and I-5 2 Lane Collector (No TWLT) I Th St and Sigsbee St 2 Lane Collector (with TWLT) Ve 2 Lane Collector (with TWLT) Sigsbee St and Cesar Chavez Pkwy 2 Lane Collector (with TWLT) Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) Ave 2 Lane Collector (with TWLT) I ofth St and Sigsbee St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St 2 Lane Collector (with TWLT) I ofth St and Sigsbee St 2 Lane Collector (with TWLT)	6,500	8,000	1,723	0.215	a m	25.800	0.645	c r	0.150	ON
Main St and I-5 2 Lane Collector (No TWLT) Main St and I-5 2 Lane Collector (No TWLT) we 2 Lane Collector (with TWLT) ve 2 Lane Collector (with TWLT) 17th St and Sigsbee St 2 Lane Collector (with TWLT) 17th St and Sigsbee St 2 Lane Collector (with TWLT) 16th St and Sigsbee St 2 Lane Collector (with TWLT) 16th St and Sigsbee St 2 Lane Collector (with TWLT) 16th St and Sigsbee St 2 Lane Collector (with TWLT) 16th St and Sigsbee St 2 Lane Collector (with TWLT) 16th St and Sigsbee St 2 Lane Collector (with TWLT)	6,500 6,500 13,000	8,000	1,723	0.215	4			,		2
Main St and I-5 2 Lane Collector (No TWLT) ve 2 Lane Collector (with TWLT) 17th St and Sigsbee St 2 Lane Collector (with TWLT) 15gsbee St and Cesar Chavez Pkwy 2 Lane Collector (with TWLT) 1 Sigsbee St and Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) 1 Cesar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) 1 of th St and Sigsbee St 2 Lane Collector (with TWLT) 1 of th St and Sigsbee St 2 Lane Collector (with TWLT) 1 sigsbee St and Beardsley St 2 Lane Collector (with TWLT)	6,500	8,000	4,900	0.613	A	1,400	0.175	A	-0.040	ON
in St and I-5 2 Lane Collector (No TWLT) h St and Sigsbee St 2 Lane Collector (with TWLT) shee St and Cesar Chavez Pkwy 2 Lane Collector (with TWLT) ar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) h St and Sigsbee St and Beardsley St 2 Lane Collector (with TWLT) shee St and Beardsley St 2 Lane Collector (with TWLT) h St and Sigsbee St and Beardsley St 2 Lane Collector (with TWLT) h St and Sigsbee St and Beardsley St 2 Lane Collector (with TWLT) h St and Sigsbee St and Beardsley St 2 Lane Collector (with TWLT) h St and Sigsbee St and Beardsley St 2 Lane Collector (with TWLT) h St and	6,500 13,000	8,000	4,900	0.613						
h St and Sigsbee St 2 Lane Collector (with TWLT) sbee St and Cesar Chavez Pkwy 2 Lane Collector (with TWLT) ar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) h St and Sigsbee St 2 Lane Collector (with TWLT) sbee St and Beardsley St 2 Lane Collector (with TWLT)	13,000				С	6,700	0.838	Е	0.225	YES
h St and Sigsbee St 2 Lane Collector (with TWLT) shee St and Cesar Chavez Pkwy 2 Lane Collector (with TWLT) ar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) h St and Sigsbee St 2 Lane Collector (with TWLT) shee St and Beardsley St 2 Lane Collector (with TWLT)	13,000	0000 1	- - 			0010		ſ		014
ar Chavez Pkwy and 26th St 2 Lane Collector (with TWLT) h St and Sigsbee St 2 Lane Collector (with TWLT) she St and Bardsley St 2 Lane Collector (with TWLT)	13 000	15 000	400,0 7 478	0.499	د ر	16 500	0./00	U F	0.400	VES
h St and Sigsbee St 2 Lane Collector (with TWLT) shee St and Beardsley St 2 Lane Collector (with TWLT)	13,000	15,000	2.954	0.197	A A	5,700	0.380	B	0.183	ON N
h St and Sigsbee St 2 Lane Collector (with TWLT) see St and Beardsley St 2 Lane Collector (with TWLT)		~								
2 Lane Collector (with TWLT)	13,000	15,000	2,603	0.174	A	12,600	0.840	D	0.666	NO
	13,000	15,000	4,500	0.300	Α	12,600	0.840	D	0.540	NO
cwy 2 Lane Collector (No TWLT)	6,500	8,000	3,511	0.439	С	17,000	2.125	F	1.686	YES
d Evans St 2 Lane Collector (No TWLT)	6,500	8,000	4,643	0.580	C	9,300	1.163	F	0.583	YES
St 2 Lane Collector (with TWLT)	13,000	15,000	3,677	0.245	< ,	8,700	0.580	c	0.335	ON I
between Sicard St and 2/th St	6,500	8,000	8,445	9¢0.1	ž	10,200	c/7.1	ž	0.219	YES
Sth and 29th St 2 Lane Collector (No TWLT)	6,500	8,000	2,420	0.303	V	15,000	1.875	F	1.572	YES
St 2 Lane Collector (No TWLT)	6,500	8,000	2,420	0.303	Υ	8,300	1.038	F	0.735	YES
twy 2 Lane Collector (No TWLT)	6,500	8,000	3,566	0.446	С	4,200	0.525	С	0.079	ON
and Evans St 2 Lane Collector (No TWLT)	6,500	8,000	2,598	0.325	в	7,900	0.988	Е	0.663	YES
st 2 Lane Collector (No TWLT)	6,500	8,000	2,598	0.325	С	12,000	1.500	Е	1.175	YES
St 3 Lane Collector (No TWLT)	9,750	11,250	7,435	0.661	С	12,700	1.129	F	0.468	YES
between 28th and 29th St 4 Lane Collector (No TWLT) 1 between 20th St and 20th St 20th St and St 20th St TWLT T	13,000 0.750	15,000	11,266	0.751	<u>ы</u> Б	12,400	0.827	н п	0.076	YES
tween 27nd St and Rigel St 41 and Collector (No TWLT)	13 000	15 000	21 100	1.001	4 14	26 100	1 740	ц Ц	0 333	VES
7 Lane Collector (with TWI T)	13,000	15,000	15 944	1.063	- F	20,600	1 373	i F	0.310	VFS
if Ramp 2 Lane Collector (with TWLT)	13,000	15,000	15,177	1.012	- E	18,100	1.207	F F	0.195	YES
teardsley St and Cesar Chavez Pkwy 4 Lane Major Arterial	35,000	40,000	12,094	0.302	А	30,400	0.760	D	0.458	ON
between Cesar Chavez Pkwy and Sampson St 4 Lane Major Arterial 3	35,000	40,000	13,778	0.344	А	25,500	0.638	С	0.294	ON
between Sampson St and Schley St 4 Lane Major Arterial 3	35,000	40,000	9,080	0.227	А	23,400	0.585	С	0.358	NO
t 4 Lane Major Arterial	35,000	40,000	8,816	0.220	A	18,800	0.470	В	0.250	NO
nd 32nd St 4 Lane Major Arterial	35,000	40,000	18,900	0.473	в	26,900	0.673	С	0.200	NO
etween 32nd St and Vesta St 4 Lane Major Arterial 3	35,000	40,000	16,320	0.408	в	31,500	0.788	D	0.380	ON

TATING INTENDE ATTING						HORIZO	T N YEAR (2030) FREEWAY SEC	TABLE 5-4 N YEAR (2030) CONDITIONS ALTERN FREEWAY SEGMENT LOS SUMMARY	TABLE 5-4 HORIZON YEAR (2030) CONDITIONS ALTERNATIVE I FREEWAY SEGMENT LOS SUMMARY							
Matrixed brance Matrixed branone Matrixed brance Matrixe					EXIST	ING					ALTERNATIV	/E 1				
Anticipational Sector	FREEWAY SEGMENT	DIRECTION	NUMBER OF LANES		Ida	PEAK-HOUR VOLUME (c)	V/C RATIO	ros	NUMBER OF LANES	CAPACITY (a)	ADT (b)	PEAK- HOUR VOLUME (c)	V/C RATIO	ros	V/C RATIO A	SIGNIFICANT?
Sit 75 lunction. NB 4M 9 and bit M 6 and<								M PEAK								
SiR 73 Intation Wei Value	I-5	Ę		0 100			0.00	4	1 1 T T T T T	11 000		11 551	1 050	91		ATE C
Clippe 10 301 State Clippe 10 Clippe 10 Clippe 10 Clippe 1000	J Street to SR-75 Junction	an CD	4 M	9,400	164,000	1,195	0.829	2	4 M + I H	11,000	243,100	166,11	0.c0.1	FU	0.22	YES
Internet Interne Internet Internet		an	W t	9,400		7 603	0.800	-	4 M ± 1 H	11,000		11 466	1 043	ED	0.73	VFS
club labeled base SB A 9.00 3.010	SR-75 Junction to 28th Street	SB	4 M	9,400	160,000	c00,1	6000	۲	4 M + 1 H 4 M + 1 H	11.000	241,300	11,400	1.042	ΓO	C7-D	
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Mitigation

The following intersection improvements are needed to mitigate the peak-hour intersection impacts of the proposed Barrio Logan Community Plan Update Land Use Alternative 1:

- <u>National Avenue and 16th Street</u>: A new traffic signal is recommended to be installed at this intersection. A signal warrant worksheet for this intersection is included in **Appendix I**. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- <u>Harbor Drive and Sigsbee Street</u>: A traffic signal is recommended to be installed at the intersection of Sigsbee Street and Harbor Drive. The signal is needed to serve the increased traffic from land uses proposed, as well as accommodating the traffic that would be diverted from Beardsley Street due to the median closure along Harbor Drive. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- Logan Avenue and Beardsley Street/I-5 SB off-ramp: A traffic signal is recommended to be
 installed at the intersection. A signal warrant worksheet for this intersection is included in
 Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon
 Year 2030 volumes.
- <u>National Avenue and Beardsley Street:</u> A traffic signal is recommended to be installed at the intersection. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- <u>Harbor Drive and Beardsley Street:</u> This improvement would extend the raised median along Harbor Drive in front of Beardsley Street converting the intersection to right-in/right-out only movements.
- Logan Avenue and Cesar Chavez Parkway: The addition of an exclusive eastbound right-turn lane and a northbound right-turn overlap phase are recommended to be installed at this intersection. The addition of the exclusive eastbound right-turn lane could be implemented by restriping changes only. An existing MTS bus stop is located where the exclusive right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement. This improvement will not affect the existing on-street parking. The entrance to the State Route 75 ramps would be reconfigured to improve pedestrian circulation. This improvement could include the removal of the free northbound right-turn access from Cesar Chavez Parkway to the State Route 75 ramps.
- <u>National Avenue and Cesar Chavez Parkway:</u> Exclusive eastbound and westbound right-turn lanes are recommended to be installed at this intersection in order to reduce queuing along National Avenue. These improvements could be implemented by restriping changes only. These improvements will not affect the existing on-street parking. An existing MTS bus stop is located where the exclusive westbound right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement.
- Main Street and Cesar Chavez Parkway: An exclusive westbound right-turn lane is recommended to be installed at this intersection in order to reduce queuing along Main Street. This improvement could be implemented by restriping changes only. This improvement will not affect the existing on-street parking. An existing MTS bus stop is located where the exclusive westbound right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement.

- <u>Harbor Drive and Cesar Chavez Parkway:</u> A southbound right-turn overlap phase, dual eastbound left-turn lanes and an exclusive northbound right-turn lane are recommended to be installed. It is anticipated that the exclusive northbound right-turn lane will be completed by Caltrans in conjunction with the extension of the westbound left-turn lane.
- Logan Avenue and Sampson Street: A traffic signal is recommended to be installed. Also, southbound and northbound left-turn lanes are recommended. These lanes could be added with restriping changes only at the time of signalization, and would not require roadway widening. The configuration changes would require the removal of on-street parking along Sampson Street. A total of 16 parking spaces are anticipated to be removed as part of this improvement. The removed parking spaces are likely serving commercial uses along Logan Avenue and multifamily residential units along Sampson Street. The removal of on-street parking spaces will create a shortage of on-street parking within the vicinity of this intersection. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- <u>Main Street and 26th Street:</u> A partial street closure is recommended at the intersection for truck traffic restrictions. The northbound through and eastbound left movements would be eliminated. This improvement is not required to mitigate intersection level of services, but it is recommended for a reduction of truck traffic along residential streets within the community.
- <u>Harbor Drive and Schley Street:</u> The southbound through and southbound left-turn movements are recommended to be prohibited. Right-turn overlap signal phasing is recommended for the southbound movement.
- <u>National Avenue and 28th Street:</u> An exclusive southbound right-turn lane is recommended to be added. This improvement could be accomplished by restriping the roadway without the need for widening. A removal of one on-street parking space would be required along the west side of National Avenue to accommodate a 100-foot southbound exclusive right-turn lane.
- <u>Harbor Drive and 28th Street:</u> A second southbound left-turn lane and a second eastbound left-turn lane are recommended to be added.
- <u>Boston Avenue and Interstate 5 Southbound Ramp-29th Street:</u> This recommendation includes a truck right-turn prohibition for the northbound movement at the intersection of 28th Street and Boston Avenue and truck turning signage to encourage vehicles to use Main Street and 29th Street to enter the Interstate 5 southbound freeway. The Interstate 5 Southbound Ramp and Boston Avenue intersection is recommended to be signalized. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.</u>
- <u>32nd Street and Wabash Boulevard:</u> Potential improvements at this intersection will be further defined once Caltrans completes its truck access improvement study.
- <u>Harbor Drive and 32nd Street:</u> Same as the improvements for Wabash Boulevard and 32nd Street.

Figure 5-3 illustrates the intersection geometrics within Barrio Logan with the recommended intersection improvements listed above.

The following roadway segment improvements are recommended to mitigate the roadway segment cumulative impacts of the proposed Barrio Logan Community Plan Update. The improvements listed would be the same for both land use alternatives.

 <u>Cesar Chavez Parkway between Logan Avenue and Harbor Drive:</u> This roadway segment will be reclassified as a three-lane urban major facility between Logan Avenue and Main Street. Between Main Street and Harbor Drive, the roadway segment will be reclassified as a three-lane major arterial. A raised median will be installed between Harbor Drive and Logan Avenue. The roadway segment will have two lanes in the northbound direction and one lane in the southbound direction. On-street parking will be allowed between Logan Avenue and Main Street. A southbound right-turn auxiliary lane will be present between Main Street and Harbor Drive. The entire roadway segment should be considered for "sharrow" bicycle marking treatment and will be considered a class III bicycle facility.

- <u>28th Street between I-5 and National Avenue:</u> This roadway segment will be reconfigured as a four-lane major arterial with a five-foot raised median. The new configuration would allow for two-lanes in each direction and an auxiliary lane in the southbound direction.
- <u>National Avenue between Cesar Chavez and Evans Street</u>: This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.
- <u>National Avenue between Sicard and 27th Street</u>: This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.
- <u>Main Street between Evans Street and 26th Street:</u> This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.

It is anticipated that traffic patterns within the community will change based on some of the improvements listed above. Fewer vehicles are anticipated to use the roadway segment of Boston Avenue between 28th Street and 29th Street. This is due to the proposed improvements along 28th Street and Main Street and the signalization of Boston Avenue and 29th Street intersection, which serves as an entrance ramp to the I-5 Southbound freeway. It is anticipated that more vehicles would use Main Street and 29th Street. **Figure 5-4** illustrates the peak-hour turning volumes within the community with the anticipated change in traffic patterns.

Table 5-5 displays the summary of the intersection peak-hour analysis with the proposed intersections and roadway segments improvements described above. As shown in Table, with the implementation of the recommended improvements, all intersections within the study area would operate at LOS D or better with the following exceptions:

- Harbor Drive and 28th Street (will continue to operate at LOS E during the afternoon peak-hour period);
- 32nd Street and Wabash Street (will continue to operate at LOS F and LOS E during the morning and afternoon peak-hour periods, respectively); and
- Harbor Drive and 32nd Street (will continue to operate at LOS F during both peak-hour periods).

The Harbor Drive/32nd Street and 32nd Street/Wabash Street intersections are being studied further in an on-going Caltrans study. The latest report includes the installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15. Another improvement under study is the Vesta Street Overcrossing at Harbor Drive which would connect the wet and dry sides of the Naval Base San Diego. On November 1, 2010 the Navy temporarily closed the eastern leg (Norman Scott Road) of the 32nd Street/Norman Street-Wabash Street intersection to improve safety. The Navy is monitoring traffic to determine if this closure should remain. A preliminary analysis indicates that the mentioned projects would improve the intersection to acceptable levels and decrease the potential queuing problems.

Harbor Drive/28th Street is projected to operate at LOS E, even with improvements. There is the potential that improvements to be made between Harbor Drive and State Route 15 (Caltrans study) could divert some traffic off of 28th Street, further improving this intersection

SANDAGs 2050 Regional Transportation Plan (RTP) unconstrained network recommends the grade separation of the trolley lines at 28th Street and at 32nd Street. A peak-hour intersection analysis was conducted for the intersections of 28th Street and 32nd Street with Harbor Drive assuming these proposed

Commercial St/	National Ave/	National Ave/	Newton Ave/
16th St	16th St	Sigsbee St	Sigsbee St
Main St/	Harbor Dr/	Logan Ave/Beardsley St-	National Ave/
Sigsbee St	Sigsbee St	I-5 SB off-ramp	Beardsley St
Newton Ave/	Main St/	Harbor Dr/	Kearney St/
Beardsley St	Beardsley St	Beardsley St	Cesar Chavez Pkwy





Kimley-Horn and Associates, Inc. 5-18 FIGURE 5-3 Horizon Year (2030) with Alternative 1 Improvements Intersection Geometrics

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Logan Ave/	National Ave/	Newton Ave/	Main St/
Cesar Chavez Pkwy	Cesar Chavez Pkwy	Cesar Chavez Pkwy	Cesar Chavez Pkwy
Harbor Dr/	Logan Ave/	National Ave/	National Ave/
Cesar Chavez Pkwy	I-5 SB On-ramp	SR-75 Off-ramp	Evans St
Newton Ave/	Main St/	Logan Ave/	National Ave/
Evans St	Evans St	Sampson St	Sampson St





Kimley-Horn and Associates, Inc. 5-19 FIGURE 5-3.1 Horizon Year (2030) with Alternative 1 Improvements Intersection Geometrics

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Newton Ave/	Main St/	Harbor Dr/	National Ave/
Sampson St	Sampson St	Sampson St	Sicard St
National Ave/	National Ave/	Main St/	Harbor Dr/
26th St	27th St	26th St	Schley St
	30 		
National Ave/	Boston Ave/	Main St/	Harbor Dr/
28th St	28th St	28th St	28th St





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Kimley-Horn and Associates, Inc.

5-20 FIGURE 5-3.2 Horizon Year (2030) with Alternative 1 Improvements Intersection Geometrics

Boston Ave/I-5 SB On-ramp	Main St/ 32nd St	Wabash Blvd/ 32nd St	Harbor Dr/ 32nd St
		Add direct connector to Harbor Dr	Add direct connector to Wabash Blvd
Main St /			
I-15 Ramps			
41 41			







5-21 FIGURE 5-3.3 Horizon Year (2030) with Alternative 1 Improvements Intersection Geometrics

Barrio Logan Co	mmunity Plan	Update					
5 136 /77 5 136 /77 ⇔ 250 /490 ∅ 47 /40 ∅ 47 /40	 № 114 / 122 ⇔ 295 / 488 ☆ 24 / 0 Commercial St 	2 36 / 70 ⇔ 36 / 25 ∞ 56 / 127 16th St	∾ 34 / 25 ⇔ 495 / 458 ∞ 3 / 3 National Ave	 B 58 / 39 A 40 / 23 A 15 / 6 Sigsbee St 	∾ 36 / 27 ⇔ 367 / 246 ∞ 16 / 9 National Ave	 8 17 /8 79 /38 ∞ 33 /16 Sigsbee St 	 5 51 / 23 ⇔ 80 / 50 ≥ 15 / 9 Newton Ave
16 / 64	13 /21 ∞ 340 /670 ⇔ 16 /26 ∾	40/91 ⊘ 194/347 ⇔ 40/31 ∿	40 /61 234 /41 334 /41 332 12 /7 23	10/34	63 /75 26 /61 49 26 /61 49 58 /13 22	6 / 9	24 /20 & 111 /91 & 34 /12 &
5 3 / 2 ⇔ 96 / 60 ⊮ 31 / 20 Sigsbee St	∾ 61/31 ⇔ 8/0 ∞ 31/38 Main St	 710/80 110/80 110/100 Sigsbee St 	∾ 20 / 100 ⇔ 1670 / 780 Harbor Dr	 A7 / 38 A7 / 38 236 / 110 259 / 272 259 / 272 H5 SB Off-Ramp 	⇔ 202 / 154 ஜ 87 / 41 Logan Ave	8 23 / 11 ⇔ 138 / 83 ∞ 216 / 189 Beardsley St	 № 67 / 77 ⇔ 421 / 347 ∞ 241 / 113 National Ave
3 / 4	5 / 0 2 97 / 98 5 24 / 12 2	38 / 65		170 / 515 ⇔ 5 24 / 69 ∿ Saispue 8	31 / 56 &	8/19	4 / 9 2 30 / 43 5 50 / 134 2
5 41 /12 ⇒ 156 /94 ≥ 56 /46 Beardstey St	∾ 15 / 19 ⇔ 82 / 93 ☆ 29 / 13 Newton Ave	6 52 /17 ⇔ 57 /39 ∞ 275 /144 Beardstey St	rs 76 / 79 ⇔ 109 / 33 ⊉ 163 / 78 Main St	11 37/ 24/ 24/ 24/ 24/ 24/ 24/ 24/ 24/ 24/ 24	rs 30 / 20 ⇔ 1610 / 860 Harbor Dr	25 350 / 330 € 250 / 330 € 250 / 330 € 250 / 330 € 250 / 330 € 25	 № 192 / 154 ⇔ 259 / 157 ≈ 613 / 517 Kearney Ave
18 / 7	13 / 5 ∞ 23 / 71 ↔ 19 / 37 ∞	15/22 <i>∂</i> 74/64 ⇔ 4/4 ⊗	2 /0 2 8 /25 4 52 /109 2	580 / 1950 ⇒			257 / 382 & 262 / 345 +





5-22 FIGURE 5-4 Horizon Year (2030) with Alternative 1 Improvements Peak-Hour Turning Volumes

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Barrio Logan Community Plan Update								
 № 82 /52 ⇔ 909 /694 ∞ 70 /114 ∞ cesar chavez Pkwy-SR-75 On- range 	 5 76 / 90 ⇔ 325 / 280 ∞ 100 / 120 Logan Ave 	№ 310 / 410 № ∞ 745 / 550 ∞ 70 / 120 ∞ 70 / 120 ∞ 70 / 120 ∞ 70 / 120 ∞ 70 / 120 ∞ 70 / 120 ∞ 70 / 120 № 70 / 120 № № № 70 / 120 № № № 70 / 70 № № № 70 / 70 № № № № № № №	 ⊾ 120 / 275 ⇔ 350 / 270 ∞ 120 / 110 National Ave 	15 28 28 29 29 29 29 20 29 20 29 20 20 20 20 20 20 20 20 20 20	B 180 / 260 ⇔ 580 / 540 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250	 № 190 / 270 ⇔ 330 / 230 ∞ 70 / 70 Main St 		
140 / 130	100 /140	190 / 300	90 /120	75 / 135	150 / 120	70 /70 2 340 /640 5 90 /180 2		
 5 403 / 324 ⇔ 83 / 30 ☆ 72 / 33 Cesar Chavez Pkwy 	∾ 95 / 43 ⇔ 1047 / 465 2 80 / 50 Harbor Dr	18 dww Wey-Wo 88 St	∾ 84 / 73 ⇔ 127 / 158 Logan Ave	19 9777777 9777777777777777777777777777	 30 / 72 4 18 / 22 9 / 45 Evans St 	 № 26 / 23 ⇔ 226 / 192 ≥ 37 / 32 National Ave 		
118 / 468	10 / 50 2 14 / 63 5 27 / 35 2	497/933	4 / 16	128 / 308 ⇔	17 / 37	28 / 13 2 49 / 18 5 24 / 62 2		
5 37 /21 ⇔ 30 /28 & 7 /30 Evans St	s 30 / 27 ⇔ 63 / 70 ⊉ 16 / 27 Newton Ave	 45 /16 56 /75 Evans St 	ಾ 65 / 62 ⇔ 350 / 239 Main St	23 8995/29 1/7812 2/812 2/812 2/812 2/812 2/99/29 2/812 2/9/87 2/9/87 2/9/87 2/9/143 Logan Ave	54 118 / 107 ⇔ 109 / 86 ⊕ 59 / 123 Sampson St	 № 100 / 100 ⇔ 104 / 70 ∞ 48 / 21 National Ave 		
23 / 24	27/7 2 58/47 5 31/28 2	33 / 12		110 / 108 Ø 0 0 0 224 / 255 ⇔ 223 27 400 163 / 203 % 101 / 101 61	75 / 162	7 /13 ⊘ 95 /185 ⇔ 16 /30 ∿		



X / Y = AM / PM PEAK HOUR TURNING VOLUMES





(cont.)

Barrio Logan Co	mmunity Plan	Update				
22 33 /19 61/19 8ampson St	∾ 35 / 31 ⇔ 81 / 76 ⊉ 15 / 0 Newton Ave	29 ⇒ 172 /85 ⇒ 59 /27 ⇒ 10 /8 Sampson St	∾ 16/8 ⇔ 218/83 ஜ 53/27 Main St	27 927 927 927 927 927 927 927 9	№ 36 / 42 € 81 / 18 ∞ 41 / 18 4 / 4 5 ∞ 4 / 4 5 5	≅ 3 / 1 ⇔ 163 / 125 ⊉ 27 / 8 National Ave
21/34	7 /13 2 40 /90 5 31 /20 2	70 / 118	50 /60 2 31 /46 5 35 /49 2	10 / 56	21 / 40	48 /33 2 48 /46 5 12 /17 2
67 38 15 / 23 51 / 90 51 / 90 26th St	 № 48 / 55 ⇔ 223 / 124 ≥ 36 / 35 National Ave 	30	 ⇔ 269 / 234 ☆ 42 / 31 National Ave 	31 8 (2 1 2 5 7 5 5 5 5 7 7 7 9 7 7 9 2 7 143 / 49 140	32 81 / 51 Schey st	∾ 17 / 39 ⇔ 1542 / 588 Harbor Dr
28 / 33	27 / 46 2 47 / 60 5 15 / 34 2	146 / 368 ⇒ Erig 18 / 23 ∿ 5 85 5	72 / 94 % 149 / 296 %	60 / 194 ↔ 194 / 50 17 / 16 ↔ 17 / 16 57 / 58 57 / 57	74 / 83	
33 307 /102 ⇔ 205 /210 № 115 /199 28th St	 I23 / 240 G28 / 427 2 192 / 463 National Ave 	31 /270 /270 / 1050 / 1050 / 1050 / 250 / 250 / 251 /	 ⊾ 120 / 70 ⇔ 70 / 70 ☆ 45 / 60 Boston Ave 	35 0.000 g / 0.	25 /13 ⇔ 25 /13 ⇔ 15 /12 ∞ 375 /505 28th St	 ⊾ 116 / 278 ⇔ 942 / 524 ⊉ 17 / 14 Harbor Dr
106 / 94	33 / 18 ∞ 98 / 98 ⊕ 86 / 168 ∞	230 / 320	90 / 50	190 / 220	50 / 140	0/10 a 6/134 t 2/0 a



<u>Legend</u> X/Y=AM/PM PEAK HOUR TURNING VOLUMES





FIGURE 5-4.2

Horizon Year (2030) with Alternative 1 Improvements Peak-Hour Turning Volumes (cont.)

Barrio Logan Co	mmunity Plan	Update				
37 38 98P	≅ 88 / 118 ⇔ 102 / 83 ⊉ 18 / 20 Boston Ave	85 ⇒ 42 /73 ⇔ 83 /61 ≈ 39 /123 33 nd St	∾ 79 / 102 ⇔ 494 / 353 ஜ 314 / 207 Main St	39 67/59 67	A0 /200 ⇔ 1040 /280 ⇔ 130 /310 32nd St	 № 390 / 460 ⇔ 735 / 436 ∞ 300 / 40 Harbor Dr
84 / 299	5 /9 ∞ 180 /332 ⇔ 19 /45 ∿	38 / 70	110 /226 ≈ 50 /112 ⇔ 26 /307 ≌	65 / 115 Ø Ø Ø Ø 212 / 115 Ø V Ø Ø Ø 170 / 80 Ø V Ø Ø Ø Ø 52 (130 Ø V Ø	70 / 140	30 /70 2 160 /690 4 30 /140 2
41 021/153 108/123	∾ 107 / 154 ⇔ 497 / 361 Main St					
47 / 303						





FIGURE 5-4.3

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Horizon Year (2030) with Alternative 1 Improvements Peak-Hour Turning Volumes (cont.)

grade separations. The results of the analysis indicated that the proposed grade separation would improve both intersections to LOS D or better during both peak-hour periods under the Horizon Year scenario with either alternative. The proposed grade separations are included in the "revenue constrained scenario". Due to the benefits to adjacent intersections, these grade separation projects are recommended.

Table 5-6 displays the summary of the roadway segment analysis with the roadway segment improvements described above. As shown in the table, the following roadway segments would continue to operate at LOS E or F even with the implementation of the recommended improvements:

- Sampson Street between National Avenue and Harbor Drive (LOS E);
- 26th Street between National Avenue and Main Street (LOS E);
- 32nd St between Main St. and Wabash Blvd (LOS E);
- Vesta Street between Main Street and I-5 Ramps (LOS E);
- Logan Avenue between Sigsbee Street and Cesar Chavez Parkway (LOS F);
- National Avenue between Beardsley Street and Cesar Chavez Parkway (LOS F);
- Boston Avenue between 28th Street and 29th Street (LOS F);
- Boston Avenue between 29th Street and 32nd Street (LOS F);
- Main Street between Cesar Chavez Parkway and Evans Street (LOS E);
- Main Street between 26th Street and 28th Street (LOS F);
- Main Street between 28th Street and 29th Street (LOS F);
- Main Street between 29th Street and 32nd Street (LOS F);
- Main Street between 32nd Street and Rigel Street (LOS F);
- Main Street between Rigel Street and Una Street (LOS F); and
- Main Street between Una Street and I-5 SB Off-ramp (LOS F)

Boston Avenue, National Avenue and 26th Street are desired by the community of Barrio Logan to be more pedestrian and bicycle friendly corridors. The widening of these roadways to improve vehicular circulation was not desired by the community. The vehicular operations along these three facilities could be congested during peak periods and vehicular speeds would be low. Additional widening is not recommended. Traffic calming measures should be evaluated along National Avenue to further enhance the pedestrian and bicycle circulation.

Additional improvements to the failing roadway segments of Sampson Street, 32nd Street, Vesta Street, Logan Avenue and Main Street are not recommended since the roadway segment analysis used in this study is based on theoretical capacities based on the number of travel lanes. The analysis does not take into account other physical features that can affect the capacity of a roadway segment like grades, number of traffic signals, number of driveways, parking availability, etc. In addition, the analysis does not take into account the different traffic peak periods experienced on these roadways due to the surrounding land uses. As an example, the Barrio Logan traffic generators whose peak-hour of use do not correspond to typical peak-hour commuter traffic. To better represent the conditions of a roadway segment within the Barrio Logan community, the operations of the upstream and downstream intersections of each respective segment during the peak periods would indicate whether the roadway segment would have adequate capacity. As shown in the intersection analysis tables, all intersections along the failing roadway segments would operate at acceptable LOS.

In addition to the roadway segment improvements listed above, it is recommended that 28th Street between Harbor Drive and the I-5 Ramps be classified as a four-lane major arterial. For the segment between Harbor Drive and Main Street, a raised median should be installed with an entrance to the Navy

Commissary. The proposed configuration would allow two lanes in each direction with an auxiliary lane for the heavy southbound right-turn movements at Harbor Drive. Parking would need to be removed along both sides of the roadway, with a total loss of approximately 20 parking spaces. The removed parking spaces are likely utilized by NASCO employees or Naval Base San Diego employees or visitors. Additional diagonal parking is recommended to be evaluated for installation along Boston Avenue between 28th Street and 29th Street to replace the loss of parking along 28th Street. The west side of the roadway could be widened by 4 feet to accommodate the proposed interim cross-sections. The east sidewalk will widen to 10 feet to enhance pedestrian circulation. This improvement is not part of mitigation for a roadway segment impact. The improvement is recommended to encourage heavy truck traffic to use 28th Street will include a designated bike lane along both sides of the roadway and a fourteen foot parkway. The ultimate configuration along 28th Street will require additional roadway widening and right-of-way acquisition. An alignment study is required to further define the extent of additional right-way needed and future widening

Conceptual roadway segments improvement figures, including the proposed cross-sections are included in **Appendix K**.

Based on the freeway segment capacity analysis included in this study, Alternative 1 land use scenario is considered to have a cumulative traffic related impact along the following freeway segments:

- I-5 from J Street to SR-75 Junction;
- I-5 from SR-75 Junction to 28th Street;
- I-5 from 28th Street to I-15 Interchange;
- I-5 from I-15 Interchange to Division Street; and
- I-15 from I-5 Interchange to Ocean View Boulevard

SANDAG's Draft 2050 Regional Transportation Plan (RTP) hybrid network includes the following freeway improvements:

- Operational freeway improvements along Interstate 5 between Interstate 15 and Interstate 8; and
- Addition of one (1) main lane and one (1) managed lane in each direction between Interstate 15 and State Route 54;

Both improvements listed above were included in the hybrid network's revenue constrained scenario, approved by SANDAG's board for further study on December 17th, 2010. The improvements included in the RTP are recommended to enhance the regional connectivity and accommodate the forecasted growth of the San Diego region. It should be noted that both land use alternatives presented on this plan would generate less traffic than the current adopted Community Plan land use alternative. Either proposed alternative would lessen, but not eliminate cumulative freeway traffic impacts.

In addition to the proposed freeway improvements listed in the SANDAG's Draft 2050 RTP, the following freeway access improvements are recommended within the Barrio Logan Community:

- Signalization of the intersection of Logan Avenue and Beardsley Street/ Interstate 5 SB off-ramp;
- Traffic signal modification at the intersection of Logan Avenue and Cesar Chavez Parkway (State Route 75 on-ramp);
- Signalization of the intersection of Boston Avenue and Interstate 5 SB on-ramp- 29th Street;

- Roadway improvements along 28th Street to accommodate an additional southbound lane, including the potential for widening the Interstate 5 overcrossing;
- Signalization of the intersection of 28th Street and Interstate 5 southbound off-ramp;
- Changes to the roadway striping along Main Street between 28th Street and 29th Street to facilitate freeway access to the Interstate 5 southbound on-ramp at Boston Avenue;
- Installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15 (under study by the Port of San Diego, and Caltrans);
- Construction of the Vesta Street Overcrossing at Harbor Drive (under study by the Navy);
- Coordination of City of San Diego and Navy related to the closure of the east leg of the 32nd Street and Norman Street-Wabash Street intersection (recently completed on a trial basis by the Navy); and
- Grade separation of the trolley tracks at the 28th Street and Harbor Drive and 32nd Street and Harbor Drive intersections (to be completed by SANDAG and part of the 2050 draft RTP).

The improvements listed above would decrease congestion along the major freeway access locations within the community.

			. ,		5-5 IVE 1 WITH II ION LOS SUM		NTS
			ALTERN	ATIVE 1	ALTERNAT IMPROV		
	INTERSECTION	PEAK HOUR	DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	DESCRIPTION OF IMPROVEMENT
2	National Ave & 16th St	AM	51.7	F	14.1	В	Install Traffic Signal.
2	National Ave & Totil St	PM	232.1	F	8.5	А	instan frame signal.
		AM	ECL	F	12.7	В	
6	Harbor Dr & Sigsbee St	PM	ECL	F	7.6	А	Install Traffic Signal.
		AM	33.1	D	26.7	С	Install Traffic Signal. (This improvement requires Caltrans
7	Logan Ave & Beardsley St- I-5 SB ramp	PM	81.9	F	46.8	D	approval)
		AM	39.9	E	12.9	В	
8	National Ave & Beardsley St		-				Install Traffic Signal.
		PM	129.0	F	13.3	B	Modify raised median along Harbor Drive and restrict the
11	Harbor Dr & Beardsley St	AM	173.7	F	17.5	C	eastbound left-turn movements and southbound left-turn
		PM	51.6	F	11.6	В	movements.
13	Logan Ave & Cesar E. Chavez Pkwy	AM	31.1	С	26.9	С	Add exclusive eastbound right-turn lane. Add northbound
		PM	62.1	Е	52.6	D	overlap phase. (This improvement requires Caltrans approval)
14	National Ave & Cesar E. Chavez Pkwy	AM	30.4	С	19.9	В	Add exclusive eastbound and westbound right-turn lanes. This improvement is recommended to mitigate a potential queing
14	National Ave & Cesar E. Chavez Pkwy	PM	52.4	D	21.5	С	improvement is recommended to mugate a potential queing impact.
16	Main St & Cesar E. Chavez Pkwy	AM	39.3	D	21.6	С	Add exclusive westbound right-turn lane. This improvement is
10	Ivian St & Cesai E. Chavez I kwy	PM	42.5	D	18.7	В	recommended to mitigate a potential queing impact.
17	Harbor Dr & Cesar E. Chavez Pkwy	AM	77.5	Е	48.2	D	Add second eastbound left-turn lane, a southbound right-turn overlap phase and a northbound exclusive right-turn lane. In
		РМ	85.2	F	49.2	D	addition, extend the westbound left-turn pocket (to be done by Caltrans).
23	Logan Ave & Sampson St	AM	143.5	F	10.0	В	Install Traffic Signal. Add northbound and southbound left-turn
25	Logan Ave & Sampson St	PM	197.1	F	29.7	С	lanes.
		AM	8.2	А	8.2	А	Eliminate northbound through movement. This improvement is
31	Main St & 26th St-Schley St	PM	8.0	А	8.0	А	not needed based on a delay impact. It is part of a truck route improvement.
		AM	76.2	Е	32.9	С	Eliminate southbound left/through movement. Add southbound
32	Harbor Dr & Schley St	PM	28.8	С	16.0	В	right-turn overlap phase.
	1	AM	81.2	F	39.7	D	
33	National Ave & 28th St	PM	70.8	E	49.3	D	Add exclusive southbound right-turn lane.
34	Boston Ave & 28th St	AM	36.9	D	22.3	С	Add southbound through lane and remove exclusive northbound
54	Boston Ave & 20th St	PM	45.1	D	36.1	D	right-turn lane.
36	Harbor Dr & 28th St (c)	AM	43.3	D	46.2	D	Add second eastbound and southbound left-turn lanes.
		PM	92.2	F	76.4	E	
37	Boston Ave & I-5 SB On-ramp-29th St	AM PM	21.0 523.6	C F	20.0 31.9	C C	Install Traffic Signal. (This improvement requires Caltrans approval)
		AM	112.7	F	103.4	F	
39	32nd St & Wabash St	PM	85.1	F	75.4	E	Construct a direct connector from Harbor Dr. to Wabash St.
40	Hacker Dr & 22rd St (2)	AM	146.8	F	127.7	F	(under study by Caltrans)
40	Harbor Dr & 32nd St (c)	PM	92.3	F	90.2	F	1
42	I-5 SB off-ramp & 28th St	AM	The intersec		14.7	В	Install Traffic Signal. (This improvement requires Caltrans
		PM	analyzed unde	r this scenario	11.7	В	approval)

otes

Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0

(c) As part of Sandag's Draft 2050 RTP, a grade separation for the trolley lines at this intersection is being proposed under the hybrid network which is the preferred revenue constrained network . With the grade separation, the intersection would operate at LOS D or better. See appendix L for synchro results.

Ŀ	TABLE 5-6 IORIZON YEAR (2030) ALTERNATIVE 1 ROADWAY SEGMENT LOS		ENTS				
		HIGHEST		YEAR 2030 (ALTERNATIVE 1) WITH IMPROVEMENTS			
ROADWAY SEGMENT	ROADWAY CLASSIFICATION (a)	ACCEPTABLE LOS D VOLUME	LOS E CAPACITY	ADT	V/C RATIO (b)	LOS	
Cesar Chavez Pkwy	• • • • • • • •						
north of Logan Ave	3 Lane Collector (with TWLT)	18,750	22,500	14,900	0.662	С	
between Logan Ave and National Ave	3 Lane Urban Major	26,250	30,000	25,200	0.840	D	
between National Ave and Newton Ave	3 Lane Urban Major	26,250	30,000	24,300	0.810	D	
between Newton Ave and Main St	3 Lane Urban Major	26,250	30,000	20,000	0.667	С	
between Main St and Harbor Dr	3 Lane Major	26,250	30,000	12,900	0.430	В	
Sampson St							
between I-5 and National Ave	2 Lane Collector (No TWLT)	6,500	8,000	5,800	0.725	D	
between National Ave and Harbor Dr 26th St	2 Lane Collector (No TWLT)	6,500	8,000	7,800	0.975	Е	
between National Ave and Main St	2 Lane Collector (No TWLT)	6,500	8,000	7,000	0.875	Е	
28th St		0,000	0,000	,,000	0.070		
between I-5 and Boston Ave	4 Lane Major Arterial	35,000	40,000	34,500	0.863	D	
between P-5 and Boston Ave between Boston Ave and Main St	4 Lane Major Arterial	35,000	40,000	24,200	0.605	C	
between Main St and Harbor Dr	4 Lane Major Arterial	35,000	40,000	23,300	0.583	C	
29th St	· Late Major Arteria	55,000	10,000		0.000		
between Boston Ave and Main St (c)	2 Lane Collector (No TWLT)	6,500	8,000	6,300	0.788	D	
32nd St		0,000	0,000	0,000		-	
between Main St and Wabash Blvd	2 Lane Collector (with TWLT)	13,000	15,000	14,500	0.967	Е	
between Wabash Blvd and Harbor Drive	4 Lane Major Arterial	35,000	40,000	25,800	0.645	C	
Rigel St			.,	- /			
between Main St and I-5	2 Lane Collector (No TWLT)	6,500	8,000	1,400	0.175	А	
Vesta St	÷ · · · · · · · · · · · · · · · · · · ·	•	•	•	•		
between Main St and I-5	2 Lane Collector (No TWLT)	6,500	8,000	6,700	0.838	Е	
Logan Ave	·	-					
between 17th St and Sigsbee St	2 Lane Collector (with TWLT)	13,000	15,000	10,500	0.700	D	
between Sigsbee St and Cesar Chavez Pkwy	2 Lane Collector (with TWLT)	13,000	15,000	16,500	1.100	F	
between Cesar Chavez Pkwy and 26th St	2 Lane Collector (with TWLT)	13,000	15,000	5,700	0.380	В	
National Ave							
between 16th St and Sigsbee St	2 Lane Collector (with TWLT)	13,000	15,000	12,600	0.840	D	
between Sigsbee St and Beardsley St	2 Lane Collector (with TWLT)	13,000	15,000	12,600	0.840	D	
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (with TWLT)	13,000	15,000	17,000	1.133	F	
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (with TWLT)	13,000	15,000	9,300	0.620	С	
between Evans St and Sicard St	2 Lane Collector (with TWLT)	13,000	15,000	8,700	0.580	С	
between Sicard St and 27th St	2 Lane Collector (with TWLT)	13,000	15,000	10,200	0.680	D	
Boston Ave	1	1	1	1			
between 28th and 29th St (c)	2 Lane Collector (No TWLT)	6,500	8,000	14,000	1.750	F	
between 29th St and 32nd St	2 Lane Collector (No TWLT)	6,500	8,000	8,300	1.038	F	
Main St		1	1	1	1		
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	6,500	8,000	4,200	0.525	С	
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT)	6,500	8,000	7,900	0.988	E	
between Evans St and 26th St	2 Lane Collector (with TWLT)	13,000	15,000	12,700	0.847	D	
between 26th St and 28th St	3 Lane Collector (No TWLT)	9,750	11,250	12,700	1.129	F	
between 28th and 29th St	4 Lane Collector (No TWLT)	13,000	15,000	13,400	0.893	E	
between 29th St and 32nd St	3 Lane Collector (No TWLT)	9,750	11,250	18,700	1.662	F	
between 32nd St and Rigel St	4 Lane Collector (No TWLT)	13,000	15,000	26,100	1.740	F	
between Rigel St and Una St	2 Lane Collector (with TWLT)	13,000	15,000	20,600	1.373	F	
between Una St and I-5 SB Off Ramp Harbor Dr	2 Lane Collector (with TWLT)	13,000	15,000	18,100	1.207	F	
	4 Lane Major Artarial	35,000	40,000	30.400	0.760	P	
between Beardsley St and Cesar Chavez Pkwy between Cesar Chavez Pkwy and Sampson St	4 Lane Major Arterial	35,000	40,000	30,400	0.760	D C	
between Cesar Chavez Pkwy and Sampson St between Sampson St and Schley St	4 Lane Major Arterial 4 Lane Major Arterial	35,000	40,000	25,500 23,400	0.638	c	
between Schley St and 28th St	4 Lane Major Arterial	35,000	40,000	18,800	0.383	В	
between 28th St and 28th St between 28th St and 32nd St	4 Lane Major Arterial 4 Lane Major Arterial	35,000	40,000	26,900	0.470	С	
between 32nd St and Vesta St	4 Lane Major Arterial	35,000	40,000	31,500	0.788	D	
Notes:	· Sale higor / iteria	55,000	.0,000	51,500	0.700	2	

Γ

Bold values indicate roadway segments operating at LOS E or F. (a) Roadway Classification are proposed under the Mobility Element. (b) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.

(c) This segment was analyzed assuming a rerouting of traffic produced by the improvements along 28th Street and Main Street. A total of 1000 ADT were moved from Boston Avenue between 28th St and 29th St to Main St and 29th St. K;SND_TPTO(995707000Excel)[707000Fxcel][70700Fxcel][7070Fxcel][

6.0 HORIZON YEAR (2030) WITH ALTERNATIVE 2

This section summarizes the results of the Horizon Year (2030) conditions analysis within the Barrio Logan community taking into account the land use changes proposed under the Alternative 2 of the Community Plan Update.

Roadway Network

No roadway network changes are assumed to take place under this scenario, with the exception of the addition of a High Occupancy Vehicle (HOV) lane along the I-5 Corridor for both directions of traffic. The additional HOV lane is listed in Sandag's 2030 Regional Transportation Plan (RTP).

Traffic Volumes

The Horizon Year Average Daily Traffic (ADT) volumes on the roadway segments in the study area were derived from a City of San Diego traffic forecast model that incorporated the land use changes proposed under the Alternative 2 scenario. A copy of the forecast model is included in Appendix G.

Table 6-1 presents a more detailed trip generation summary for the community with the land uses included in the Alternative 2 of the Community Plan Update. As shown in the table, the land use designation of Alternative 2 would generate a total of approximately 152,430 average daily trips, including 11,131 (7,828 in and 3,303out) morning peak-hour trips and 15,939 (6,270in and 9,669 out) afternoon peak-hour trips.

Modeled forecast volumes experienced some minor refinements. In the process of calibrating the existing model, it was concluded that three post model adjustments should be made to the 2030 traffic models. Traffic volumes along Cesar Chavez Parkway between Newton Avenue and Main Street were reduced by 4,300 ADT to account for Newton Avenue not being in the model. Traffic volumes on 28th Street and 32nd between Main Street and Harbor Drive were increased by 4,000 ADT and 600 ADT, respectively, per calibration between base year model and actual traffic volume counts. Minor smoothing of traffic volumes were made to reflect the gross nature of model loadings from TAZs. Volumes for streets that were not in the traffic model were estimated applying a growth rate generally consistent with other facilities in the community. Resulting daily traffic volumes for the Adopted Community Plan are depicted in **Figure 6-1**.

To estimate the turning movement volumes at the study intersections, the existing turning movements at each respective study intersection were factored up based on the projected Average Daily Traffic (ADT) volumes along each segment shown in the model plot. Each respective movement was derived using an iterative approach that balances the inflows and outflows for each approach. The input values include the existing turning movement volumes and future year peak-hour approach and departure volumes along each leg of the intersection. The future peak-hour approach volumes would be estimated by applying the existing peak-hour factor (K-factor) and directional distributional percentage (D-factor) to the future ADT volumes along each approach. A more detailed description of the methodology used to forecast turning movement volumes is contained in National Cooperative Highway Research Program (NCHRP) 255 Highway Traffic Data for Urbanized Area Project Planning and Design, Chapter 8. An Excel model computes the forecast turning volumes from existing turning movement volumes and forecasted approach and departure volumes by the techniques described in NCHRP 255. A copy of the NCHRP 255 Report and excel calculation worksheets are included in Appendix H. **Figure 6-2** displays the Horizon Year peak-hour turning movements used in the analysis of Alternative 2.

TABLE 6-1 TRIP GENERATION SUMMARY (ALTERNATIVE 2 - TOTAL)											
		1		AN	/I Peak-H	Iour	F	M Peak-I	Hour		
Land Use	Unit	s	Daily Trips	In	Out	Total	In	Out	Total		
ACTIVE PARK	9.10	acre	398	0	16	16	0	32	32		
ELEMENTARY SCHOOL (stu)	529.00	stu	1,539	286	191	477	117	175	292		
FAST FOOD REST. (ksf)	19.50	ksf	13,675	328	219	547	547	548	1,095		
FIRE OR POLICE STATION	1.00	site	229	31	3	34	3	31	34		
HEAVY INDUSTRY (ksf)	3,490.30	ksf	14,140	1,400	155	1,555	339	1,358	1,697		
INACTIVE USE	10.50	acre	0	0	0	0	0	0	0		
JUNIOR COLLEGE (ksf)	70.00	ksf	1,295	140	15	155	31	73	104		
LIGHT INDUSTRY (ksf)	1,461.70	ksf	23,390	2,316	257	2,573	561	2,246	2,807		
LOW RISE OFFICE(3957)(ksf)	249.50	ksf	3,347	331	37	368	80	322	402		
LOW RISE OFFICE(3982)(ksf)	246.60	ksf	3,327	329	37	366	80	319	399		
LOW RISE OFFICE(3988)(ksf)	31.30	ksf	794	79	8	87	19	76	95		
LOW RISE OFFICE(FT3917)(ksf)	258.50	ksf	3,467	406	45	451	97	388	485		
LOW RISE OFFICE(FT3921)(ksf)	162.90	ksf	2,435	285	32	317	68	273	341		
LOW RISE OFFICE(FT3985)(ksf)	15.70	ksf	414	48	6	54	12	46	58		
LUMBER STORE (mtro)(ksf)	0.00	ksf	0	0	0	0	0	0	0		
MARINA (CCDC)	0.00	acre	0	0	0	0	0	0	0		
MARINE TERMINAL	0.00	acre	0	0	0	0	0	0	0		
MILITARY USE (Gate 9 - site)	0.00	site	0	0	0	0	0	0	0		
MULTI-FAMILY (BL)	61.00	du	373	3	8	11	16	10	26		
MULTI-FAMILY(BL)(over 20DU)	3,602	du	21,747	348	1,392	1,740	1,370	588	1,958		
NEIGHBORHOOD SHOP CNT (ksf)	175.10	ksf	20,813	500	333	833	1,146	1,143	2,289		
OTHER HEALTH CARE (ksf)	112.70	ksf	5,610	269	67	336	168	393	561		
OTHER PUBLIC SERVICE	0.20	acre	58	5	0	5	2	5	7		
OTHER TRANSPORTATION	5.10	acre	433	42	19	61	19	46	65		
PARKING	0.50	cre	0	0	0	0	0	0	0		
RAIL STATION (BL)	0.60	acre	181	18	7	25	8	19	27		
REGIONAL COMM.(Mtro)(ksf)	0.00	ksf	0	0	0	0	0	0	0		
SINGLE FAMILY (BL)	56	du	493	8	30	38	35	15	50		
SPECIALTY COMM.(mtro)(ksf)	0.00	ksf	0	0	0	0	0	0	0		
STREETFRONT COMMERCIAL (ksf)	843.80	ksf	33,813	608	405	1,013	1,523	1,519	3,042		
WAREHOUSING (ksf)	90.60	ksf	459	48	21	69	29	44	73		
WHOLESALE TRADE	0.00	acre	0	0	0	0	0	0	0		
Total 152,430 7,828 3,303 11,131 6,270 9,669 15,939											

 I. du = Dwelling Unit; stu = stuuents, ssi - i nousanu square

 K:SND_TPT0/095707000/Excel[707000TG.xlsm]Alt 2 Totals (LU)



Barrio Logan Co	mmunity Plan	Update					
5 138 /81 ⇔ 270 /510 ∞ 43 /36 16th St	 № 112 / 119 ⇔ 299 / 493 ☆ 23 / 0 Commercial St 	2 36 /25 ⇒ 36 /25 ⇒ 65 /125 16th St	∾ 34 / 25 ⇔ 495 / 458 ☆ 3 / 3 National Ave	 5 60 / 40 ⇔ 40 / 23 ∞ 16 / 6 Sigsbee St 	∾ 36 / 28 ⇔ 377 / 254 ∞ 19 / 9 National Ave	 8 17 /8 2 79 /38 ∞ 33 /16 Sigsbee St 	 51 / 23 ⇔ 80 / 50 ≥ 15 / 9 Newton Ave
17 / 68	15 /25 ≈ 360 /700 ⇔ 18 /28 ∿	40/91 ⊘ 194/347 ⇔ 40/31 ∿	40 /61 ≈ 34 /41 ⇔ 12 /7 ≌	11 / 35	65 /78 a 26 /58 a 58 /13 a	6/9 ở 48/50 ⇔ 19/29 ∿	24 /20 & 111 /91 & 34 /12 &
5 3 / 2 ⇔ 96 / 60 ⊠ 31 / 20 Sigsbee St	∾ 61/31 ⇔ 8/0 ∞ 31/38 Main St	 3. 100 / 70 2. 100 / 90 3igsbee St 	∾ 20 / 100 ⇔ 1650 / 750 Harbor Dr	 A7 / 39 A7 / 39 233 / 109 256 / 272 258 off:Ramp 	⇔ 209 / 160 ஜ 88 / 40 Logan Ave	8 23 / 11	 is 66 / 77 is 432 / 358 is 239 / 113 National Ave
3/4 ⊘ 8/2 ⇔ 6/13 ∿	5 / 0 2 97 / 98 5 24 / 12 2	60 / 160		175/532 ⇔ 5 24/70 ∿ 9 8 8	30 / 56 2 69 / 123 2	8/19	4/9 2 30/43 5 50/132 2
6 41 /12 ⇔ 156 /94 ∞ 56 /46 Beardstey St	© 15 / 19 ⇔ 82 / 93 ⊉ 29 / 13 Newton Ave	0 8 52 /17 8 57 /39 8 275 /144 Beardslay St	is 76 / 79 ⇔ 109 / 33 2 163 / 78 Main St	20 /30 /30 /30 /30 /86ardsley St	∿ 30 / 20 ⇔ 1580 / 820 Harbor Dr	23 353 / 34 / 44	 5. 205 / 167 ⇔ 278 / 173 ☆ 615 / 517 Kearney Ave
18 / 7	13./5 ∞ 23./71 ⇔ 19./37 ≌	15/22 <i>a</i> 74/64 ⇒ 4/4 ⊗	2 /0 ≈ 8 /25 ⇔ 52 /109 ≈	22 / 95			257 / 383 & 259 / 343 &





NOT TO SCALE

FIGURE 6-2

Barrio Logan Co	mmunity Plan	Update				
20 / 51 / 51 / 51 / 51 / 51 / 51 / 51 / 5	 № 76 / 90 ⇔ 350 / 350 ∞ 100 / 100 Logan Ave 	№ 310 / 410 № ⇔ 765 / 550 € 60 / 120 ∞ 66 of / 120 € € PKwy PKwy №	 № 110 / 275 ⇔ 350 / 270 № 120 / 110 National Ave 	15 150 / 60 09 / 120 52 / 610 ∞ 825 / 610 ∞ 100 / 170 ∞ 00 / 170 ∞ 00 / 170 ∞ 00 / 100 ∞ 00 / 100 ∞ 00 / 100 ∞ 00 / 100 ∞ 00 / 100 ∞ 00 / 100 00 Newton Ave	2 2 2 2 2 2 2 2 2 2 2 2 2 2	 № 190 / 270 ⇔ 350 / 250 ∞ 70 / 70 Main St
140 / 130	100 /140 2 300 /506 7 300 /700 2	190 / 300	100 /120	80 / 120	150 / 120	85 / 85 240 / 140 240 / 140 240 / 140 240 / 140 240 240 240 240 240 240 240 240 240 2
 510 / 314 8 510 / 314 2 8 3 / 30 2 77 / 33 Cesar Chavez Pkwy 	 № 99 / 43 ⇔ 1056 / 467 2 80 / 30 Harbor Dr 	18 due you wanted a standard a Standard a standard a st	∾ 80 / 69 ⇔ 125 / 156 Logan Ave	19 667 / 67 67 / 67 67 67 / 67 67 67 / 67 67 67 67 67 67 67 67 67 67 67 67 67 6	8 28/70 0 ⇔ 18/23 ∞ 9/45 Evans St	 № 28 / 24 ⇔ 225 / 191 ☆ 38 / 34 National Ave
109 / 590	10 / 50 2 14 / 63 5 27 / 35 2	475 / 891 ⊘ 182 / 523 ⇔ m 2 / 8 ∾ 40 ¥e	0/11 5 2/2 U 2/3 2	126 / 302 ⇔	16 / 35	27 / 12 % 48 / 18 % 25 / 62 %
5 37 /21	s 30 / 27 ⇔ 63 / 70 ⊉ 16 / 27 Newton Ave	52 34 / 9 د 66 / 85 Evans St	∿ 75 / 68 ⇔ 427 / 284 Main St	23 52 52 52 52 52 52 52 52 52 52	54 121 / 109 5 121 / 32 6 124 / 98 6 123 / 33 5 6 7 7 5 7 5 5 5 5 5 5 5 7 5 7 <	s 106 / 105 ⇔ 101 / 70 ⊉ 48 / 21 National Ave
23 / 24	27 /7 ~ 58 /47 ⁻ 31 /28 ⁻	24 / 6		212 212 0 0 0 0 101 / 101 0 0 0 0 0 366 (4443 0 0 0 101 / 101 366 (4443 0 0 0 0 174 / 124 0 0 0 0	78 / 166	7 /13 ⊘ 107 /208 ⇔ 16 /30 ⊗



The northbounf right-turn volumes for Logan Avenue/SR-75 and Cesar Chavez Parkway intersection include the vehicles turning north from Cesar Chavez Parkway using the free northbound right-turn lane. The intersection analysis did not include a reduction for these volumes.

Legend X / Y = AM / PM PEAK HOUR TURNING VOLUMES

Horizon Year (2030) Peak-Hour Volumes (Alternative 2) (cont.)





FIGURE 6-2.1

K:\SND_TPTO\095707000\Excel\[707000TA01.xlsx]Turn 32 Adj-Model2 Figure 13-24

Barrio Logan Co	mmunity Plan	Update				
5 39 /21 ⇔ 113 /76 ∞ 20 /21 Sampson St	∾ 37 / 33 ⇔ 79 / 73 ☆ 15 / 0 Newton Ave	205 / 105 ⇔ 59 / 27 ∞ 10 / 8 Sampson St	∾ 16 / 8 ⇔ 282 / 113 ஜ 53 / 27 Main St	27 99/ 25 99/ 26 20/ 27 20/ 26 20/ 26 20/ 26 20/ 26 20/ 26 20/ 26 20/ 26 20/ 26 20/ 26 20/ 27 20/ 26 20/ 26 20/ 27 20/ 26 20/ 26 20/ 26 20/ 26 20/ 27 20/ 26 20/ 27 20/ 26 20/ 27 20/ 26 20/ 27 20/ 26 20/ 26 20/ 27 20/ 27 20/ 26 20/ 27 20/ 27 20/ 27 20/ 26 20/ 27 20/ 26 20/ 27 20/ 27 20/ 26 20/ 27 20/ 20/ 20 20/ 20/ 20/ 20 20/ 20/ 20/ 20/ 20/ 20/ 20/ 20/ 20/ 20/	25 37 /42 ⇔ 39 /17 ∞ 4 /4 Sicard St	∾ 3 / 1 ⇔ 164 / 125 ∞ 27 / 8 National Ave
23 / 35 Ø 92 / 117 ↔ 17 / 24 S	7 /13	81 / 134	52 /63 & 31 /46 ⁽¹⁾ 35 /49 ⁽²⁾	10 / 56	20 / 41	48 / 34 2 49 / 45 5 12 / 17 2
29 8 15 / 20 8 45 / 80 8 25 0 / 91 26th St 26th St	∾ 48 / 54 ⇔ 222 / 123 ⊉ 36 / 35 National Ave	30	 ⇔ 279 / 239 ₂ 42 / 31 National Ave 	31 ∞ + + + + + + + + + + + + + + + + + + +	25 / 169 / 80 ⇒ 25 / 10 ⇒ 12 / 16 Schey St	∾ 17 / 39 ⇔ 1473 / 558 Harbor Dr
26 / 35	31 / 54 2 55 / 68 4 15 / 34 2	151/373 ⇔ terr 7/14 ∿ 50 88 94	28 / 37 28 149 / 296 23	11/14	126 / 208	
8 307 /102 8 213 /210 8 118 /195 28th St	 № 126 / 241 ⇔ 599 / 406 ☆ 186 / 448 National Ave 	24 380 /500 /350 /350	ıs 130 / 80 ⇔ 80 / 70 ⊉ 50 / 70 Boston Ave	35 0600000000000000000000000000000000000	22/13 ⇔ 15/12 ∞ 339/480 28th St	 № 115 / 255 ⇔ 843 / 491 ☆ 18 / 18 Harbor Dr
106 / 94	33 / 18 ∞ 102 / 98 ⇔ 82 / 163 ∞	250 / 350	90 / 50	190 / 270	120/300 ⊘ 580/1120 ⇔ 4/2 ∿	0/10 % 6/133 7 2/0 %



<u>Legend</u> X / Y = AM / PM PEAK HOUR TURNING VOLUMES





FIGURE 6-2.2

Barrio Loga	an Co	mmunity Plan	Update					
37	29th St	 is 96 / 132 ⇔ 107 / 86 ≥ 20 / 20 Boston Ave 	85 41 /68 ⇔ 83 /61 ∞ 44 /148 32nd St	 № 100 / 132 ⇔ 548 / 407 ☆ 314 / 207 Main St 	39 80 (2000) 80 (20	10 ¹ / ₁ , 50 / 205 0 51 / 50 / 205 0 5		 № 390 / 460 ⇔ 756 / 434 ☆ 300 / 40 Harbor Dr
104 / 151	ଅ ⇔ ଅ	6 /10	36 / 63 ⊘ 153 / 733 ⇒ 200 / 139 ∿	110 /193	65 / 115 2 25 / 115 2 170 / 80 5 80 /130 S	70/140 5 215/360 0 125/760 0 290/240 0	140 / 340	30 /70 2 160 /690 4 30 /140 2
	⊿ 108 / 120 I-15 Ramps	s, 107 / 154 ⇔ 516 / 373 Main St						
	Ø ⇔							





FIGURE 6-2.3

Horizon Year (2030) Peak-Hour Volumes (Alternative 2) (cont.)

Intersection Analysis

Table 6-2 displays the LOS analysis results for the study intersections under Horizon Year with the Barrio Logan Community Plan Update conditions for Alternative 2 scenario. As shown in the table, all intersections would operate at LOS D or better during both peak-hour periods, with the exception of the following sixteen intersections:

- National Avenue and 16th Street (LOS F during both peak-hour periods);
- Harbor Drive and Sigsbee Street (LOS F during both peak-hour periods);
- Logan Avenue and Beardsley Street/I-5 SB off-ramp (LOS F during the afternoon peak-hour period);
- National Avenue and Beardsley Street (LOS E and LOS F in the morning and afternoon peakhour periods, respectively);
- Harbor Drive and Beardsley Street (LOS F during both peak-hour periods);
- Logan Avenue and Cesar Chavez Parkway (LOS E in the afternoon peak-hour period);
- Harbor Drive and Cesar Chavez Parkway (LOS F both peak-hour periods);
- Logan Avenue and Sampson Street (LOS F during both peak-hour periods);
- Harbor Drive and Schley Street (LOS F in the morning peak-hour period);
- National Avenue and 28th Street (LOS E both peak-hour periods);
- Boston Avenue and 28th Street (LOS E in the afternoon peak-hour period);
- Harbor Drive and 28th Street (LOS F in the afternoon peak-hour period);
- Boston Avenue and I-5 Southbound On-ramp (LOS F in the afternoon peak-hour period);
- 32nd Street and Wabash Street (LOS F during both peak-hour periods); and
- Harbor Drive and 32nd Street (LOS F during both peak-hour periods).

The Barrio Logan Community Plan Update Alternative 2 is considered to have a cumulative traffic related impact at all fifteen intersections listed above.

Appendix D contains the LOS calculation worksheets.

Interfactor (a) (a) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b		TABLE 6-2 HORIZON YEAR (2030) CONDITIONS ALTERNATIVE 2 PEAK-HOUR INTERSECTION LOS SUMMARY											
1 Commercial St & 16th St Signal AM 19.4 B 12.8 B -6.6 NO 2 National Ave & 16th St Two-Way Stop AM 1.17 B 5.11 (NB) F 4.1.4 VES 3 National Ave & 16th St Two-Way Stop AM 0.5 B 22.5 (SB) F 21.34 VES 3 National Ave & Sigblee St Signal AM 0.5 A 8.2 A 0.4 Not 5 Main St & Sigblee St All-Way Stop AM 7.5 A 8.8 A 0.9 NO 6 Harbor Dr & Sigblee St All-Way Stop AM 7.4 A 7.8 A 0.4 NO 7 Logan Ave & Beardsley St-1.5 SB ramp All-Way Stop AM 7.10 CC ECL (SB) F VES 7 Logan Ave & Beardsley St All-Way Stop AM 8.5 A 42.4 E <td< th=""><th></th><th></th><th></th><th></th><th>EXIS</th><th>TING</th><th>ALTER</th><th>NATI</th><th>VE 2</th><th></th><th></th></td<>					EXIS	TING	ALTER	NATI	VE 2				
I Commercial S & Ioh St Signal PM 24.6 C 31.2 C 6.6 No 2 National Ave & Ioh St Two-Way Stop AM 11.7 B 23.1 (NB) F 41.4 YES 3 National Ave & Sigsbee St Signal AM 9.6 A 7.3 A -2.3 No 4 Newton Ave & Sigsbee St All-Way Stop PM 9.6 A 7.3 A A 0.9 No 5 Main St & Sigsbee St All-Way Stop PM 7.4 A 8.0 A 0.4 No 6 Harbor Dr & Sigsbee St One-Way Stop AM 7.4 A 7.8 0.4 0.4 No 7 Logan Ave & Beandsley St-15 SB ramp All-Way Stop AM 17.0 C ECL (SB) F YES 8 National Ave & Beandsley St-15 SB ramp All-Way Stop AM 8.5 A 90.7 CB)		INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	DELAY (a)	LOS (b)	DELAY (a)		LOS (b)	Δ (c)	SIGNIFICANT?		
Image: book of the section of the sectin of the sectin of the section of the section of the section of	1	Commencial St. 8, 16th St.	£:1	AM	19.4	В	12.8		В	-6.6	NO		
1 National Ave & Eighb St Two-Way Stop PM 12.5 B 225.9 (BB) F 213.4 TPSS 3 National Ave & Siguble St Signal AM 9.6 A 4.2 A -1.4 NO 4 Netton Ave & Siguble St All-Way Stop PM 9.6 A 7.3 A -2.3 NO 5 Main St & Siguble St All-Way Stop PM 7.4 A 8.8 A 0.9 NO 6 Harbor Dr. & Siguble St All-Way Stop PM 7.4 A 8.1 A 0.7 NO 7 Jagan Ave & Siguble St All-Way Stop PM 7.4 A 8.1 A 0.7 NO NO <td< td=""><td>1</td><td>Commercial St & 16th St</td><td>Signai</td><td>PM</td><td>24.6</td><td>С</td><td>31.2</td><td></td><td>С</td><td>6.6</td><td>NO</td></td<>	1	Commercial St & 16th St	Signai	PM	24.6	С	31.2		С	6.6	NO		
	2	National Ava & 16th St	Two Way Stop	AM	11.7	В	53.1 (1	NB)	F	41.4	YES		
National Ave & Signber St Signal PM 9.6 A 7.3 A 2.3 No 4 Newton Ave & Signber St All-Way Stop AM 7.9 A 8.8 A 0.0 NO 5 Main St & Signber St All-Way Stop PM 7.6 A 8.8 A 0.0 NO 6 Harbor Dr & Signber St All-Way Stop PM 7.4 A 8.1 A 0.7 NO 7 Logan Ave & Beardsley St-15 SB ramp One-Way Stop AM 11.0 C ECL (SB) F YES 8 National Ave & Beardsley St All-Way Stop AM 11.1 B 90.7 (EB) F YES 9 Newton Ave & Beardsley St All-Way Stop AM 8.5 A 9.4 A 0.9 NO 10 Main St & Beardsley St All-Way Stop AM 8.5 A 9.5 C 7.0 NO <t< td=""><td>2</td><td>National Ave & Totil St</td><td>1 wo-way stop</td><td>PM</td><td>12.5</td><td>В</td><td>225.9 (3</td><td>SB)</td><td>F</td><td>213.4</td><td>YES</td></t<>	2	National Ave & Totil St	1 wo-way stop	PM	12.5	В	225.9 (3	SB)	F	213.4	YES		
Image: book of the section of the sectin of the sectin of the section of the section of the section of	3	National Ava & Sigshaa St	Signal	AM	9.6	А	8.2		А	-1.4	NO		
4 Newton Ave & Sigsbec St All-Way Stop PM 7.6 A 8.0 A 0.4 No 5 Main St & Sigsbec St All-Way Stop PM 7.4 A 8.0 A 0.4 No 6 Harbor Dr & Sigsbec St One-Way Stop AM 17.0 C ECL (SB) F VESS 7 Logan Ave & Beardsley St-L5 SB ramp All-Way Stop AM 11.1 B 34.8 D 23.7 NOU 8 National Ave & Beardsley St All-Way Stop AM 11.1 B 34.8 D 23.7 NOU 9 Newton Ave & Beardsley St All-Way Stop AM 8.5 A 42.4 EB 33.9 YES 9 Newton Ave & Beardsley St All-Way Stop AM 8.5 A 131.5 (EB) F 12.8 YES 9 Newton Ave & Beardsley St All-Way Stop AM 8.5 A 9.5 A 17.	5	National Ave & Sigsbee St	Sigilai	PM	9.6	А	7.3		А	-2.3	NO		
Image: book of the stand of the st	4	Newton Ave & Sigshee St	All-Way Stop	AM	7.9	А	8.8		А	0.9	NO		
5 Main Sit & Sigsbee Si All-Way Stop PM 7.4 A 7.8 A 0.4 No 6 Harbor Dr & Sigsbee Si One-Way Stop AM 17.0 C ECL GB F YES 7 Logan Ave & Beardsley Si -1-5 SB ramp All-Way Stop AM 11.1 B 34.8 D 23.7 NO 8 National Ave & Beardsley Si All-Way Stop AM 8.5 A 4.4.4 E 30.9 YES 9 Newton Ave & Beardsley St All-Way Stop AM 8.5 A 4.2.4 EB 33.9 YES 9 Newton Ave & Beardsley St All-Way Stop AM 8.5 A 4.2.4 EB 30.9 YES 10 Main St & Beardsley St All-Way Stop AM 8.2 A 8.5 A 13.1.5 CE 7.0 NO 11 Harbor Dr & Beardsley St All-Way Stop AM 20.3 CC 14.7.1	-	Newton Ave & Sigsbee St	All-Way Stop	PM	7.6	А	8.0		А	0.4	NO		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	5	Main St & Sigshee St	All-Way Stop	AM	7.4	Α	8.1		А	0.7	NO		
6 Harbor Dr & Sigsbe St One-Way Stop PM 18,1 C ECL (SB) F YES 7 Logan Ave & Beardsley St-1-5 SB ramp All-Way Stop PM 11.1 B 34.8 DD 23.7 No 8 National Ave & Beardsley St All-Way Stop PM 8.5 A 42.4 E 33.9 YES 9 National Ave & Beardsley St All-Way Stop PM 8.5 A 42.4 E 33.9 YES 9 Newton Ave & Beardsley St All-Way Stop PM 8.5 A 42.4 E 33.9 YES 10 Main St & Beardsley St All-Way Stop PM 8.5 A 15.5 CC 7.0 NO 11 Harbor Dr & Beardsley St All-Way Stop PM 7.8 A 9.5 A 1.7 NO 12 Kearney St & Cesar E. Chavez Pkwy Signal PM 13.0 B 31.6 D 14.2	5		An-way stop	PM	7.4	А	7.8		А	0.4	NO		
Index PM 18.1 C ECL GB F VFS 7 Logan Ave & Beardsley St-15 SB ramp All-Way Stop PM 11.1 B 34.8 D 23.7 NO 8 National Ave & Beardsley St All-Way Stop PM 8.7 A 42.4 E 33.9 VFES 9 Newton Ave & Beardsley St All-Way Stop AM 8.5 A 9.4 A 0.9 NO 0 Main St & Beardsley St All-Way Stop AM 8.5 A 9.4 A 0.9 NO 10 Main St & Beardsley St All-Way Stop PM 8.2 A 8.6 A 0.4 NO NO 11 Harbor Dr & Beardsley St One-Way Stop PM 7.8 A 9.5 A 1.7 NO 12 Kearney St & Cesar E. Chavez Pkwy Signal AM 21.2 C 35.4 DD 14.2 NO 12	6	Harbor Dr. & Sigshee St	One-Way Stop	AM	17.0	С	ECL (S	SB)	F		YES		
7 Legan Ave & Beardsley St. 1-5 SB ramp All-Way Stop PM 11.9 B 90.7 (EB) F 78.8 YES 8 National Ave & Beardsley St All-Way Stop AM 8.5 A 42.4 E 33.9 YES 9 Newton Ave & Beardsley St All-Way Stop AM 8.5 A 9.4 A 0.9 NO 0 Main St & Beardsley St All-Way Stop AM 8.5 A 9.4 A 0.9 NO 10 Main St & Beardsley St All-Way Stop PM 8.2 A 8.6 A 0.4 NO 11 Harbor Dr & Beardsley St One-Way Stop PM 7.8 A 9.5 AA 1.7 NO 12 Kearney St & Cesar E. Chavez Pkwy Signal PM 21.2 C 31.4 D 14.2 NO 13 Logan Ave & Cesar E. Chavez Pkwy Signal PM 14.0 B 31.8 C 17.8	0		One-way stop	PM	18.1	С	ECL (S	SB)	F		YES		
	7	Logan Ave & Beardeley St. 1-5 SB ramp	All-Way Stop	AM	11.1	В	34.8		D	23.7	NO		
8 National Ave & Beardsley St All-Way Stop PM 8.7 A 131.5 (EB) F 122.8 YES 9 Newton Ave & Beardsley St All-Way Stop AM 8.5 AA 9.4 AA 0.9 NO 10 Main St & Beardsley St All-Way Stop AM 8.5 A 9.4 A 0.0 NO 11 Harbor Dr & Beardsley St All-Way Stop AM 20.3 CC 147.1 (SB) F 126.8 YES 12 Kearney St & Cesar E. Chavez Pkwy One-Way Stop AM 20.3 CC 147.1 (SB) F 126.8 YES 13 Logan Ave & Cesar E. Chavez Pkwy Signal AM 21.2 CC 35.4 D 142.2 NO 14 National Ave & Cesar E. Chavez Pkwy Signal AM 14.0 B 34.6 C 17.8 NO 14 National Ave & Cesar E. Chavez Pkwy Signal AM 14.0 B	/	Logan Ave & Beardsley St- 1-5 SB ramp	All-way Stop	PM	11.9	В	90.7 (1	EB)	F	78.8	YES		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	0	National Ava & Boardslav St	All Way Stop	AM	8.5	А	42.4		E	33.9	YES		
9 Newton Ave & Beardsley St All-Way Stop PM 8.2 A 8.6 A 0.4 NO 10 Main St & Beardsley St All-Way Stop AM 8.5 A 15.5 C 7.0 NO 11 Harbor Dr & Beardsley St One-Way Stop AM 2.03 CC 147.1 (SB) F 1268 YES 12 Kearney St & Cesar E. Chavez Pkwy Signal AM 21.7 C 51.6 D 22.9 NO 13 Logan Ave & Cesar E. Chavez Pkwy Signal AM 21.2 C 35.4 D 14.2 NO 14 National Ave & Cesar E. Chavez Pkwy Signal AM 11.0 B 34.6 C 23.6 NO 15 Newton Ave & Cesar E. Chavez Pkwy Signal AM 11.0 B 34.6 C 23.6 NO 16 Main St & Cesar E. Chavez Pkwy Signal AM 9.1 A 16.0 B 6.9	0	Ivational Ave & Bealdsley St	All-way Stop	PM	8.7	А	131.5 (I	EB)	F	122.8	YES		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	0	Newton Ave & Beardsley St	All-Way Stop	AM	8.5	А	9.4		А	0.9	NO		
10 Main St & Beardsley St All-Way Stop PM 7.8 A 9.5 A 1.7 NO 11 Harbor Dr & Beardsley St One-Way Stop AM 20.3 C 147.1 (SB) F 126.8 YES 12 Kearney St & Cesar E. Chavez Pkwy Signal PM 18.3 C 50.6 F 32.3 YES 13 Logan Ave & Cesar E. Chavez Pkwy Signal PM 21.2 C 35.4 D 14.2 NO 14 National Ave & Cesar E. Chavez Pkwy Signal AM 14.0 B 31.8 C 17.8 NO 14 National Ave & Cesar E. Chavez Pkwy Signal AM 14.0 B 32.5 D 38.5 NO 15 Newton Ave & Cesar E. Chavez Pkwy Signal AM 8.1 A 9.4 A 1.3 NO 16 Main St & Cesar E. Chavez Pkwy Signal AM 9.1 A 16.0 B 6.9		Newton Ave & Deardsley St	All-way Stop	PM	8.2	А	8.6		А	0.4	NO		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	10	Main St & Beardsley St	All-Way Stop	AM	8.5	А	15.5		С	7.0	NO		
11 Harbor Dr & Beardsley St One-Way Stop PM 18.3 C 50.6 F 32.3 YES 12 Kearney St & Cesar E. Chavez Pkwy Signal AM 21.7 C 51.6 D 29.9 NO 13 Logan Ave & Cesar E. Chavez Pkwy Signal AM 21.2 C 35.4 D 14.2 NO 13 Logan Ave & Cesar E. Chavez Pkwy Signal AM 14.0 B 31.8 C 17.8 NO 14 National Ave & Cesar E. Chavez Pkwy Signal AM 11.0 B 34.6 C 23.6 NO 15 Newton Ave & Cesar E. Chavez Pkwy Signal AM 8.1 A 9.4 A 1.3 NO 16 Main St & Cesar E. Chavez Pkwy Signal PM 9.1 A 16.0 B 6.9 NO 17 Harbor Dr & Cesar E. Chavez Pkwy Signal PM 8.7 A 52.0 D 38.9 NO	10	Main St & Deardsley St	All-way Stop	PM	7.8	Α	9.5		А	1.7	NO		
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$ \begin{array}{ c c c c c c c c } \hline 14 & National Ave & Cesar E. Chavez Pkwy & Signal & PM & 14.0 & B & 52.5 & D & 38.5 & NO \\ \hline 15 & Newton Ave & Cesar E. Chavez Pkwy & Signal & AM & 8.1 & A & 9.4 & A & 1.3 & NO \\ \hline 16 & Main St & Cesar E. Chavez Pkwy & Signal & AM & 9.6 & A & 48.5 & D & 38.9 & NO \\ \hline 16 & Main St & Cesar E. Chavez Pkwy & Signal & AM & 9.6 & A & 48.5 & D & 38.9 & NO \\ \hline 17 & Harbor Dr & Cesar E. Chavez Pkwy & Signal & AM & 33.2 & C & 118.8 & F & 85.6 & YES \\ \hline 18 & Logan Ave & I-5 SB On-ramp & One-Way Stop & AM & 8.8 & A & 9.3 & A & 0.5 & NO \\ \hline 19 & National Ave & SR-75 Off-ramp & One-Way Stop & AM & 10.1 & B & 13.1 & B & 3.0 & NO \\ \hline 10 & National Ave & Fwan St & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 10 & National Ave & Fwan St & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 10 & National Ave & Fwan St & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 11 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 11 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 11 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 11 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 11 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 11 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 12 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 13 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 14 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 14 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 14 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 14 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 14 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 14 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 14 & Two-Way Stop & Two-Way Stop & AM & 11.2 & B & 14.4 & B & 3.2 & NO \\ \hline 14 & Two-Way S$	15	Eogun Ave & Cesar E. Chavez I kwy	Signai								YES		
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Notes: **Bold** values indicate intersections operating at LOS E or F. (a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement. (b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0

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E PM 11.5 B 11.6 B 01 NO	41	Main St & I-15 Ramps	Signal							
Notes:		L	č	PM	11.5	В	11.6	В	0.1	NO

Notes: **Bold** values indicate intersections operating at LOS E or F. (a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement. (b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0 (c) The intersection may not operate as well as indicated due to potential queuing. See text of the report for additional explanation.

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Roadway Segment Analysis

Table 6-3 displays the roadway segment analysis under the Horizon Year (2030) conditions for the Alternative 2 scenario. As shown in the table, based on planning level analysis and on ADT volumes, the Alternative 2 scenario would be considered having a cumulative roadway segment impact along the following roadway segments:

- Cesar Chavez Parkway between Logan Avenue and National Avenue (LOS E);
- Cesar Chavez Parkway between National Avenue and Newton Avenue (LOS F);
- Cesar Chavez Parkway between Newton Avenue and Main Street (LOS E);
- Sampson Street between National Avenue and Harbor Drive (LOS F):
- 26th Street between National Avenue and Main Street (LOS F);
- 28th Street between I-5 and Boston Avenue (LOS F):
- 32nd Street between Main Street and Wabash Boulevard (LOS E);
- Vesta Street between Main Street and I-5 Ramps (LOS E);
- Logan Avenue between Sigsbee Street and Cesar Chavez Parkway (LOS F):
- National Avenue between 16th Street and Sigsbee Street (LOS E); .
- National Avenue between Sigsbee Street and Beardsley Street (LOS E);
- National Avenue between Beardsley Street and Cesar Chavez Parkway (LOS F);
- National Avenue between Cesar Chavez Parkway and Evans Street (LOS F);
- National Avenue between Sicard Street and 27th Street (LOS F);
- Boston Avenue between 28th Street and 29th Street (LOS F);
- Boston Avenue between 29th Street and 32nd Street (LOS F);
- Main Street between Cesar Chavez Parkway and Evans Street (LOS F);
- Main Street between Evans Street and 26th Street (LOS F);
- Main Street between 26th Street and 28th Street (LOS F); Main Street between 28th Street and 29th Street (LOS F);
- •
- Main Street between 29th Street and 32nd Street (LOS F);
- Main Street between 32nd Street and Rigel Street (LOS F);
- Main Street between Rigel Street and Una Street (LOS F); and
- Main Street between Una Street and I-5 SB Off-ramp (LOS F).

Freeway Segment Analysis

Table 6-4 displays the freeway segments analysis under the Horizon Year (2030) conditions for the Alternative 2 scenario. As shown in the table, the Alternative 2 scenario would have a cumulative traffic related impact along the following freeway segments:

- I-5 from J Street to SR-75 Junction (LOS F and LOS E for the morning and afternoon peak-hour periods, respectively);
- I-5 from SR-75 Junction to 28th Street (LOS F and LOS E for the morning and afternoon peak-. hour periods, respectively);
- I-5 from 28th Street to I-15 Interchange (LOS E during the morning peak-hour periods);
- I-5 from I-15 Interchange to Division Street (LOS F both peak-hour periods); and
- I-15 from I-5 Interchange to Ocean View Boulevard (LOS F during the afternoon peak-hour period)

metro matro metro	(9) NOLLY JEESSY LJ AVMUVOG										
International Internat	NUMBER OF ADDITION (4)	HIGHEST ACCEPTABLE LOS D VOLUME	LOS E CAPACITY	EXISI ADT	TNG CONDIT V/C RATIO (b)	IONS	YEAR 2 ADT	330 (ALTERNA V/C RATIO (b)	(TIVE 2) LOS		SIGNIFICAN
Classification Discription State State </th <th></th> <th>-</th> <th></th> <th></th> <th>-</th> <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th>		-			-					-	
Internationality of the interna	3 Lane Collector (with TWLT)	18,750	22,500	14,170	0.630	C	15,800	0.702	D	0.072	NO
contactorization transformed and trans	4 Lane Collector (with TWLT)	25,000	30,000	15,300	0.510	υ (26,200	0.873	E	0.363	YES
Matrix and structures Jame	3 Lane Collector (with TWI T)	16,750	005 00	11 812	2020	ן כ	20,100	0.01.1	I I		VEC
One of the control of the co	4 I ane Collector (with TWI T)	02/001 25 000	30.000	10,381	0.346	ء ر	12 700	0.202	а и	0.077	CT ON
1 bar		000,67	000,02	100,01		4	001/21	1	4	110-0	
Observation Interfactory Interfactory </td <td>2 Lane Collector (No TWLT)</td> <td>6,500</td> <td>8,000</td> <td>3,086</td> <td>0.386</td> <td>в</td> <td>5,700</td> <td>0.713</td> <td>D</td> <td>0.327</td> <td>ON</td>	2 Lane Collector (No TWLT)	6,500	8,000	3,086	0.386	в	5,700	0.713	D	0.327	ON
Manual standing June Colume (NeT VET) Gain June	2 Lane Collector (No TWLT)	6,500	8,000	2,561	0.320	в	8,700	1.088	F	0.768	YES
Media meratalina Jaac charm (NTG) Color No A <											
Old statistication Jane Observation Jane Observatio	2 Lane Collector (No TWLT)	6,500	8,000	2,380	0.298	A	8,300	1.038	F	0.740	YES
Other and Mandel And		-			-					-	
Internationality Intercentant Mathy Same Col Same Sam	3 Lane Collector (with TWLT)	18,750	22,500	22,000	0.978	E	36,600	1.627	F	0.649	YES
Atmack and the form 1 are oblic obtained 3 and 4 and 3 and 5 and	4 Lane Collector (with TWLT)	25,000	30,000	18,856	0.629	С	24,300	0.810	D	0.181	ON
Biology and stal Junits June Challower's (MJ) Guid Light Light <thlight< th=""></thlight<>	4 Lane Major Arterial	35,000	40,000	16,658	0.416	В	23,700	0.593	С	0.177	NO
Ibord and thanks Ibord and thanks <thibord and="" th="" thanks<=""> <thibord and="" t<="" td="" thanks<=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td></thibord></thibord>										_	
(Mark and Yahadi Ihai) (Jaac Caleen volt YYL) (Jao) (Jao) (Jac)	2 Lane Collector (No TWLT)	6,500	8,000	1,500	0.188	А	5,800	0.725	D	0.538	ON
outon statistical statisticon statis statistical statistical statistical statistical statis	0.1 and Collector (with TWI T)	13 000	15 000	12 170	0.070	P	14 100	0.040	F	0.067	VEC
Mind Stand 15 Jane Calleeo NG VPUT) G.200 L023 G.31 A L040 D15 A G.010 Mind Stand 15 Jane Calleeo NG VPUT) G.200 L023 C <thc< th=""> <thc< th=""> C <</thc<></thc<>	4 I ane Maior Arterial	35,000	40.000	19 785	0.495	a m	26,700	0.668	a ر	0.173	CT ON
Number set 15 Jane Calebray Cer TWTJ Galo Stord Jord I. Jane Jane Aller Stard JS 2. Jane Calebray Cer TWTJ 6.00 5.00 1.00 C 6.00 0.01 D 0.01 D 0.01 Aller Stard Stard JS 2. Jane Calebray Cer TWTJ 1.300 15.00 15.00 1.00 C 0.00 1.00 0.01 D D 0.01 D <tdd< td=""> D <tdd< td=""> <tdd< td=""><td>min n / mint ann +</td><td>000,00</td><td></td><td>10167</td><td>0010</td><td>h</td><td>20,100</td><td>00000</td><td>></td><td>6/110</td><td></td></tdd<></tdd<></tdd<>	min n / mint ann +	000,00		10167	0010	h	20,100	00000	>	6/110	
Alian and 15 21are Calcore (%) (W1) 4.00 5.00 4.00 6.03 C 6.00 6.23 F 0.123 act 1 P8 and Sighes Si 2 1are Calcore (%) (W1) 1.000 15.00 2.04 0.24 0.29 0.23 10 0.73 <	2 Lane Collector (No TWLT)	6,500	8,000	1,723	0.215	A	1,400	0.175	A	-0.040	ON
Main Stand 15 Ztane Chieve (w) WU,1 560 600 601 C 600 053 E 021 a A C		-		-		-					
a lange differencies in the second method me	2 Lane Collector (No TWLT)	6,500	8,000	4,900	0.613	С	6,600	0.825	Е	0.212	YES
Index of solution by the interval of a constrained by the interval of a cons										_	
Signal stand	2 Lane Collector (with TWLT)	13,000	15,000	3,659	0.244	А	10,800	0.720	D	0.476	ON
Construction of all of the structure of why in the stru	2 Lane Collector (with TWLT)	13,000	15,000	7,478	0.499	C	17,000	1.133	F	0.634	YES
Ant Ant <td>2 Lane Collector (with TWLT)</td> <td>13,000</td> <td>15,000</td> <td>2,954</td> <td>0.197</td> <td>A</td> <td>6,000</td> <td>0.400</td> <td>В</td> <td>0.203</td> <td>NO</td>	2 Lane Collector (with TWLT)	13,000	15,000	2,954	0.197	A	6,000	0.400	В	0.203	NO
In the standing betwee									1		
Newfores hard Steards J. Jame Collector (NVLT) (500 (500 (510)	2 Lane Collector (with TWLT)	13,000	15,000	2,603	0.174	A ·	13,200	0.880	E	0.706	YES
memory static	2 Lane Collector (with 1 WL1)	13,000	000,61	4,500	0.300	۲ L	17 100	0.880	ы н	002 1	YES
results results <t< td=""><td>2 Lane Collector (No 1 WL1)</td><td>002'S</td><td>0,000</td><td>110,0</td><td>404.0 0 500</td><td>J</td><td>0.01/1</td><td>051.1</td><td>ы й</td><td>0 570</td><td>VEC</td></t<>	2 Lane Collector (No 1 WL1)	002'S	0,000	110,0	404.0 0 500	J	0.01/1	051.1	ы й	0 570	VEC
International and 2016 state International and 2016 state <th< td=""><td>2 Lane Collector (with TWI T)</td><td>13 000</td><td>0,000 15 000</td><td>3 677</td><td>246.0</td><td>⊳ ر</td><td>8 000</td><td>0.005 0</td><td>r C</td><td>0.2.0</td><td>ND N</td></th<>	2 Lane Collector (with TWI T)	13 000	0,000 15 000	3 677	246.0	⊳ ر	8 000	0.005 0	r C	0.2.0	ND N
International stands Jame Concorr(b) THL) Scion	2 Lane Collector (No TWI T)	6 500	e nnn	2 110,0	1.056	4 1	0,200	2761	ы Б	0.010	NEC NO
All 21 and 20n St	2 Lane Collector (No 1 WL1)	000,0	8,000	8,445	900.1	×	10,200	C/7.1	F	0.219	YES
29th St and 32nd St 21ane Collector (No TWLT) 6.500 8.000 3.46 0.35 0.37 1.113 F 0.810 Benchley St and Cearc (Ivery Flyvy 21ane Collector (No TWLT) 6.500 8.000 3.566 0.446 C 5.700 0.713 F 0.800 Coster Chavez Play and Evans St 21ane Collector (No TWLT) 6.500 8.000 2.938 0.325 B 1.500 1.125 F 0.800 Coster Chavez Play and Evans St 21ane Collector (No TWLT) 6.500 8.000 2.938 0.325 B 1.500 1.125 F 1.000 1.650 0.261 20h St and Zebh St 31ane Collector (No TWLT) 1.300 11.260 1.126 1.7 F 1.000 1.650 1.000 1.650 1.010 F 1.010 F 0.011 0.015 F 1.010 F	2 Lane Collector (No TWLT)	6,500	8,000	2,420	0.303	A	16,400	2.050	F	1.747	YES
Beardsby Stand Cesar Chavez Pkwy and Even Kwy 2 Lane Collector (No TWLT) 6.500 8.000 3.566 0.446 C 5.700 0.713 P 0.800 Cesar Chavez Pkwy and Even St 2 Lane Collector (No TWLT) 6.500 8.000 2.598 0.325 B 9.400 1.175 F 0.800 2 Man St 2 Lane Collector (No TWLT) 6.500 8.000 2.598 0.325 B 1.900 1.175 F 0.800 2 Man St 3 Lane Collector (No TWLT) 13.000 11.260 7.435 0.661 F 1.900 1.916 F 1.910 F 0.116	2 Lane Collector (No TWLT)	6,500	8,000	2,420	0.303	A	8,900	1.113	F	0.810	YES
0TWLT)6.5008.0003.5660.446C5,7000.713D0000TWLT)6.5008.0002.5980.325B9,4001.175F008000TWLT)6.5008.0002.5980.325B19,54001.925F0.5600TWLT)9.75011,2507,4350.661C13,6001.926F0.54807WLT)9.75011,2507,4350.661C13,60017.00F0.549013,00015,00011,26011,2601.12660.751F13,00016,010F013,00015,00011,26011,2601.12661.001F0.300F0.313013,00015,00011,2601.102F17,8001.716F0.313013,00015,00015,1711.002F17,8001.726F0.315013,00015,00015,1711.012F17,8001.757F0.315013,00015,00015,1711.012F17,8001.753F0.306013,00015,00015,1771.012F17,8001.753F0.315013,00015,00015,1771.012F17,8001.753F0.306035,00010,00013,7780.324A20,00											
0 TWLT)6,5008,0002,5980.325B9,4001.175F0,8500 TWLT)6,5008,0002,5980.325B15,4001.925F1,6000 TWLT)9,75011,2507,4350.661C13,6001.925F0,5480 TWLT)13,00015,00011,2660.751F13,00015,00011,2661,001F0,9000,867F0,1160 TWLT)9,75011,25011,2661,010F19,3001,716F0,11610 TWLT)13,00015,00011,2661,010F25,8001,716F0,1160 TWLT)13,00015,00015,9141,063F26,3001,716F0,1160 TWLT)13,00015,00015,9141,012F17,8001,870F0,1650 TWLT)13,00015,00015,9141,012F17,8001,870F0,1760 TWLT)13,00015,00015,9141,012F17,8001,870F0,91610 TWLT)13,00015,01015,1741,012F17,8001,187F0,17510 TWLT)35,00015,00015,1741,012F17,8001,187F0,17510 TWLT)35,00015,00015,1741,012F17,8001,187F0,17511 TWLT)35,00010,0001	2 Lane Collector (No TWLT)	6,500	8,000	3,566	0.446	С	5,700	0.713	D	0.267	ON
0 TWLT)6,5008,0002,5980.325B15,4001.925F1.6000 TWLT)9,75011,2607,4350.661C13,6001209F0.5480 TWLT)13,00015,00011,2660.751F13,0000.867F0.1160 TWLT)9,75011,25011,2661.001F13,0001720F0.1160 TWLT)9,75011,25011,2661.001F13,0001720F0.1160 TWLT)13,00015,00015,0441.063F20,3001.720F0.1160 TWLT)13,00015,00015,0411.063F20,3001.720F0.11610 TWLT)13,00015,00015,01015,01015,01015,01015,01015,01015,01015,01011 TWLT)13,00015,01015,01015,012F20,3001.353F0.23011 TWLT)13,00015,1771.012F17,8001.187F0.17511 TWLT)13,00015,1771.012F17,8001.187F0.17511 TWLT)13,00015,1771.012F1.78000.7600.7600.76511 TWLT)35,00040,00013,7780.344A26,0000.650C0.36511 TH35,00040,00013,7780.227A24,8000.6500.7650.365 <td>2 Lane Collector (No TWLT)</td> <td>6,500</td> <td>8,000</td> <td>2,598</td> <td>0.325</td> <td>в</td> <td>9,400</td> <td>1.175</td> <td>F</td> <td>0.850</td> <td>YES</td>	2 Lane Collector (No TWLT)	6,500	8,000	2,598	0.325	в	9,400	1.175	F	0.850	YES
0.TWLT) $9,750$ $11,250$ $7,435$ 0.661 C $13,000$ $11,206$ $7,435$ 0.611 F 0.3067 F 0.548 $0.TWLT$) $13,000$ $15,000$ $11,266$ 0.751 F $19,300$ 0.867 F 0.715 $0.TWLT$) $13,000$ $15,000$ $11,266$ 1.001 F $29,300$ 1.716 F 0.313 $0.TWLT$) $13,000$ $15,000$ $15,944$ 1.063 F $25,800$ 1.720 F 0.313 $0.TWLT$) $13,000$ $15,000$ $15,944$ 1.063 F $25,800$ 1.720 F 0.313 $0.TWLT$) $13,000$ $15,000$ $15,010$ $15,177$ 1.012 F $20,300$ 1.877 F 0.175 $0.TWLT$) $13,000$ $15,000$ $15,177$ 1.012 F $17,800$ 1.877 F 0.175 $0.TWLT$) $13,000$ $15,000$ $15,177$ 1.012 F $17,800$ 1.877 F 0.175 $0.TWLT$) $13,000$ $15,000$ $15,177$ 1.012 F $17,800$ 1.877 F 0.176 $0.TWLT$ $35,000$ $40,000$ $13,778$ 0.344 A $26,000$ 0.650 C 0.396 $0.TTMLT$ $35,000$ $40,000$ $8,816$ 0.227 A $24,800$ 0.650 C 0.396 $0.TTMLT$ $35,000$ $40,000$ $18,900$ 0.473 B $28,100$ $0.$	2 Lane Collector (No TWLT)	6,500	8,000	2,598	0.325	в	15,400	1.925	F	1.600	YES
Image: constraint of the	3 Lane Collector (No TWLT)	9,750	11,250	7,435	0.661	ວ 🖻	13,600	0.867	нц	0.548	YES
intrwittyisono <td>3 Lane Collector (No TWLT)</td> <td>9.750</td> <td>11.250</td> <td>11.266</td> <td>1.001</td> <td>4 F</td> <td>19.300</td> <td>1.716</td> <td>F</td> <td>0.715</td> <td>VES</td>	3 Lane Collector (No TWLT)	9.750	11.250	11.266	1.001	4 F	19.300	1.716	F	0.715	VES
ih TWLT)13,00015,00015,9441.063F20,3001.353F0.29029ih TWLT)13,00015,00015,1771.012F1.353F0.3957aterial35,00040,00012,0940.302A30,4000.760D0.458aterial35,00040,00013,7780.344A26,0000.650C0.395aterial35,00040,00013,7780.324A24,8000.650C0.395aterial35,00040,0008,8160.227A24,8000.650C0.395aterial35,00040,0008,8160.220A20,2000.650B0.395aterial35,00040,00018,9000.413B23,1000.703C0.395aterial35,00040,00016,3200.413B23,1000.703C0.395aterial35,00040,00016,3200.408B32,2000.703C0.395aterial35,00040,00016,3200.408B32,2000.805D0.397	4 Lane Collector (No TWLT)	13,000	15,000	21,100	1.407	Ŀ	25,800	1.720	F	0.313	YES
ith TWLT) 13,000 15,000 15,177 1.012 F 17,800 1.187 F 0.175 rterial 35,000 40,000 13,778 0.302 A 30,400 0.760 D 0.458 rterial 35,000 40,000 13,778 0.344 A 26,000 0.650 C 0.305 rterial 35,000 40,000 9,080 0.227 A 24,800 0.650 C 0.305 rterial 35,000 40,000 8,816 0.227 A 20,200 0.650 C 0.305 rterial 35,000 40,000 8,816 0.220 A 20,200 0.655 B 0.285 rterial 35,000 40,000 18,900 0.403 B 28,100 0.505 B 0.230 rterial 35,000 40,000 16,320 0.408 B 32,200 0.605 D 0.230 rterial 35,000 16,320 0.408 B 32,200 0.605 D 0.230 <td>2 Lane Collector (with TWLT)</td> <td>13,000</td> <td>15,000</td> <td>15,944</td> <td>1.063</td> <td>Ŀ</td> <td>20,300</td> <td>1.353</td> <td>F</td> <td>0.290</td> <td>YES</td>	2 Lane Collector (with TWLT)	13,000	15,000	15,944	1.063	Ŀ	20,300	1.353	F	0.290	YES
Iterial 35,000 40,000 12,094 0.302 A 30,400 0.760 D 0.458 Iterial 35,000 40,000 13,778 0.344 A 26,000 0.650 C 0.305 Iterial 35,000 40,000 9,080 0.227 A 24,800 0.650 C 0.393 Iterial 35,000 40,000 8,816 0.220 A 20,200 0.650 B 0.393 Iterial 35,000 40,000 8,816 0.220 A 20,200 0.6505 B 0.385 Iterial 35,000 40,000 18,900 0.473 B 28,100 0.703 C 0.230 Iterial 35,000 40,000 16,320 0.408 B 32,200 0.703 C 0.230	2 Lane Collector (with TWLT)	13,000	15,000	15,177	1.012	Ŀ	17,800	1.187	F	0.175	YES
Iterial $35,000$ $40,000$ $12,094$ 0.302 A $30,400$ 0.760 D 0.458 Iterial $35,000$ $40,000$ $13,778$ 0.344 A $26,000$ 0.650 C 0.306 Iterial $35,000$ $40,000$ $9,080$ 0.227 A $24,800$ 0.620 C 0.303 Iterial $35,000$ $40,000$ $8,816$ 0.220 A $20,200$ 0.505 B 0.285 Iterial $35,000$ $40,000$ $18,900$ 0.473 B $28,100$ 0.703 C 0.230 Iterial $35,000$ $40,000$ $16,320$ 0.408 B $23,200$ 0.703 C 0.230 Iterial $35,000$ $40,000$ $16,320$ 0.408 B $32,200$ 0.805 D 0.397										_	
Interial $35,000$ $40,000$ $13,7/8$ 0.544 A $26,000$ 0.050 C 0.036 Interial $35,000$ $40,000$ $9,080$ 0.227 A $24,800$ 0.620 C 0.393 Interial $35,000$ $40,000$ $8,816$ 0.220 A $20,200$ 0.620 C 0.393 Interial $35,000$ $40,000$ $8,816$ 0.220 A $20,200$ 0.505 B 0.285 Interial $35,000$ $40,000$ $18,900$ 0.473 B $28,100$ 0.703 C 0.230 Interial $35,000$ $40,000$ $16,320$ 0.408 B $32,200$ 0.703 C 0.230	4 Lane Major Arterial	35,000	40,000	12,094	0.302	A ·	30,400	0.760	D	0.458	ON 0
rterial $35,000$ $40,000$ $8,816$ 0.220 A $20,200$ 0.505 B 0.285 $arterial$ $35,000$ $40,000$ $18,900$ 0.473 B $28,100$ 0.703 C 0.230 $arterial$ $35,000$ $40,000$ $16,320$ 0.408 B $32,200$ 0.805 D 0.397	4 Lane Major Arterial 4 Lane Major Arterial	35,000	40,000	9,080 9,080	0.227	A A	24,800	0.620	ט ר	0.393	ON N
rterial 35,000 40,000 18,900 0.473 B 28,100 0.703 C 0.230 rterial 35,000 40,000 16,320 0.408 B 32,200 0.805 D 0.397	4 Lane Major Arterial	35,000	40,000	8,816	0.220	A	20,200	0.505	В	0.285	ON
rterial 35,000 40,000 16,320 0.408 B 32,200 0.805 D 0.397	4 Lane Major Arterial	35,000	40,000	18,900	0.473	в	28,100	0.703	С	0.230	ON
Notes: Bold values indicate roadway segments operating at LOS E or F.	4 Lane Major Arterial	35,000	40,000	16,320	0.408	В	32,200	0.805	D	0.397	ON
 (a) Roadway Functional Classifications are based on field obs (b) The v/c Ratio is calculated by dividing the ADT volume by 		 2 Lane Collector (No TWLT) 2 Lane Collector (with TWLT) 3 Lane Collector (with TWLT) 4 Lane Major Arterial 2 Lane Collector (with TWLT) 4 Lane Major Arterial 2 Lane Collector (No TWLT) 3 Lane Collector (No TWLT) 2 Lane Collector (No TWLT) 2 Lane Collector (No TWLT) 2 Lane Collector (No TWLT) 3 Lane Collector (No TWLT) 2 Lane Collector (No TWLT) 3 Lane Collector (No TWLT) 3 Lane Collector (No TWLT) 4 Lane Major Arterial 	the TWLT) to TWLT) the TWLT)	OD TWLT) 0.000 in TWLT) 6,500 in TWLT) 8,750 in TWLT) 18,750 in TWLT) 18,750 rein TWLT) 18,750 in TWLT) 18,750 rein TWLT) 5,000 rein TWLT) 5,000 in TWLT) 5,000 in TWLT) 5,000 in TWLT) 5,000 in TWLT) 13,000 in TWLT) 13,000 in TWLT) 13,000 in TWLT) 5,500 in TWLT) 13,000 in TWLT) 13,000 in TWLT) 5,500 in TWLT) 5,500 </td <td>otrwitt) 0.500 8.000 ihi TWLT) 18.750 8.000 ihi TWLT) 18.750 22.500 ihi TWLT) 25.000 30.000 ihi TWLT) 25.000 30.000 reial 35.000 40.000 ihi TWLT) 13.000 15.000 reial 35.000 15.000 ini TWLT) 13.000 15.000 ini TWLT) 0.7WLT 5.000</td> <td>of TWL1) 6,500 8,000 2,380 ih TWLT) 18,750 20,000 2,380 ih TWLT) 18,750 20,000 18,856 in TWLT) 25,000 30,000 18,856 in TWLT) 25,000 30,000 18,856 in TWLT) 25,000 30,000 18,856 in TWLT) 25,000 8,000 13,172 in TWLT) 5,500 8,000 13,172 in TWLT) 13,000 15,000 13,172 in TWLT) 13,000 15,000 3,617 in TWLT) 13,000 15,000 3,659 in TWLT) 13,000 15,000 3,617 in TWLT) 13,000 15,000 3,617 in TWLT) 13,000 15,000 2,436 in TWLT) 13,000 13,000 2,436 in TWLT) 13,000 13,000 2,436 in TWLT) 13,000 13,000 2,436 in TWLT) 6,500</td> <td>OTVLIJ 0.000 0.000 0.000 0.000 0TWLIJ 6.500 8.000 2.380 0.028 0TWLIJ 87.00 2.000 0.978 0.029 0TWLIJ 87.00 2.000 18.456 0.629 nt TWLIJ 25.000 30.000 18.456 0.629 nt TWLIJ 55.00 8.000 15.00 0.188 nt TWLIJ 13.000 15.000 17.32 0.478 nt WLIJ 13.000 15.000 17.32 0.474 nt WLIJ 13.000 15.000 3.473 0.446 NtWLIJ 13.000 15.000 3.473 0.446 NtWLIJ 13.000 15.000 3.473 0.446<</td> <td>International International Internat International International</td> <td>International International Internat</td> <td>ortuctry c.500 c.000 c.500 c.500</td> <td>International and transmersional and transmersind and transmersional and transmersional and transmersion</td>	otrwitt) 0.500 8.000 ihi TWLT) 18.750 8.000 ihi TWLT) 18.750 22.500 ihi TWLT) 25.000 30.000 ihi TWLT) 25.000 30.000 reial 35.000 40.000 ihi TWLT) 13.000 15.000 reial 35.000 15.000 ini TWLT) 13.000 15.000 ini TWLT) 0.7WLT 5.000	of TWL1) 6,500 8,000 2,380 ih TWLT) 18,750 20,000 2,380 ih TWLT) 18,750 20,000 18,856 in TWLT) 25,000 30,000 18,856 in TWLT) 25,000 30,000 18,856 in TWLT) 25,000 30,000 18,856 in TWLT) 25,000 8,000 13,172 in TWLT) 5,500 8,000 13,172 in TWLT) 13,000 15,000 13,172 in TWLT) 13,000 15,000 3,617 in TWLT) 13,000 15,000 3,659 in TWLT) 13,000 15,000 3,617 in TWLT) 13,000 15,000 3,617 in TWLT) 13,000 15,000 2,436 in TWLT) 13,000 13,000 2,436 in TWLT) 13,000 13,000 2,436 in TWLT) 13,000 13,000 2,436 in TWLT) 6,500	OTVLIJ 0.000 0.000 0.000 0.000 0TWLIJ 6.500 8.000 2.380 0.028 0TWLIJ 87.00 2.000 0.978 0.029 0TWLIJ 87.00 2.000 18.456 0.629 nt TWLIJ 25.000 30.000 18.456 0.629 nt TWLIJ 55.00 8.000 15.00 0.188 nt TWLIJ 13.000 15.000 17.32 0.478 nt WLIJ 13.000 15.000 17.32 0.474 nt WLIJ 13.000 15.000 3.473 0.446 NtWLIJ 13.000 15.000 3.473 0.446 NtWLIJ 13.000 15.000 3.473 0.446<	International Internat International International	International Internat	ortuctry c.500 c.000 c.500 c.500	International and transmersional and transmersind and transmersional and transmersional and transmersion

(b) The v/c Ratio is calculated by dividing the ADT volume by each respectiv K.(SND_TPTO(095707000)[Excell[707000RS01.xlsm]2030 Alt2

					HORIZON Y FRI	TABLE 6-4 TABLE 6-4 N YEAR (2030) CONDITIONS ALTERN FREEWAY SEGMENT LOS SUMMARY	TABLE 6-4) CONDITION GMENT LOS.	TABLE 6-4 HORIZON YEAR (2030) CONDITIONS ALTERNATIVE 2 FREEWAY SEGMENT LOS SUMMARY	Æ 2						
					EXISTING	ING					ALTERNATIVE 2	ATIVE 2			
FREEWAY SEGMENT	DIRECTION	NUMBER OF LANES	CAPACITY (a)	ADT (b)	PEAK-HOUR VOLUME (c)	V/C RATIO	SOT	NUMBER OF LANES	CAPACITY (a)	ADT (b)	PEAK- HOUR VOLUME (c)	V/C RATIO	SOT	V/C RATIO Δ	SIGNIFICANT?
I.S.					AM	AM PEAK									
	NB	4 M	9,400	1<1.000	7,793	0.829	D	4 M + 1 H	11,000	242 400	11,565	1.051	F0	0.22	YES
uonount c/-xc of teens t	SB	4 M	9,400	104,000				4 M + 1 H	11,000	243,400					:
SR-75 Junction to 28th Street	NB	4 M	9,400	160,000	7,603	0.809	D	4 M + 1 H	11,000	241,000	11,451	1.041	F0	0.23	YES
	SB	4 M	9,400					4 M + 1 H	11,000						:
28th Street to I-15 Interchange	NB	4 M 4 M	9,400 9,400	154,000	7,317	0.778	υ	4 M + 1 H 4 M + 1 H	11,000	222,400	10,568	0.961	Э	0.18	YES
	NB	4 M	9,400	100,000	8,933	0.950	Е	4 M + 1 H	11,000	267 100	12,454	1.132	F0	0.18	YES
1-12 INVISION OF A DIVISION SU	SB	4 M	9,400	100,000				4 M + 1 H	11,000	707,100					1
I-15															:
	NB	3 M	7,050	000				3 M	7,050	100 000					1
I-5 Interchange to Ocean View Blvd	SB	3 M	7,050	000,66	4,722	0.670	c	3 M	7,050	129,900	6,457	0.916	D	0.25	:
SR-75 (d)															:
I S Interchance to Gloriette Blud	WB	2 M	4,700	007-10				2 M	4,700	03 500					
1-) Interchange to Objicita Dive	EB	3 M	7,050	24,700	4,629	0.657	С	3 M	7,050	000000	5,929	0.841	D	0.18	:
						4	PM PEAK								
I-5															
I Street to SR-75 Innetion	NB	4 M	9,400	164 000				4 M + 1 H	11,000	243 400					:
	SB	4 M	9,400	oppfi or	7,036	0.749	С	4 M + 1 H	11,000		10,443	0.949	Э	0.20	YES
SR-75 Junction to 28th Street	NB	4 M	9,400	160,000				4 M + 1 H	11,000	241,000					1
	SB	4 M	9,400		6,865	0./30	υ	4 M + I H	11,000		10,340	0.940	Э	0.21	YES
28th Street to I-15 Interchange	SB	4 M 4 M	9,400 9,400	154,000	6.607	0.703	U	4 M + 1 H 4 M + 1 H	11,000	222,400	9.542	0.867	2	0.16	
1 16 Latendrameters to Division Ct	NB	4 M	9,400	100 000				4 M + 1 H	11,000	767 100					I
1-1-1 Interchange to Division St	SB	4 M	9,400	100,000	8,066	0.858	D	4 M + 1 H	11,000	707,100	11,245	1.022	$\mathbf{F0}$	0.16	YES
I-15															-
1-5 Interchange to Ocean View Blvd	NB	3 M	7,050	95 000	5,216	0.740	С	3 M	7,050	129 900	7,132	1.012	$\mathbf{F0}$	0.27	YES
	SB	3 M	7,050					3 M	7,050						1
SR-75 (d)															ı
1-5 Interchange to Glorietta Blvd	WB	3 M	7,050	73.000	4,585	0.650	С	3 M	7,050	93.500	5,873	0.833	D	0.18	1
	EB	2 M	4,700	oppie i				2 M	4,700	000-600					
Notes: Bold values indicate freeway segments operating at LOS E or F.	S E or F.														
M=Main Lane; A= Auxiliary Lane; H= HOV Lane. This analysis evaluates the higher peak-hour direction of traffic	ftraffic														
(a) The capacity is calculated as 2,350 ADT per main lane and 1,200 ADT per auxiliary lane	ne and 1,200 ADT per	r auxiliary lane													
(b) ITALIE VOLUMES PROVIDED BY CAUCADE (c) Peak-hour volume calculated by: (ADT*K*D)/Truck Factor	. Factor														
(d) SR-75 has reversable lanes.															

Mitigation

The following intersection improvements are needed to mitigate the peak-hour intersection impacts of the proposed Barrio Logan Community Plan Update Land Use Alternative 2:

- <u>National Avenue and 16th Street</u>: A new traffic signal is recommended to be installed at this intersection. A signal warrant worksheet for this intersection is included in **Appendix I**. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- <u>Harbor Drive and Sigsbee Street</u>: A traffic signal is recommended to be installed at the intersection of Sigsbee Street and Harbor Drive. The signal is needed to serve the increased traffic from land uses proposed, as well as accommodating the traffic that would be diverted from Beardsley Street due to the median closure along Harbor Drive. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- Logan Avenue and Beardsley Street/I-5 SB off-ramp: A traffic signal is recommended to be
 installed at the intersection. A signal warrant worksheet for this intersection is included in
 Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon
 Year 2030 volumes.
- <u>National Avenue and Beardsley Street:</u> A traffic signal is recommended to be installed at the intersection. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- <u>Harbor Drive and Beardsley Street:</u> This improvement would extend the raised median along Harbor Drive in front of Beardsley Street converting the intersection to right-in/right-out only movements.
- Logan Avenue and Cesar Chavez Parkway: The addition of an exclusive eastbound right-turn lane and a northbound right-turn overlap phase are recommended to be installed at this intersection. The addition of the exclusive eastbound right-turn lane could be implemented by restriping changes only. An existing MTS bus stop is located where the exclusive right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement. This improvement will not affect the existing on-street parking. The entrance to the State Route 75 ramps would be reconfigured to improve pedestrian circulation. This improvement could include the removal of the free northbound right-turn access from Cesar Chavez Parkway to the State Route 75 ramps.
- <u>National Avenue and Cesar Chavez Parkway:</u> Exclusive eastbound and westbound right-turn lanes are recommended to be installed at this intersection in order to reduce queuing along National Avenue. These improvements could be implemented by restriping changes only. These improvements will not affect the existing on-street parking. An existing MTS bus stop is located where the exclusive westbound right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement.
- Main Street and Cesar Chavez Parkway: An exclusive westbound right-turn lane is recommended to be installed at this intersection in order to reduce queuing along Main Street. This improvement could be implemented by restriping changes only. This improvement will not affect the existing on-street parking. An existing MTS bus stop is located where the exclusive westbound right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement.

- <u>Harbor Drive and Cesar Chavez Parkway:</u> A southbound right-turn overlap phase, dual eastbound left-turn lanes, an exclusive northbound right-turn lane and an exclusive westbound right-turn lane are recommended. It is anticipated that the exclusive northbound right-turn lane will be completed by Caltrans in conjunction with the extension of the westbound left-turn lane.
- Logan Avenue and Sampson Street: A traffic signal is recommended to be installed. Also, southbound and northbound left-turn lanes are recommended. These lanes could be added with restriping changes only at the time of signalization, and would not require roadway widening. The configuration changes would require the removal of on-street parking along Sampson Street. A total of 16 parking spaces are anticipated to be removed as part of this improvement. The removed parking spaces are likely serving commercial uses along Logan Avenue and multifamily residential units along Sampson Street. The removal of on-street parking spaces will create a shortage of on-street parking within the vicinity of this intersection. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- <u>Main Street and 26th Street:</u> A partial street closure is recommended at the intersection for truck traffic restrictions. The northbound through and eastbound left movements would be eliminated. This improvement is not required to mitigate intersection level of services, but it is recommended for a reduction of truck traffic along residential streets within the community.
- <u>Harbor Drive and Schley Street:</u> The southbound through and southbound left-turn movements are recommended to be prohibited. Right-turn overlap signal phasing is recommended for the southbound movement.
- <u>National Avenue and 28th Street:</u> An exclusive southbound right-turn lane is recommended to be added. This improvement could be accomplished by restriping the roadway without the need for widening. A removal of one on-street parking space would be required along the west side of National Avenue to accommodate a 100-foot southbound exclusive right-turn lane.
- <u>Boston Avenue and 28th Street:</u> An exclusive eastbound right-turn lane is recommended to be added. This improvement could be implemented by restriping changes only and will not affect on-street parking.
- <u>Harbor Drive and 28th Street:</u> A second southbound left-turn lane and a second eastbound left-turn lane are recommended to be added.
- Boston Avenue and Interstate 5 Southbound Ramp-29th Street: This recommendation includes a truck right-turn prohibition for the northbound movement at the intersection of 28th Street and Boston Avenue and truck turning signage to encourage vehicles to use Main Street and 29th Street to enter the Interstate 5 southbound freeway. The Interstate 5 Southbound Ramp and Boston Avenue intersection is recommended to be signalized. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- <u>32nd Street and Wabash Boulevard:</u> Potential improvements at this intersection will be further defined once Caltrans completes its truck access improvement study.
- <u>Harbor Drive and 32nd Street:</u> Same as the improvements for Wabash Boulevard and 32nd Street.

Figure 6-3 illustrates the intersection geometrics within Barrio Logan with the recommended intersection improvements listed above.

The following roadway segment improvements are recommended to mitigate the roadway segment cumulative impacts of the proposed Barrio Logan Community Plan Update with Alternative 2 land use scenario:

Commercial St/	National Ave/	National Ave/	Newton Ave/
16th St	16th St	Sigsbee St	Sigsbee St
Main St/	Harbor Dr/	Logan Ave/Beardsley St-	National Ave/
Sigsbee St	Sigsbee St	I-5 SB off-ramp	Beardsley St
Newton Ave/	Main St/	Harbor Dr/	Kearney St/
Beardsley St	Beardsley St	Beardsley St	Cesar Chavez Pkwy





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Kimley-Horn and Associates, Inc. 6-16 FIGURE 6-3 Horizon Year (2030) with Alternative 2 Improvements Intersection Geometrics

Logan Ave/	National Ave/	Newton Ave/	Main St/
Cesar Chavez Pkwy	Cesar Chavez Pkwy	Cesar Chavez Pkwy	Cesar Chavez Pkwy
Harbor Dr/	Logan Ave/	National Ave/	National Ave/
Cesar Chavez Pkwy	I-5 SB On-ramp	SR-75 Off-ramp	Evans St
Newton Ave/	Main St/	Logan Ave/	National Ave/
Evans St	Evans St	Sampson St	Sampson St
	22		





Kimley-Horn and Associates, Inc. 6-17 FIGURE 6-3.1 Horizon Year (2030) with Alternative 2 Improvements Intersection Geometrics

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Newton Ave/	Main St/	Harbor Dr/	National Ave/
Sampson St	Sampson St	Sampson St	Sicard St
National Ave/	National Ave/	Main St/	Harbor Dr/
26th St	27th St	26th St	Schley St
	30 T		
National Ave/	Boston Ave/	Main St/	Harbor Dr/
28th St	28th St	28th St	28th St





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Kimley-Horn and Associates, Inc. 6-18 FIGURE 6-3.2 Horizon Year (2030) with Alternative 1 Improvements Intersection Geometrics

Boston Ave/I-5 SB On-ramp	Main St/ 32nd St	Wabash Blvd/ 32nd St	Harbor Dr/ 32nd St
		Add direct connector to Harbor Dr	Add direct connector to Wabash Blvd
Main St /			
I-15 Ramps			
41 41			







6-19 FIGURE 6-3.3 Horizon Year (2030) with Alternative 1 Improvements Intersection Geometrics

- Cesar Chavez Parkway between Logan Avenue and Harbor Drive: This roadway segment will be reclassified as a three-lane urban major facility between Logan Avenue and Main Street. Between Main Street and Harbor Drive, the roadway segment will be reclassified as a three-lane major arterial. A raised median will be installed between Harbor Drive and Logan Avenue. The roadway segment will have two lanes in the northbound direction and one lane in the southbound direction. On-street parking will be allowed between Logan Avenue and Main Street. A southbound right-turn auxiliary lane will be present between Main Street and Harbor Drive. The entire roadway segment should be considered for "sharrow" bicycle marking treatment and will be considered a class III bicycle facility.
- <u>28th Street between I-5 and National Avenue:</u> This roadway segment will be reconfigured as a four-lane major arterial with a five-foot raised median. The new configuration would allow for two-lanes in each direction and an auxiliary lane in the southbound direction.
- <u>National Avenue between Cesar Chavez and Evans Street</u>: This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.
- <u>National Avenue between Sicard and 27th Street</u>: This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.
- <u>Main Street between Evans Street and 26th Street:</u> This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.

It is anticipated that traffic patterns within the community will be affected based on some of the improvements listed above. Fewer vehicles are anticipated to use the roadway segment of Boston Avenue between 28th Street and 29th Street. This is due to the proposed improvements along 28th Street and Main Street and the signalization of Boston Avenue and 29th Street intersection, which serves as an entrance ramp to the I-5 Southbound freeway. It is anticipated that more vehicles would use Main Street and 29th Street. **Figure 6-4** illustrates the peak-hour turning volumes within the community with the anticipated change in traffic patterns.

Table 6-5 displays the summary of the intersection peak-hour analysis with the proposed intersections and roadway segments improvements described above. As shown in the Table, with the implementation of the recommended improvements, all intersections within the study area would operate at LOS D or better with the following exceptions:

- Harbor Drive and 28th Street (will continue to operate at LOS E during the afternoon peak-hour period);
- 32nd Street and Wabash Street (will continue to operate at LOS F and LOS E during the morning and afternoon peak-hour periods, respectively); and
- Harbor Drive and 32nd Street (will continue to operate at LOS F during both peak-hour periods).

The Harbor Drive/32nd Street and 32nd Street/Wabash Street intersections are being studied further in an on-going Caltrans study. The latest report includes the installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15. Another improvement under study is the Vesta Street Overcrossing at Harbor Drive which would connect the wet and dry sides of the Naval Base San Diego. On November 1, 2010 the Navy temporarily closed the eastern leg (Norman Scott Road) of the 32nd Street/Norman Street-Wabash Street intersection to improve safety. The Navy is monitoring traffic to determine if this closure should remain. A preliminary analysis indicates that the mentioned projects would improve the intersection to acceptable levels and decrease the potential queuing problems.

Harbor Drive/28th Street is projected to operate at LOS E, even with improvements. There is the potential that improvements to be made between Harbor Drive and State Route 15 (Caltrans study) could divert some traffic off of 28th Street, further improving this intersection

SANDAGs 2050 Regional Transportation Plan (RTP) unconstrained network recommends the grade separation of the trolley lines at 28th Street and at 32nd Street. A peak-hour intersection analysis was conducted for the intersections of 28th Street and 32nd Street with Harbor Drive assuming these proposed grade separations. The results of the analysis indicated that the proposed grade separation would improve both intersections to LOS D or better during both peak-hour periods under the Horizon Year scenario with either alternative. The proposed grade separations are included in the "revenue constrained scenario". Due to the benefits to adjacent intersections, these grade separation projects are recommended.

Table 6-6 displays the summary of the roadway segment analysis with the roadway segment improvements described above. As shown in the table, the following roadway segments would continue to operate at LOS E or F even with the implementation of the recommended improvements:

- Sampson Street between National Avenue and Harbor Drive (LOS F);
- 26th Street between National Avenue and Main Street (LOS F);
- 28th Street between I-5 Ramps and Boston Avenue (LOS E);
- 29th Street between Boston Avenue and Main Street (LOS E):
- 32nd Street between Main Street and Wabash Street (LOS E): •
- Vesta Street between Main Street and I-5 Ramps (LOS E);
- Logan Avenue between Sigsbee Street and Cesar Chavez Parkway (LOS F):
- National Avenue between 16th Street and Sigsbee Street (LOS E);
- National Avenue between Sigsbee Street and Beardsley Street (LOS E);
- National Avenue between Beardsley Street and Cesar Chavez Parkway (LOS F);
- Boston Avenue between 28th Street and 29th Street (LOS F);
- Boston Avenue between 29th Street and 32nd Street (LOS F); •
- Main Street between Cesar Chavez Parkway and Evans Street (LOS E);
- Main Street between Evans Street and 26th Street (LOS F); .
- Main Street between 26th Street and 28th Street (LOS F); Main Street between 26th Street and 29th Street (LOS E); Main Street between 29th Street and 32nd Street (LOS F);
- .
- Main Street between 32nd Street and Rigel Street (LOS F);
- Main Street between Rigel Street and Una Street (LOS F); and
- Main Street between Una Street and I-5 SB Off-ramp (LOS F).

Boston Avenue, National Avenue and 26th Street are desired by the community of Barrio Logan to be more pedestrian and bicycle friendly corridors. The widening of these roadways to improve vehicular circulation was not desired by the community. The vehicular operations along these three facilities could be congested during peak periods and vehicular speeds would be low. Additional widening is not recommended. Traffic calming measures should be evaluated along National Avenue to further enhance the pedestrian and bicycle circulation.

Additional improvements to the failing roadway segments of Sampson Street, 28th Street, 29th Street, 32nd Street, Vesta Street, Logan Avenue and Main Street are not recommended since the roadway segment analysis used in this study is based on theoretical capacities based on the number of travel lanes. The analysis does not take into account other physical features that can affect the capacity of a roadway segment like grades, number of traffic signals, number of driveways, parking availability, etc. In addition, the analysis does not take into account the different traffic peak periods experienced on these roadways due to the surrounding land uses. As an example, the Barrio Logan traffic patterns are unique in that they are heavily influenced by the Port of San Diego and the Navy Base traffic generators whose peak-hour of use do not correspond to typical peak-hour commuter traffic. Therefore, the typical planning

level capacity for these streets may understate the carrying capacity of these roadways. To better represent the conditions of a roadway segment within the Barrio Logan community, the operations of the upstream and downstream intersections of each respective segment during the peak periods would indicate whether the roadway segment would have adequate capacity. As shown in the intersection analysis tables, all intersections along the failing roadway segments would operate at acceptable LOS.

In addition to the roadway segment improvements listed above, it is recommended that 28th Street between Harbor Drive and the I-5 Ramps be classified as a four-lane major arterial. For the segment between Harbor Drive and Main Street, a raised median should be installed with an entrance to the Navy Commissary. The proposed configuration would allow two lanes in each direction with an auxiliary lane for the heavy southbound right-turn movements at Harbor Drive. Parking would need to be removed along both sides of the roadway, with a total loss of approximately 20 parking spaces. The removed parking spaces are likely utilized by NASCO employees or Naval Base San Diego employees or visitors. Additional diagonal parking is recommended to be evaluated for installation along Boston Avenue between 28th Street and 29th Street to replace the loss of parking along 28th Street. The west side of the roadway could be widened by 4 feet to accommodate the proposed interim cross-sections. The east sidewalk will widen to 10 feet to enhance pedestrian circulation. This improvement is not part of mitigation for a roadway segment impact. The improvement is recommended to encourage heavy truck traffic to use 28th Street instead of Main Street and to provide for pedestrians. The ultimate recommended cross-section of 28th Street will include a designated bike lane along both sides of the roadway and a fourteen foot parkway. The ultimate configuration along 28th Street will require additional roadway widening and right-of-way acquisition. An alignment study is required to further define the extent of additional right-way needed and future widening

Conceptual roadway segments improvement figures, including the proposed cross-sections are included in **Appendix K**.

Based on the freeway segment capacity analysis included in this study, Alternative 2 land use scenario is considered to have a cumulative traffic related impact along the following freeway segments:

- I-5 from J Street to SR-75 Junction;
- I-5 from SR-75 Junction to 28th Street;
- I-5 from 28th Street to I-15 Interchange;
- I-5 from I-15 Interchange to Division Street; and
- I-15 from I-5 Interchange to Ocean View Boulevard

SANDAG's Draft 2050 Regional Transportation Plan (RTP) hybrid network includes the following freeway improvements:

- Operational freeway improvements along Interstate 5 between Interstate 15 and Interstate 8; and
- Addition of one (1) main lane and one (1) managed lane in each direction between Interstate 15 and State Route 54;

Both improvements listed above were included in the hybrid network's revenue constrained scenario, approved by SANDAG's board for further study on December 17th, 2010. The improvements included in the RTP are recommended to enhance the regional connectivity and accommodate the forecasted growth of the San Diego region. It should be noted that both land use alternatives presented on this plan would generate less traffic than the current adopted Community Plan land use alternative. Either proposed alternative would lessen, but not eliminate cumulative freeway traffic impacts.

In addition to the proposed freeway improvements listed in the SANDAG's Draft 2050 RTP, the following freeway access improvements are recommended within the Barrio Logan Community:

- Signalization of the intersection of Logan Avenue and Beardsley Street/ Interstate 5 SB off-ramp;
- Traffic signal modification at the intersection of Logan Avenue and Cesar Chavez Parkway (State Route 75 on-ramp);
- Signalization of the intersection of Boston Avenue and Interstate 5 SB on-ramp- 29th Street;
- Roadway improvements along 28th Street to accommodate an additional southbound lane, including the potential for widening the Interstate 5 overcrossing;
- Signalization of the intersection of 28th Street and Interstate 5 southbound off-ramp;
- Changes to the roadway striping along Main Street between 28th Street and 29th Street to facilitate freeway access to the Interstate 5 southbound on-ramp at Boston Avenue;
- Installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15 (under study by the Port of San Diego, and Caltrans);
- Construction of the Vesta Street Overcrossing at Harbor Drive (under study by the Navy);
- Coordination of City of San Diego and Navy related to the closure of the east leg of the 32nd Street and Norman Street-Wabash Street intersection (recently completed on a trial basis by the Navy); and
- Grade separation of the trolley tracks at the 28th Street and Harbor Drive and 32nd Street and Harbor Drive intersections (to be completed by SANDAG and part of the 2050 draft RTP).

The improvements listed above would decrease congestion along the major freeway access locations within the community.

Barrio Logan Co	mmunity Plan	Update					
5 138 /81 ⇔ 270 /510 ∞ 43 /36 16th St	 № 112 / 119 ⇔ 299 / 493 ☆ 23 / 0 Commercial St 	 391 /70 ⇒ 36 /25 ∞ 65 /125 16th St 	∾ 34 / 25 ⇔ 495 / 458 ☆ 3 / 3 National Ave	 S 60 / 40 ⇔ 40 / 23 ∞ 16 / 6 Sigsbee St 	 S 36 / 28 ⇔ 377 / 254 ∞ 19 / 9 National Ave 	 A A	5 51 / 23 ⇔ 80 / 50 2 15 / 9 Newton Ave
17 / 68	15 /25	40/91 & 194/347 ⇔ 40/31 ∿	40 /61 23 34 /41 35 12 /7 25	11 / 35	65 /78 2 26 /58 4 58 /13 2	6 / 9	24 /20 % 111 /91 ₹
5 3 / 2 ⇔ 96 / 60 ∞ 31 / 20 Sigsbee St	∾ 61/31 ⇔ 8/0 ∞ 31/38 Main St	 Point (100 / 70 Point (100 / 90 Sigsbee St 	∾ 20 / 100 ⇔ 1650 / 750 Harbor Dr	8 47 / 39 ⇒ 233 / 109 ⇒ 264 / 272 H5 SB Off-Ramp	⇔ 209 / 160 ∞ 88 / 40 Logan Ave	8 23 / 11 ⇔ 138 / 83 ∞ 213 / 188 Beardsley St	 5 66 / 77 ⇔ 432 / 358 ≥ 239 / 113 National Ave
3/4 ⊘ 8/2 ⇔ 6/13 ∿	5 / 0 2 97 / 98 5 24 / 12 2	38 / 65		175 / 532 ⇔ ör 24 / 70 ∿ spres 8	30 / 56 2 69 / 123 2	8 / 19	4 /9 2 30 /43 5 50 /132 2
5 41 /12 ⇔ 156 /94 ∞ 56 /46 Beardstay St	∾ 15 / 19 ⇔ 82 / 93 ∞ 29 / 13 Newton Ave	5 52 /17 ⇔ 57 /39 ∞ 275 /144 Beardstay St	s. 76 / 79 ⇔ 109 / 33 ∞ 163 / 78 Main St	25 138 /70 Beardsley St	∾ 30 / 20 ⇔ 1580 / 820 Harbor Dr	21 23 73 732 24 744 25 25 73 25 25 73 25 25 25 25 25 25 25 25 25 25 25 25 25	 5 205 / 167 ⇔ 278 / 173 ∞ 615 / 517 Kearney Ave
18 / 7	13 /5 ≈ 23 /71 ⇔ 19 /37 ≌	15/22 ≈ 74/64 ⇔ 4/4 ∾	2 /0 ≈ 8 /25 ⇔ 52 /109 ≈	560 / 1950 ⇔			257 / 383 & 259 / 343 &





6-24 FIGURE 6-4 Horizon Year (2030) with Alternative 2 Improvements Peak-Hour Turning Volumes

K:\SND_TPTO\095707000\Excel\(707000TA01.xlsx)Alt 2 with Imp Figure 1-12

Barrio Logan Co	mmunity Plan	Update				
5 80 /51 ⇔ 818 /684 ⊘ 70 /114 Cesar Chavez Prevy-SR-75 On- rang	 № 76 / 90 ⇔ 350 / 350 ∞ 100 / 100 Logan Ave 	 № 310 / 410 ⇔ 765 / 550 ∞ 60 / 120 ∞ 680 / 120 cesar Chavez Pkwy 	 № 110 / 275 ⇔ 350 / 270 ☆ 120 / 110 National Ave 	12 150 / 60 000 / 170 ∞ 000 / 1	8 195 / 280 ⇔ 580 / 540 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250 150 / 250	 № 190 / 270 ⇔ 350 / 250 ∞ 70 / 70 Main St
140 / 130	100 /140 2 300 /506 7 300 /700 2	190 / 300	100 /120	80 / 120	150 / 120	85 / 85 2 340 / 640 5 90 / 180 2
 510 / 314 8 510 / 314 8 33 / 30 8 77 / 33 Cesar Chavez Pkwy 	 № 99 / 43 ⇔ 1056 / 467 2 80 / 30 Harbor Dr 	18 dumer B SB Ou-Yang G SB Ou-Yang S SB OU-Y	∾ 80 / 69 ⇔ 125 / 156 Logan Ave	19 60 mea 60 mea 7 0 52 60 52 7 82 62 53 62 53 62 53 62 53 62 53 62 53 7 85 7 85	8 / 70 28 / 70 07 09 / 45 0 07 00 00 00 00 00 00 00 00 00 00 00 0	 № 28 / 24 ⇔ 225 / 191 2 38 / 34 National Ave
109 / 590	10 / 50 2 14 / 63 5 27 / 35 2	475 / 891 ⊘ 182 / 523 ⇔ ແ 2 / 8 ∾ ¥e	4 / 16 °	126 / 302 ⇔	16 / 35	27 / 12 2 48 / 18 5 25 / 62 2
5 37 /21 ⇔ 30 /28 ∞ 7 /30 Evans St	s 30 / 27 ⇔ 63 / 70 ⊉ 16 / 27 Newton Ave	55 34 / 9 66 / 85 Evans St	∾ 75 / 68 ⇔ 427 / 284 Main St	23 52 52 52 52 52 52 52 52 52 52	5 121 / 109 5 124 / 98 62 / 132 62 / 132 8 8 8 8 9 8 9 9 9 9 9 9 9 9 12 12	 № 106 / 105 ⇔ 101 / 70 ∞ 48 / 21 National Ave
23 / 24	27 /7 ~ 58 /47 ⁻ 31 /28 ⁻	24 / 6		386 (141 / 101 / 200 / 101 / 101 / 200 / 101 / 101 / 200 / 114 / 115 / 101 / 200 / 201 / 115 /	78 / 166	7 /13 ⊘ 107 /208 ⇔ 16 /30 ⊗



egend X / Y = AM / PM PEAK HOUR TURNING VOLUMES





Barrio Logan Co	mmunity Plan	Update				
5 39 /21 ⇔ 113 /76 ∞ 20 /21 Sampson St	∾ 37 / 33 ⇔ 79 / 73 ☆ 15 / 0 Newton Ave	205 /105 ⇔ 59 /27 ∞ 10 /8 Sampson St	∾ 16/8 ⇔ 282/113 ☆ 53/27 Main St	27 95/25 95/26 97/26 97/27 97/26 97/27 97/26 97/27 97/2	8 37 /42 ⇔ 39 /17 ≥ 4 /4 Sicard St	≅ 3 / 1 ⇔ 164 / 125 ஜ 27 / 8 National Ave
23/35	7 / 13 2 48 / 103 5 32 / 20 2	81 / 134	52 /63	10 / 56 Ø € 17 / 1500 ↔ 28 / 5 & 7 / 14 / 1500 ↔ 10 / 1500 ↔ 17 / 14 / 15 8 8 8	20 / 41	48 /34 & 49 /45 & 12 /17 &
53 45 / 80 50 / 91 26th St 26th St	 № 48 / 54 ⇔ 222 / 123 ≥ 36 / 35 National Ave 	30	⇔ 279 / 239 ஜ 42 / 31 National Ave	31 ∞ 1 2 3 ∞ 1 2 3	32 99 / 20 Schey St	∾ 17 / 39 ⇔ 1573 / 598 Harbor Dr
26 / 35	31 / 54 % 55 / 68 ⁽¹⁾ 15 / 34 %	151/373 ⇔ 7/14 ∾ 5 9	28 / 37 &	70 / 226 ⇔ 70 / 226 ⇒ 70 / 226 ⇒ 70 / 226 ⇒ 70 / 226 ⇒ 70 / 226 ≈ 70 / 200	86 / 108	
33 307 /102 ↔ 213 /210 ↔ 118 /195 28th St	 I26 / 241 599 / 406 186 / 448 National Ave 	34 34 280 / 350 /	 is 130 / 80 ⇔ 80 / 70 ≥ 50 / 70 Boston Ave 	35 025/061 ↔ 190/290 ⊕ 500/300 ⊕ 90/150 Main St	8 22 /13 4 15 /12 2 339 /480 28th St	∾ 115 / 255 ⇔ 943 / 531 ∞ 18 / 18 Harbor Dr
106 / 94	33 / 18 ∞ 102 / 98 ⇔ 82 / 163 ∞	250 / 350	90 / 50	190 / 220 Ø № û Ø 50 / 40 ∿ 09 02 700 / 730 ↔ 00 00 700 / 730 ↔ 00 00	70 / 170	0/10 ≈ 6/133 ⇔ 2/0 ≈









Barrio Logan Co	mmunity Plan	Update					
37 384 284	 № 96 / 132 ⇔ 107 / 86 ☆ 20 / 20 Boston Ave 	1 ~ 1 M	 № 100 / 132 ⇔ 548 / 407 2 314 / 207 Main St 	33 33 33 33 33 33 33 33 33 33	0,55,60,205 120/205 120/205 120/210 0 ± 5/50 0 ± 25/50 250/140	6 60 /210 ⇔ 1040 /280 ⊗ 130 /310 32nd St	 5 390 / 460 ⇔ 756 / 434 ≥ 300 / 40 Harbor Dr
132 / 398	6 /10 2 186 /348 5 19 /45 2	153 / 733 ⇒ 200 / 139 ъ	110 / 193	65 / 115	70 /140 <i>~</i> 215/360 ⇔ 55 /620 ∻ 290 /240 ☆	90 / 160	30 /70 2 160 /690 4 30 /140 2
41 62 108 / 120 63 108 / 120 108 / 120 118 Ramps	∾ 107 / 154 ⇔ 516 / 373 Main St						
37 / 255							





FIGURE 6-4.3

Horizon Year (2030) with Alternative 2 Improvements Peak-Hour Turning Volumes (cont.)

			. ,		5-5 IVE 2 WITH II ION LOS SUM		INTS
			ALTERN	NATIVE 2	ALTERNAT IMPROV	IVE 2 WITH EMENTS	
	INTERSECTION	PEAK HOUR	DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	DESCRIPTION OF IMPROVEMENT
2	National Ave & 16th St	AM	53.1	F	12.0	В	Install Traffic Signal.
2	Ivational Ave & four St	PM	225.9	F	9.6	А	instan frame Signal.
		AM	ECL	F	12.6	В	
6	Harbor Dr & Sigsbee St	PM	ECL	F	7.3	А	Install Traffic Signal.
		AM	34.8	D	28.2	С	Install Traffic Signal. (This improvement requires Caltrans
7	Logan Ave & Beardsley St- I-5 SB ramp	PM	90.7	F	52.5	D	approval)
		AM	42.4	E	12.9	В	
8	National Ave & Beardsley St	PM	131.5	F	13.5	В	Install Traffic Signal.
			147.1	F	16.9	C	Modify raised median along Harbor Drive and restrict the
11	Harbor Dr & Beardsley St	AM	-				eastbound left-turn movements and southbound left-turn
		PM	50.6	F	11.3	В	movements. Add exclusive eastbound right-turn lane. Add northbound right-
13	Logan Ave & Cesar E. Chavez Pkwy	AM	31.8	С	27.1	С	turn overlap phase. (This improvement requires Caltrans
		PM	66.5	E	52.1	D	approval)
14	National Ave & Cesar E. Chavez Pkwy	AM	34.6	С	21.2	C	Add exclusive eastbound and westbound right-turn lanes. This improvement is recommended to mitigate a potential queing
		PM	52.5	D	24.4	С	impact.
16	Main St & Cesar E. Chavez Pkwy	AM	48.5	D	23.1	С	Add exclusive westbound right-turn lane. This improvement is
10		PM	52.0	D	18.7	В	recommended to mitigate a potential queing impact.
17	Harbor Dr & Cesar E. Chavez Pkwy	AM	118.8	F	47.9	D	Add second eastbound left-turn lane. Add a southbound right- turn overlap phase. Add exclusive westbound right-turn lane.
		РМ	103.2	F	41.1	D	Add exclusive northbound right-turn lane. In addition, extend the westbound left-turn pocket (to be done by Caltrans).
22		AM	178.3	F	10.6	В	Install Traffic Signal. Add northbound and southbound left-turn
23	Logan Ave & Sampson St	PM	240.2	F	24.0	С	lanes.
		AM	8.4	А	8.4	А	Eliminate northbound through movement. This improvement is
31	Main St & 26th St-Schley St	PM	8.2	А	8.2	А	not needed based on a delay impact. It is part of a truck route improvement.
		AM	88.3	F	48.1	D	Eliminate southbound left/through movement. Add southbound
32	Harbor Dr & Schley St	PM	30.3	С	16.7	В	right-turn overlap phase.
		AM	79.6	Е	39.0	D	
33	National Ave & 28th St	PM	66.8	Е	45.9	D	Add exclusive southbound right-turn lane.
24	Denter Are & 20th St	AM	27.8	С	22.3	С	Add southbound through lane and remove exclusive northbound
34	Boston Ave & 28th St	PM	68.8	Е	45.1	D	right-turn lane (part of 28th St improvements).Add exclusive eastbound right-turn lane.
36	Harbor Dr & 28th St (c)	AM	45.6	D	43.6	D	Add second eastbound and southbound left-turn lanes.
50		PM	97.4	F	83.0	F	Add second castoound and southoound ren-turn railes.
37	Boston Ave & I-5 SB On-ramp-29th St	AM	28.3	D	22.6	C	Install Traffic Signal. (This improvement requires Caltrans
		PM	ECL 120.6	F	44.5	D	approval)
39	32nd St & Wabash St	AM PM	130.6 85.1	F F	119.4 75.4	F	Construct a direct connector from Harbor Dr. to Wabash St.
		AM	85.1 144.3	F	121.3	F	Construct a direct connector from Harbor Dr. to Wabash St. (under study by Caltrans)
40	Harbor Dr & 32nd St (c)	PM	89.0	F	81.5	F	
42	L 5 CD - ff man & 20/1 Cr	AM		tion was not	14.1	В	Install Traffic Signal. (This improvement requires Caltrans
42	I-5 SB off-ramp & 28th St	PM		er this scenario	4.9	А	approval)

lotes:

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Bold values indicate intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0

(c) So careformions are observed in the intersection in the 2000 frighting capacity minimum and performed using Synchro Co (c) As part of Sanday's Draft 2005 RTP, agrade separation for the trolley lines at this intersection is being proposed under the hybrid network which is the preferred revenue constrained network. With the grade separation, the intersection would operate at LOS D or better. See appendix L for synchro results.

TABLE 6-6 HORIZON YEAR (2030) ALTERNATIVE 2 WITH IMPROVEMENTS ROADWAY SEGMENT LOS SUMMARY									
		HIGHEST ACCEPTABLE LOS D	LOS E	YEAR 2030 (ALTERNATIVE 2) WIT IMPROVEMENTS V/C RATIO					
ROADWAY SEGMENT	ROADWAY CLASSIFICATION (a)	VOLUME	CAPACITY	ADT	(b)	LOS			
Cesar Chavez Pkwy	I				1 1				
north of Logan Ave	3 Lane Collector (with TWLT)	18,750	22,500	15,800	0.702	D			
between Logan Ave and National Ave	3 Lane Urban Major	26,250	30,000	26,200	0.873	D			
between National Ave and Newton Ave between Newton Ave and Main St	3 Lane Urban Major 3 Lane Urban Major	26,250 26,250	30,000 30,000	26,100 21,800	0.870 0.727	D C			
between Newton Ave and Main St between Main St and Harbor Dr	3 Lane Major	26,250	30,000	12,700	0.423	В			
Sampson St	5 Laite Major	20,230	30,000	12,700	0.425	В			
between I-5 and National Ave	2 Lane Collector (No TWLT)	6,500	8,000	5,700	0.713	D			
between National Ave and Harbor Dr	2 Lane Collector (No TWLT)	6,500	8,000	8,700	1.088	F			
26th St		0,500	0,000	0,700	1.000	-			
between National Ave and Main St	2 Lane Collector (No TWLT)	6,500	8,000	8,300	1.038	F			
28th St		,	.,	.,					
between I-5 and Boston Ave	4 Lane Major Arterial	35,000	40,000	36,600	0.915	Е			
between Boston Ave and Main St	4 Lane Major Arterial	35,000	40,000	24,300	0.608	C			
between Main St and Harbor Dr	4 Lane Major Arterial	35,000	40,000	23,700	0.593	C			
29th St									
between Boston Ave and Main St (c)	2 Lane Collector (No TWLT)	6,500	8,000	6,800	0.850	Е			
32nd St									
between Main St and Wabash Blvd	2 Lane Collector (with TWLT)	13,000	15,000	14,100	0.940	Е			
between Wabash Blvd and Harbor Drive	4 Lane Major Arterial	35,000	40,000	26,700	0.668	С			
Rigel St									
between Main St and I-5	2 Lane Collector (No TWLT)	6,500	8,000	1,400	0.175	А			
Vesta St			-	-					
between Main St and I-5	2 Lane Collector (No TWLT)	6,500	8,000	6,600	0.825	Е			
Logan Ave									
between 17th St and Sigsbee St	2 Lane Collector (with TWLT)	13,000	15,000	10,800	0.720	D			
between Sigsbee St and Cesar Chavez Pkwy	2 Lane Collector (with TWLT)	13,000	15,000	17,000	1.133	F			
between Cesar Chavez Pkwy and 26th St	2 Lane Collector (with TWLT)	13,000	15,000	6,000	0.400	В			
National Ave			n	1					
between 16th St and Sigsbee St	2 Lane Collector (with TWLT)	13,000	15,000	13,200	0.880	E			
between Sigsbee St and Beardsley St	2 Lane Collector (with TWLT)	13,000	15,000	13,200	0.880	Е			
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (with TWLT)	13,000	15,000	17,100	1.140	F			
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (with TWLT)	13,000	15,000	9,200	0.613	С			
between Evans St and Sicard St	2 Lane Collector (with TWLT)	13,000	15,000	8,900	0.593	С			
between Sicard St and 27th St	2 Lane Collector (with TWLT)	13,000	15,000	10,200	0.680	D			
Boston Ave		1	1	1					
between 28th and 29th St (c)	2 Lane Collector (No TWLT)	6,500	8,000	16,400	2.050	F			
between 29th St and 32nd St	2 Lane Collector (No TWLT)	6,500	8,000	8,900	1.113	F			
Main St		6.600	0.000		0.510				
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	6,500	8,000	5,700	0.713	D			
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT)	6,500	8,000	9,400	1.175	F			
between Evans St and 26th St between 26th St and 28th St	2 Lane Collector (with TWLT)	13,000	15,000	15,400	1.027	F			
between 26th St and 28th St between 28th and 29th St	3 Lane Collector (No TWLT) 4 Lane Collector (No TWLT)	9,750	11,250 15,000	13,600	1.209 0.933	F			
between 28th and 29th St between 29th St and 32nd St	4 Lane Collector (No TWLT) 3 Lane Collector (No TWLT)	13,000 9,750	15,000	14,000 19,300	1.716	E F			
between 29th St and 32nd St between 32nd St and Rigel St	4 Lane Collector (No TWLT)	13,000	11,250	25,800	1.716	F			
between Rigel St and Una St	2 Lane Collector (with TWLT)	13,000	15,000	20,300	1.353	F			
between Una St and I-5 SB Off Ramp	2 Lane Collector (with TWLT) 2 Lane Collector (with TWLT)	13,000	15,000	17,800	1.333	F			
Harbor Dr	2 Lanc Conceloi (with 1 wL1)	15,000	15,000	17,000	1.10/	r			
between Beardsley St and Cesar Chavez Pkwy	4 Lane Major Arterial	35,000	40,000	30,400	0.760	D			
between Cesar Chavez Pkwy and Sampson St	4 Lane Major Arterial	35,000	40,000	26,000	0.650	C			
between Sampson St and Schley St	4 Lane Major Arterial	35,000	40,000	24,800	0.620	С			
between Schley St and 28th St	4 Lane Major Arterial	35,000	40,000	20,200	0.505	В			
between 28th St and 32nd St	4 Lane Major Arterial	35,000	40,000	28,100	0.703	C			
	4 Lane Major Arterial	7				-			

Bold values indicate roadway segments operating at LOS E or F.

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(a) Roadway Classification are proposed under the Mobility Element.
 (b) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.

c) This segment was analyzed assuming a rerouting of traffic produced by the improvements along 28th Street and Main Street. A total of 1000 ADT were moved from Boston Avenue between 28th St and 29th St to Main St and 29th St.

K:\SND_TPTO\095707000\Excel\[707000RS01.xlsm]2030 ALT 2 with Impr

7.0 ADDITIONAL TOPICS

The following section provides a discussion regarding the following additional topics: Intersection queuing, parking, transit and truck traffic.

<u>Queuing</u>

A queuing analysis was conducted at all signalized intersection within the study area for the Horizon Year with Alternative 1 and 2 with the proposed improvements. The purpose of the analysis was to identify locations where the calculated level of service may not accurately reflect the actual delay experienced by drivers and additional improvements may be appropriate. The queuing analysis was conducted using Synchro 6.0 software. A copy of the queuing analysis worksheets can be found in **Appendix J**. The following intersections were identified as having potential queuing that would exceed the available storage capacity for at least one of the peak-hour periods evaluated:

- Kearney Street and Cesar Chavez Parkway: The analysis shows that the 95th percentile queue for the westbound movement would exceed the available storage capacity during both peak-hour periods, while the northbound movement would exceed the available storage capacity during the afternoon peak-hour period. The potential queuing is caused by vehicles exiting the I-5 NB off-ramp and turning south on Cesar Chavez Parkway and by vehicles turning left from Cesar Chavez Parkway traveling west along Kearny Street. Due to the signal spacing between this intersection and Logan Avenue and the I-5 NB off-ramp, the storage capacity for the northbound and westbound movement cannot be extended without major reconstruction of the I-5 bridge over Cesar Chavez Parkway and the ramp connectors to the SR-75 freeway. It is anticipated that this potential queuing problem would only be found during the morning and afternoon peak-hour periods. Additional improvements to this locations based on potential queuing are not recommended.
- Logan Avenue and Cesar Chavez Parkway: The analysis shows that the 95th percentile queue for several movements would exceed the available storage capacity during both peak-hour periods. Due to the signal spacing between intersections due to the grid street network, the storage capacity of this intersection cannot be extended. It is anticipated that this potential queuing problem would only be found during the morning and afternoon peak-hour periods. Additional improvements to this location based on potential queuing are not recommended.
- National Avenue and Cesar Chavez Parkway: The analysis shows that the 95th percentile queue for the eastbound left-turn movement and the southbound movements would exceed the available storage capacity during both peak-hour periods. Due to the signal spacing between this intersection and Logan Avenue and Main Street, the storage capacity for the northbound movement and the southbound movements cannot be extended. A potential mitigation for the southbound queuing could be the removal of parking during the peak-hour periods along the west side of Cesar Chavez Parkway. The peak-hour parking removal would provide the room for an additional southbound lane and provide additional queuing capacity. Additional improvements to this location based on potential queuing are not recommended.
- Newton Avenue and Cesar Chavez Parkway: The analysis shows that the 95th percentile queue for the southbound movements would exceed the available storage capacity during both peakhour periods. Due to the signal spacing between this intersection and National Avenue, the storage capacity for the southbound movements cannot be extended. A potential mitigation for

the southbound queuing could be the removal of parking during the peak-hour periods along the west side of Cesar Chavez Parkway. The peak-hour parking removal would provide the room for an additional southbound lane and provide additional queuing capacity. Additional improvements to this location based on potential queuing are not recommended.

- Main Street and Cesar Chavez Parkway: The analysis shows that the 95th percentile queue for the southbound movements would exceed the available storage capacity during both peak-hour periods. Due to the signal spacing between this intersection and Newton Avenue, the storage capacity for the southbound movements cannot be extended. A potential mitigation for the southbound queuing could be the removal of parking during the peak-hour periods along the west side of Cesar Chavez Parkway. The peak-hour parking removal would provide the room for an additional southbound lane and provide additional queuing capacity. Additional improvements to this location based on queuing are not recommended.
- Harbor Drive and Cesar Chavez Parkway: The analysis shows that the 95th percentile queue for the westbound left-turn movements would be approximately 200 feet during the morning peakhour periods. As part of the Port of San Diego/Caltrans truck access improvements, the westbound left-turn pocket will be extended to accommodate the anticipated queuing at this intersection. In addition to the westbound left-turn movements, the southbound right turn movement could have a maximum potential queue of approximately 600 feet during the morning peak-hours. Due to the signal spacing between this intersection and Main Street and the existing MTS trolley lines, the storage capacity for the southbound right-turn movement cannot be extended. Additional improvements to this location based on potential queuing are not recommended.
- <u>National Avenue and 28th Street</u>: The analysis shows that the 95th percentile queue for the eastbound left-turn, the westbound left-turn and the southbound through movement would exceed the available storage capacity during both peak-hour periods. In order to mitigate queuing at this location, an additional westbound lane would need to be constructed. The additional westbound lane would require additional right-of-way along the north side of National Avenue. This improvement would significantly affect the existing properties along the north side of National Avenue. Due to physical constraints, the additional westbound lane is not recommended at this time. Additional improvements to this location based on potential queuing are not recommended.
- Boston Avenue and 28th Street: The analysis shows that the 95th percentile queue for the southbound left-turn, the northbound thru and the eastbound movements would exceed the available storage capacity during the afternoon peak-hour. Physical constraints at this intersection due to the distance to adjacent intersections suggest that the storage capacity for any of those movements cannot be extended. Additional physical improvements to this location based on queuing are not recommended.
- Main Street and 28th Street: The analysis shows that the 95th percentile queue for the eastbound left-turn and the southbound movements would exceed the available storage capacity during the afternoon peak-hour period. Physical constraints at this intersection due to the distance to adjacent intersections suggest that the storage capacity for any of those movements cannot be extended. It is anticipated that this potential queuing problem would only be found during the morning and afternoon peak-hour periods. Additional physical improvements to this location based on potential queuing are not recommended.

- Main Street and 32nd Street: The analysis shows that the 95th percentile queue for the westbound left-turn, the northbound left-turn and the southbound left-turn movements would exceed the available storage capacity during the afternoon peak-hour period. Physical constraints at this intersection due to access to surrounding buildings suggest that the storage capacity for any of those movements cannot be extended. Additional improvements to this location based on potential queuing are not recommended.
- <u>Main Street and I-15 Ramps</u>: The analysis shows that the 95th percentile queue for the **eastbound** left-turn movement would be approximately 220 feet long and would exceed the available storage capacity of 150 feet. In order to improve the storage capacity for the eastbound movement, the bridge over the Chollas Creek would need to be widened. This improvement is not recommended. The queuing for the eastbound left-turn movement would only be experienced during the peakhour periods. Additional improvements to this location based on queuing are not recommended.
- <u>32nd Street and Norman Street Wabash Street</u>: The analysis shows that the 95th percentile queue for the **westbound** and **southbound** movements would exceed the available storage capacity. This intersection is being studied in an on-going Caltrans report. The latest report includes the installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15. Another improvement under study is the Vesta Street Overcrossing at Harbor Drive connecting the wet and dry sides of the Naval Base San Diego. On November 1, 2010 the Navy temporarily closed the eastern leg (Norman Scott Road) of the 32nd Street/Norman Street-Wabash Street intersection to improve safety. The Navy is monitoring traffic to determine if this closure should remain. A preliminary analysis indicates that the projects under study would improve the intersection to acceptable levels and decrease the potential queuing problems.
- <u>32nd Street and Harbor Drive</u>: The analysis shows that the 95th percentile queue would exceed the available storage capacity of several movements. This intersection is being studied in an ongoing Caltrans report. The latest report includes the installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15. Another improvement under study is the Vesta Street Overcrossing at Harbor Drive connecting the wet and dry sides of the Naval Base San Diego. On November 1, 2010 the Navy temporarily closed the eastern leg (Norman Scott Road) of the 32nd Street/Norman Street-Wabash Street intersection to improve safety. The Navy is monitoring traffic to determine if this closure should remain. In addition to the Port of San Diego and Navy improvements, the preferred revenue constrained network for the RTP, approved by SANDAG's board for further study, includes the grade separation of the trolley tracks at the 32nd Street and Harbor Drive intersection. A preliminary analysis indicates that the mentioned projects would improve the intersection to acceptable levels and decrease the potential queuing problems.

In order to verify whether or not the potential queuing at the above listed intersections would cause the analysis results previously reported to be understated, Synchro 6.0 intersection analysis methodology was used. The Synchro 6.0 methodology calculates a "queuing delay" for each movement of the intersection, this calculation is not included in the HCM level of service analysis. The queuing delay accounts for queuing interaction at intersections and looks at how queues can reduce capacity through spillback, starvation, and storage blocking between lane groups. A review of Synchro's queuing reports indicated that the following intersections would have a "queuing delay" that could affect the level of service and capacity of the intersections:

 Logan Avenue and Cesar Chavez Parkway (Northbound right-turn movement during the afternoon peak-hour period);

- Main Street and Cesar Chavez Parkway (Southbound through movement during both peak-hour periods);
- Boston Avenue and 28th Street (Northbound through movement during the afternoon peak-hour period); and
- Main Street and 28th Street (Eastbound left-turn movement during the afternoon peak-hour period)

When comparing the average intersection delay reported by both the HCM and Synchro 6.0 methodologies for the above listed intersections, it was found that the LOS results at the Boston Avenue/28th Street and Main Street/28th Street intersection would decrease from LOS D to LOS E due to potential queue interaction. These intersections are shown in bold. The level of service results for the other two intersections would not worsen by considering queue interaction.

To mitigate the potential capacity decrease at these intersections along 28th Street due to queue interaction, it is recommended that the signal timing along the 28th Street corridor between Harbor Drive and National Avenue be synchronized in a way to maximize vehicular progression through the closely spaced intersections, while providing queue clearance. The coordination along 28th Street would be enhanced with the grade separation of the trolley lines at the intersection of Harbor Drive and 28th Street assumed in the preferred revenue constrained network for the RTP, approved by SANDAG's board for further study on December 17th, 2010. **Appendix L** includes the HCM and queuing analysis worksheets for the intersections along Cesar Chavez Parkway, 28th Street and 32nd Street with the following improvements assumed to be completed:

- Additional southbound lane along Cesar Chavez Parkway between Logan Avenue and Main Street. This additional lane could be provided by the removal of on-street parking along the west side of Cesar Chavez Parkway during the morning and afternoon peak-hour periods;
- Grade separation for the trolley tracks at the intersection of 28th Street and Harbor Drive;
- Grade separation for the trolley tracks at the intersection of 32nd Street and Harbor Drive;
- Traffic signal coordination along 28th Street between National Avenue and Harbor Drive;
- Traffic signal coordination along 32nd Street between Harbor Drive and Wabash Avenue; and
- Closure of the east leg of Norman Street at the intersection of 32nd Street and Norman Street-Wabash Street, recently implemented on a temporary/trial basis by the Navy.

As shown in Appendix L, the improvements listed above would decrease the potential queuing problems for the critical movements. Additional potential queuing may be experienced along minor movements due to signal coordination parameters. It is anticipated that a detailed coordinated plan would be evaluated in the future based on actual traffic volumes to better serve the demand of each corridor system.

Parking 197

Parking in Barrio Logan is accommodated through on-site parking, leased surface parking lots, and onstreet parking. The lack of adequate on-street and structured parking is a primary issue in Barrio Logan. This shortage of parking is due to the lack of on-site parking being provided for workers at harbor-related industries. These workers use parking lots along the north side of Harbor Drive and surface lots within Barrio Logan, which have been leased by their employers, and on-street parking in Barrio Logan. The use of on-street parking has led to the City establishing residential parking districts in Barrio Logan to ensure that residential areas have adequate parking. In order to implement the Bayshore Bikeway through the community, approximately 1,350 spaces of the leased harbor-working parking would be lost, potentially resulting in further demands for on-street parking. In order to address parking deficiencies, the community plan identifies the following strategies:

- Require new development to provide adequate off-street parking to serve their needs
- Encourage the development of multi-story parking structures within the identified Transition Zone along Main Street between Evans Street and 28th Street to provide for additional parking for Port tenants, thereby reducing the potential for spillover onto on-street parking.
- Work with the Navy and Port of San Diego to enhance their Transportation Demand Management (TDM) strategies for reducing single occupant vehicle travel (and parking demand). Strategies increase use of van pools or car pools, shuttle vehicles from transit stations and park and ride lots, shared use parking for workers use during work hours and for residential and recreational use outside of work hours, and bicycle storage facilities. Currently there two major employers near Barrio Logan who participate in the TDM programs:
 - NASSCO: The approximately 3,500 employees of NASSCO have accessibility to parking spots for vanpools. The company subsidizes 25% of the cost of transit pass and/or vanpool cost. The company also provides bike racks and pre-tax payroll deductions for the purchase of transit passes, and a commuter information system for users of the TDM program.
 - Naval Base San Diego: The approximately 42,000 military personnel and 7,000 civilian workers have access to vanpools and transit passes. Military personnel are able to apply for the Transportation Incentive Program (TIP) established by the Navy. The TIP is designed to pay for mass transit cost incurred by personnel in their local commute from residence to permanent duty station. As of January 2011 participants of the TIP program are eligible for transit benefits up to \$120.00 per month for specific pre-approved commuter mass transit transportation cost.

<u>Transit</u>

The Barrio Logan Community is well served by Metropolitan Transit System existing transit service that is expected to be maintained and enhanced in the future. The Blue Line which operates with Light Rail Transit (LRT) service is expected to see both increases in frequency and express service. The express service will not stop at every station, as a means to speed travel times. In addition, LRT grade separations are planned at 28th Street and at 32nd Street. A potential upgrade in service from Bus to Rapid Bus operation is planned for Route 11 which passes through Barrio Logan using Logan Avenue and National Avenue. All these improvements are listed in the "Hybrid constrained scenario" included in SANDAG's 2050 Regional Transportation Plan approved in December 17th, 2010.

The Barrio Logan Community Plan proposes a land use pattern that takes advantage of the existing and future transit network. The plan increases the amount of residential and employment use within walking distance of transit service. This, along with planned increases in transit service, is expected to result in an increase in transit ridership in Barrio Logan. According to travel forecast models, this plan is expected to increase transit use from an existing level of 3.8 percent of the total travel to 3.9 percent for Alternative 1 and 4.1 percent for Alternative 2. This increase in transit use is expected to reduce the amount of automobile travel, which will have positive benefits to air quality and global warming.

Truck Routes

Figure 7-1 illustrates the recommended truck routes for the community of Barrio Logan. As shown in the figure, the recommended truck routes within the community include Harbor Drive, 28th Street, 32nd Street and Wabash Avenue. These facilities should provide sufficient truck access from the industrial sites along the Port of San Diego to the Interstate freeway facilities surrounding the community.

Figure 7-2 illustrates the anticipated truck volumes along the recommended truck routes for Alternative 1 land use scenario. **Figure 7-3** illustrates the anticipated truck volumes along the recommended truck routes for Alternative 2 land use scenario.

Intersection and roadway segment improvements were identified to encourage truck traffic to use the recommended truck routes. The following are the locations where improvements are recommended:

- Prohibition of northbound through movements at the intersection of Main Street/ 26th Street/ Schley Street;
- Addition of a second eastbound left-turn lane at the intersection of Harbor Drive and 28th Street;
- Addition of a northbound auxiliary lane along 28th Street between Harbor Drive and Main Street.
 Striping changes along Main Street between 28th Street and 29th Street to accommodate turning
- Striping changes along Main Street between 28th Street and 29th Street to accommodate turning movement onto 29th Street (This improvements should be coordinated with the signalization of Boston Avenue and the I-5 SB on-ramps);
- Signalization of the intersection of Boston Avenue and 29th Street/I-5 Southbound on-ramps;
- Caltrans improvements at the Harbor Drive and 32nd Street and 32nd Street and Wabash Avenue intersections;
- Grade separation of the trolley tracks at the 28th Street and Harbor Drive and 32nd Street and Harbor Drive intersections (to be completed by SANDAG and part of the 2050 draft RTP);
- Addition of the exclusive northbound right-turn lane and extension of the westbound left-turn lane at the intersection of Harbor Drive and Cesar Chavez Parkway (to be completed by Caltrans); and
- Implementation of context sensitive solutions to discourage truck traffic along Cesar Chavez Parkway (to be completed by Caltrans).

A complete description of the improvements is included in the mitigation sections of Chapter 5 and 6. Conceptual figures showing the recommended improvements are included in **Appendix K**.







8.0 FINDINGS AND CONCLUSIONS

The following section provides a summary of the key findings and study recommendations and includes a summary table that compares the results from the different scenarios.

Summary of Traffic Generation

Table 8-1 presents a comparison between the land uses alternatives included in this study. As shown in the table, the 2003 Base Year scenario is estimated to generate a total of 103,777 average daily trips. The build out of the Adopted Community Plan Land Uses could generate a total of 180,666 average daily trips, which would represent a 74 percent increase over the 2003 Base Year scenario.

The build out of the proposed Alternative 1 land use scenario would generate a total 137,267 average daily trips which would represent a 32 percent increase from the 2003 Base Year scenario. Compared to the Adopted Community Plan, Alternative 1 would represent a 24 percent decrease of the total trip generation.

The build out of the proposed Alternative 2 land use scenario would generate a total 152,430 average daily trips which would represent a 47 percent increase from the 2003 Base Year scenario. Compared to the Adopted Community Plan, Alternative 2 would represent a 16 percent decrease of the total trip generation. Alternative 2 would generate 11 percent more vehicle trips than Alternative 1.

It should be noted that both proposed land use alternatives would generate 16-24 percent less total traffic than the Adopted Community Plan, and this document identifies transportation-related improvements beyond what is included in the current facility finance plan.

Summary of Intersection Analyses

Table 8-2 shows the summary of the peak-hour intersection analysis for Alternative 1 Land Use scenario. As shown in the table, Alternative 1 would have significant impact at 14 of the 41 intersections analyzed.

Table 8-3 shows the summary of the peak-hour intersection analysis for Alternative 2 Land Use scenario. As shown in the table, Alternative 2 would have significant impact at 16 of the 41 intersections analyzed. In addition to the intersections identified for Alternative 1, Alternative 2 would also have a significant impact at the Main Street and Cesar Chavez Parkway and Boston Avenue and 28th Street intersections.

As shown in the table, the recommended improvements associated with Alternative 1 and Alternative 2 would mitigate all the peak-hour delay based significant impacts at intersections with the exception of the following locations:

- Harbor Drive and 28th Street (will continue to operate at LOS E during the afternoon peak-hour period);
- 32nd Street and Wabash Street (will continue to operate at LOS F and LOS E during the morning and afternoon peak-hour periods, respectively); and
- Harbor Drive and 32nd Street (will continue to operate at LOS F during both peak-hour periods).

The Harbor Drive/32nd Street and 32nd Street/Wabash Street intersections are being studied further in an on-going Caltrans study. The latest report includes the installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15. Another improvement under study is the

SUMMARY OF TRI	TABLE 8-1 SUMMARY OF TRIP GENERATIONS FOR EACH HORIZON YEAR ALTERNATIVE	E 8-1 r Each Horizon ye	AR ALTERNATIVE	
	2003 BASE YEAR SCENARIO	ADOPTED COMMUNITY PLAN	ALTERNATIVE 1	ALTERNATIVE 2
Total Daily Trip Generation	103,777	180,666	137,267	152,430
Commission to Evicting		76,889	33,490	48,653
		74%	32%	47%
Commission to Advated Commission Dlon			-43,399	-28,236
			-24%	-16%
Louison Altonnoll A or Corritonnol A				15,163
				11%

		SU	MMARY OF INTER	TABLE 8-2 RSECTION ANALYS	SIS FOR ALTERNATIVE 1		
	INTERSECTION	PEAK HOUR	BEFORE IMPROVEMENTS LOS (a)	DOES THE PROJECT CAUSE A SIGNIFICANT IMPACT?	RECOMMENDED IMPROVEMENT	AFTER IMPROVEMENTS LOS (a)	IS THE IMPACT MITIGATE ?
1	Commercial St & 16th St	AM PM	B	NO NO	N/a	B C	N/a
2	National Ave & 16th St	AM PM	F	YES	Install Traffic Signal.	B	YES
3	National Ave & Sigsbee St	AM PM	A A A	YES NO NO	N/a	A A A	N/a
4	Newton Ave & Sigsbee St	AM	А	NO	N/a	А	N/a
5	Main St & Sigsbee St	PM AM PM	A A A	NO NO NO	N/a	A A A	N/a
6	Harbor Dr & Sigsbee St	AM PM	F F	YES YES	Install Traffic Signal.	A B A	YES
7	Logan Ave & Beardsley St- I-5 SB ramp	AM	D F	NO YES	Install Traffic Signal. (This improvement requires Caltrans approval)	C D	YES
8	National Ave & Beardsley St	AM PM	E	YES	Install Traffic Signal.	B	YES
9	Newton Ave & Beardsley St	AM PM	A	NO	N/a	A	N/a
10	Main St & Beardsley St	AM PM	C A	NO NO	N/a	C A	N/a
11	Harbor Dr & Beardsley St	AM PM	F	YES YES	Modify raised median along Harbor Drive and restrict the eastbound left-turn movements and	C B	YES
12	Kearney St & Cesar E. Chavez Pkwy	AM PM	D C	NO	southbound left-turn movements. N/a	D C	N/a
13	Logan Ave & Cesar E. Chavez Pkwy	AM	С	NO	Add exclusive eastbound right-turn lane. Add northbound overlap phase. (This improvement	c	YES
		PM AM	E	YES NO	requires Caltrans approval) Add exclusive eastbound and westbound right-	D B	
14	National Ave & Cesar E. Chavez Pkwy	PM	D	NO	turn lanes. This improvement is recommended to mitigate a potential queing impact.	C	YES
15	Newton Ave & Cesar E. Chavez Pkwy	AM PM	A B	NO NO	N/a	A B	N/a
16	Main St & Cesar E. Chavez Pkwy	AM	D	NO	Add exclusive westbound right-turn lane. This improvement is recommended to mitigate a	С	YES
		PM	D	NO	potential queing impact. Add second eastbound left-turn lane, a	В	
17	Harbor Dr & Cesar E. Chavez Pkwy	AM PM	F	YES	southbound right-turn overlap phase and a northbound exclusive right-turn lane. In addition, extend the westbound left-turn pocket (to be done	D	YES
18	Logan Ave & I-5 SB On-ramp	AM	А	NO	by Caltrans). N/a	A	N/a
19	National Ave & SR-75 Off-ramp	PM AM	C B	NO NO	N/a	C B	N/a
20	National Ave & Evans St	PM AM PM	B B C	NO NO NO	N/a	B B C	N/a

Γ

Bold values indicate intersections operating at LOS E or F (a) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0

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		SUMN	ARY OF INTERSE	CTION ANALYSIS	FOR ALTERNATIVE 1 (cont.)		
	INTERSECTION	PEAK	BEFORE IMPROVEMENTS	DOES THE PROJECT CAUSE A SIGNIFICANT		AFTER IMPROVEMENTS	IS THE IMPAC MITIGAT 2
	INTERSECTION	HOUR AM	LOS (a) B	IMPACT? NO	RECOMMENDED IMPROVEMENT	LOS (a) B	?
21 N	Newton Ave & Evans St	PM	B	NO	N/a	B	N/a
		AM	В	NO		В	27/
22 N	Aain St & Evans St	PM	В	NO	N/a	В	N/a
		AM	F	YES		В	
23 L	ogan Ave & Sampson St	PM	F	YES	Install Traffic Signal. Add northbound and southbound left-turn lanes.	С	YES
24 N	Intional Ave & Compson St	AM	А	NO	N/a	А	N/a
24 N	Vational Ave & Sampson St	PM	А	NO	1N/a	А	IN/A
25 N	Jewton Ave & Sampson St	AM	А	NO	N/a	А	N/a
2.5 N	Action Ave & Sampson St	PM	А	NO	11///a	А	IN/A
26 N	Aain St & Sampson St	AM	В	NO	N/a	В	N/a
20	nam St & Sampson St	PM	В	NO	iv/a	В	1 N /a
27 H	Iarbor Dr & Sampson St	AM	С	NO	N/a	С	N/a
21 1	larbor Dr & Sampson St	PM	D	NO	1V/a	D	IN/a
28 N	ational Ave & Sicard St	AM	В	NO	N/a	В	N/a
20 1	ational Ave & Sicard St	PM	В	NO	19/8	В	IN/a
29 N	ational Ave & 26th St	AM	А	NO	N/a	А	N/a
29	ational Ave & 20th St	PM	В	NO	1V/a	В	IN/a
30 N	ational Ave & I-5 SB Off-ramp	AM	В	NO	N/a	В	N/a
50 1	ational Ave & 1-5 SB On-ramp	PM	С	NO	IN/a	С	IN/a
31 M	lain St & 26th St-Schley St	AM	А	NO	Eliminate northbound through movement. This improvement is not needed based on a delay	А	YES
	,	PM	А	NO	impact. It is part of a truck route improvement.	. А	115
22 11	onkon Da & Soklay St	AM	Е	YES	Eliminate southbound left/through movement.	С	YES
32 H	arbor Dr & Schley St	PM	С	NO	Add southbound right-turn overlap phase.	В	TES
22 N	ational Asso & 20th St	AM	F	YES		D	VEC
33 N	ational Ave & 28th St	PM	E	YES	Add exclusive southbound right-turn lane.	D	YES
34 B	oston Ave & 28th St (b)	AM	D	NO	Add southbound through lane and remove	С	YES
54 B	051011 Ave & 2011 St (0)	PM	D	NO	exclusive northbound right-turn lane.	D	IES
35 M	Iain St & 28th St (b)	AM	С	NO	N/a	С	N/a
55 M	ann 51 & 2011 51 (D)	PM	D	NO	in/a	D	IN/A
36 H	arbor Dr & 28th St (c)	AM	D	NO	Add second eastbound and southbound left-turn	D	NO
n		PM	F	YES	lanes.	Е	NO
37 B	oston Ave & I-5 SB On-ramp-29th St	AM	С	NO	Install Traffic Signal. (This improvement requires	С	YES
م / ر	oston Ave & 1-5 55 On-tamp-27dl St	PM	F	YES	Caltrans approval)	С	1120
38 M	Iain St & 32nd St	AM	С	NO	N/a	С	N/a
50 IV		PM	С	NO	19/4	С	11/2
39 32	2nd St & Wabash St	AM	F	YES		F	NO
. 34		PM	F	YES	Construct a direct connector from Harbor Dr. to	Е	NO
40 H	arbor Dr & 32nd St (c)	AM	F	YES	Wabash St. (under study by Caltrans)	F	NO
-0 п		PM	F	YES		F	NO
41 M	lain St & I-15 Ramps	AM	В	NO	N/a	В	N/a
-1 IV	iam 50 & 1-15 Kamps	PM	В	NO	1N/a	В	IN/a

TABLE 8-2

Notes:

Bold values indicate intersections operating at LOS E or F

(a) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0

(a) LOS calculations are based on the methodology outlined in the 2000 rightwy Capacity vialua and performed using synchro 6.0 (b) The intersection may not operate as well as indicated due to potential queuing. See text of the report for additional explanation. (c) As part of Sandag's Draft 2008 PTP, a grade separation for the trolley lines at this intersection is being proposed under the hybrid network which is the preferred revenue constrained network. With the grade separation, the intersection would operate at LOS D or better. See appendix L for synchro results. Shaded cells indicates that the intersection is not fully mitigated.

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		SU	MMARY OF INTER	TABLE 8-3 RSECTION ANALY:	SIS FOR ALTERNATIVE 2		
	INTERSECTION	PEAK	BEFORE IMPROVEMENTS	DOES THE PROJECT CAUSE A SIGNIFICANT IMPACT?		AFTER IMPROVEMENTS	IS THE IMPACT MITIGAT
		HOUR AM	LOS (a) B	NO	RECOMMENDED IMPROVEMENT	LOS (a) B	:
1	Commercial St & 16th St	PM	С	NO	N/a	С	N/a
2	National Ave & 16th St	AM	F	YES	Install Traffic Signal.	В	YES
2	National Ave & Tour St	PM	F	YES	instan Tranc Signal.	А	11.5
3	National Ave & Sigsbee St	AM	А	NO	N/a	А	N/a
-		PM	Α	NO		Α	
4	Newton Ave & Sigsbee St	AM	A	NO	N/a	A	N/a
		PM AM	A	NO NO		A	
5	Main St & Sigsbee St	PM	A	NO	N/a	A	N/a
		AM	F	YES		B	
6	Harbor Dr & Sigsbee St	PM	F	YES	Install Traffic Signal.	A	YES
-		AM	D	NO	Install Traffic Signal. (This improvement requires	С	
7	Logan Ave & Beardsley St- I-5 SB ramp	PM	F	YES	Caltrans approval)	D	YES
8	National Ave & Beardsley St	AM	Е	YES	Install Traffic Signal.	В	YES
0	National Ave & Deardsley St	PM	F	YES	instan Trance Signal.	В	11.5
9	Newton Ave & Beardsley St	AM	Α	NO	N/a	А	N/a
<u></u>		PM	А	NO		А	
10	Main St & Beardsley St	AM	С	NO	N/a	С	N/a
		PM	A	NO	Modify migad modion along Harbor Drive and	A	
11	Harbor Dr & Beardsley St	AM	F	YES	Modify raised median along Harbor Drive and restrict the eastbound left-turn movements and	С	YES
	······································	PM	F	YES	southbound left-turn movements.	В	
12	Kearney St & Cesar E. Chavez Pkwy	AM	D	NO	N/a	D	N/a
12	Reality St & Cesa E. Chavez I kwy	PM	D	NO	1774	D	10.0
13	Logan Ave & Cesar E. Chavez Pkwy	AM	С	NO	Add exclusive eastbound right-turn lane. Add northbound right-turn overlap phase. (This	С	YES
		PM	Е	YES	improvement requires Caltrans approval)	D	1
14	National Ave & Cesar E. Chavez Pkwy	AM	С	NO	Add exclusive eastbound and westbound right- turn lanes. This improvement is recommended to	С	YES
14	National Ave & Cesai E. Chavez F kwy	PM	D	NO	mitigate a potential queing impact.	С	TES
15	Newton Ave & Cesar E. Chavez Pkwy	AM	А	NO	N/a	В	N/a
		PM	В	NO		В	
16	Main St & Cesar E. Chavez Pkwy	AM	D	NO	Add exclusive westbound right-turn lane. This improvement is recommended to mitigate a	С	YES
		PM	D	NO	potential queing impact.	В	
17	Harbor Dr & Cesar E. Chavez Pkwy	AM	F	YES	Add second eastbound left-turn lane. Add a southbound right-turn overlap phase. Add exclusive westbound right-turn lane. Add	D	YES
		РМ	F	YES	exclusive northbound right-turn lane. In addition, extend the westbound left-turn pocket (to be done by Caltrans).	D	120
18	Logan Ave & I-5 SB On-ramp	AM	А	NO	N/a	А	N/a
10	Logan Ave & 1-3 SB On-ramp	PM	В	NO	iN/a	В	IN/â
19	National Ave & SR-75 Off-ramp	AM	В	NO	N/a	В	N/a
.,	National Ave & Six-75 Oli-tallip	PM	В	NO	14/ a	В	1 1 /d
20	National Ave & Evans St	AM	В	NO	N/a	В	N/a
-		PM	С	NO		С	

(a) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0

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		SUMN	IARY OF INTERSE	TABLE 8-3 CTION ANALYSIS	FOR ALTERNATIVE 2 (cont.)		
	INTERSECTION	PEAK HOUR	BEFORE IMPROVEMENTS LOS (a)	DOES THE PROJECT CAUSE A SIGNIFICANT IMPACT?	RECOMMENDED IMPROVEMENT	AFTER IMPROVEMENTS LOS (a)	IS THE IMPACT MITIGATED ?
21	Newton Ave & Evans St	AM PM	B	NO NO	N/a	B	N/a
22	Main St & Evans St	AM	C	NO	N/a	C	N/a
22	Wall St & Evals St	PM	C	NO	iva	С	11/4
23	Logan Ave & Sampson St	AM PM	F	YES YES	Install Traffic Signal. Add northbound and southbound left-turn lanes.	B	YES
24	National Ave & Sampson St	AM PM	A	NO NO	N/a	A	N/a
	l	AM	A	NO		A	
25	Newton Ave & Sampson St	PM	A	NO	N/a	A	N/a
26	Main St & Sampson St	AM PM	B	NO NO	N/a	B	N/a
27	Harbor Dr & Sampson St	AM	С	NO	N/a	С	N/a
	-	PM	D	NO		D	
28	National Ave & Sicard St	AM PM	B	NO NO	N/a	B	N/a
29	National Ave & 26th St	AM PM	AB	NO NO	- N/a	AB	N/a
30	National Ave & I-5 SB Off-ramp	AM	В	NO	N/a	В	N/a
	······································	PM	С	NO		С	
31	Main St & 26th St-Schley St	AM	А	NO	Eliminate northbound through movement. This improvement is not needed based on a delay	А	YES
		PM	А	NO	impact. It is part of a truck route improvement.	А	
32	Harbor Dr & Schley St	AM	F	YES	Eliminate southbound left/through movement.	D	YES
	,	PM	C	NO	Add southbound right-turn overlap phase.	В	
33	National Ave & 28th St	AM PM	E	YES YES	Add exclusive southbound right-turn lane.	D D	YES
	(b)	AM	С	NO	Add southbound through lane and remove	С	
34	Boston Ave & 28th St	РМ	Е	YES	exclusive northbound right-turn lane (part of 28th St improvements).Add exclusive eastbound right- turn lane.	D	YES
35	Main St & 28th St (b)	AM PM	D D	NO NO	N/a	D D	N/a
36	Harbor Dr & 28th St (c)	AM	D F	NO	Add second eastbound and southbound left-turn lanes.	D F	NO
		PM AM	F D	YES NO		F C	
37	Boston Ave & I-5 SB On-ramp-29th St	AM PM	F	YES	Install Traffic Signal. (This improvement requires Caltrans approval)	D	YES
38	Main St & 32nd St	AM PM	C C	NO NO	N/a	C C	N/a
39	32nd St & Wabash St	AM	F	YES		F	NO
		PM AM	F	YES	Construct a direct connector from Harbor Dr. to Wabash St. (under study by Caltrans)	E F	
40	Harbor Dr & 32nd St (c)	AM PM	F F	YES YES	wabash St. (under study by Califrans)	F F	NO
41	Main St & I-15 Ramps	AM PM	B	NO NO	N/a	B B	N/a
		1 191	<u>и</u>	110		L L	

TABLE 8-3

Bold values indicate intersections operating at LOS E or F

Notes:

(a) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0

(b) The intersection may not operate as well as indicated due to potential queuing. See text of the report for additional explanation.

(c) As part of Sandag's Draft 2050 RTP, a grade separation for the trolley lines at this intersection is being proposed under the hybrid network which is the preferred revenue constrained network . With the grade separation, the intersection would operate at LOS D or better. See appendix L for synchro results. Shaded cells indicates that the intersection is not fully mitigated.

K:\SND_TPTO\095707000\Excel\[707000IN01.xlsm]Summary Alt 2

Vesta Street Overcrossing at Harbor Drive connecting the wet and dry sides of the Naval Base San Diego. On November 1, 2010 the Navy temporarily closed the eastern leg (Norman Scott Road) of the 32nd Street/Norman Street-Wabash Street intersection to improve safety. The Navy is monitoring traffic to determine if this closure should remain. A preliminary analysis indicates that the mentioned projects would improve the intersection to acceptable levels and decrease the potential queuing problems.

Harbor Drive/28th Street is projected to operate at LOS E, even with improvements. There is the potential that improvements to be made between Harbor Drive and State Route 15 (Caltrans study) could divert some traffic off of 28th Street, improving this intersection.

A review of Synchro's queuing reports indicated that the following four intersections would have a "queuing delay" that could affect the level of service and capacity of the intersections:

- Logan Avenue and Cesar Chavez Parkway (Northbound right-turn movement during the afternoon peak-hour period);
- Main Street and Cesar Chavez Parkway (Southbound through movement during both peak-hour periods);
- Boston Avenue and 28th Street (Northbound through movement during the afternoon peak-hour period); and
- Main Street and 28th Street (Eastbound left-turn movement during the afternoon peak-hour period)

When comparing the average intersection delay reported by both the HCM and Synchro 6.0 methodologies for the above listed intersections, it was found that the LOS results at the Boston Avenue/28th Street and Main Street/28th Street intersection would decrease from LOS D to LOS E due to potential queue interaction. These intersections are shown in bold. The level of service results for the other two intersections would not worsen by considering queue interaction.

To mitigate the potential capacity decrease at these intersections along 28th Street due to queue interaction, it is recommended that the signal timing along the 28th Street corridor between Harbor Drive and National Avenue be synchronized in a way to maximize vehicular progression through the closely spaced intersections, while providing queue clearance.

Along Cesar Chavez Parkway, an additional southbound lane could be provided between Logan Avenue and Main Street to increase the southbound storage capacity. The additional southbound lane could be added by the removal of on-street parking spaces along the west side of the roadway during peak-hour periods only.

SANDAGs 2050 Regional Transportation Plan (RTP) unconstrained network recommends the grade separation of the trolley lines at 28th Street and at 32nd Street. A peak-hour intersection analysis was conducted for the intersections of 28th Street and 32nd Street with Harbor Drive assuming these proposed grade separations. The results of the analysis indicated that the proposed grade separation would improve both intersections to LOS D or better during both peak-hour periods under the Horizon Year scenario with either alternative. The proposed grade separations are included in the "revenue constrained scenario". Due to the benefits to adjacent intersections, these grade separation projects are recommended.
Summary of Roadway Segment Analyses

Table 8-4 presents a summary of the roadway segment analysis results included in the study. As shown in the table, the increase of traffic volumes related to the Adopted Community Plan land use scenario would be considered to have a significant traffic related impact along 24 of the 42 roadway segments analyzed.

The traffic related to the Alternative 1 land use scenario for the Community Plan Update would have a traffic related impact along 22 of the 42 roadway segments analyzed. The two roadway segments significantly impacted by the Adopted Community Plan but not impacted by the Alternative 1 land use plan are:

- National Avenue between 16th Street and Sigsbee Street; and
- National Avenue between Sigsbee Street and Beardsley Street.

The Alternative 2 land use scenario was found to have the same traffic related roadway segment significant impacts as the Adopted Community Plan.

Table 8-4 also shows the comparison between the number of roadway segments operating at LOS E and F for each land use alternative. As shown in the table, Alternative 1 would have a total of eight (8) and fourteen (14) roadway segments operating at LOS E and LOS F, respectively. Alternative 2 in contrast would have six (6) and eighteen (18) roadway segments operating at LOS E and LOS F, respectively. The Adopted Community Plan would have four (4) segments operating at LOS E and twenty (20) segments operating at LOS F. Alternative 1 is shown to have the lowest number of failing roadway segments with 22 and the lowest number of segments operating at LOS F with fourteen (14).

Table 8-5 illustrates the proposed roadway classifications recommended to accommodate the future traffic growth anticipated based on the Alternative 1 and Alternative 2 land use scenarios. **Figure 8-6** shows the recommended ultimate classification for the community of Barrio Logan.

The summary of the roadway segment level of service results after the incorporation of the roadway classification changes is included in Table 8-4. As shown in the table, the following roadway segment impacts would not be mitigated with the recommended roadway segment classification changes:

- Sampson Street between National Avenue and Harbor Drive (Both Alternatives);
- 26th Street between National Avenue and Main Street (Both Alternatives);
- 28th Street between National Avenue and I-5 Ramps (Alternative 2 only);
- 29th Street between Boston Avenue and Main Street (Alternative 2 only);
- 32nd Street between Main Street and Wabash Street (Both Alternatives);
- Vesta Street between Main Street and I-5 Ramps (Both Alternatives);
- Logan Avenue between Sigsbee Street and Cesar Chavez Parkway (Both Alternatives);
- National Avenue between 16th Street and Sigsbee Street (Alternative 2 only);
- National Avenue between Sigsbee Street and Beardsley Street (Alternative 2 only);
- National Avenue between Beardsley Street and Cesar Chavez Parkway (Both Alternatives);
- Boston Avenue between 28th Street and 29th Street (Both Alternatives);
- Boston Avenue between 29th Street and 32nd Street (Both Alternatives);
- Main Street between Cesar Chavez Parkway and Evans Street (Both Alternatives);
- Main Street between Evans Street and 26th Street (Alternative 2 only);
- Main Street between 26th Street and 28th Street (Both Alternatives);
- Main Street between 28th Street and 29th Street (Both Alternatives);
- Main Street between 29th Street and 32nd Street (Both Alternatives);

- Main Street between 32nd Street and Rigel Street (Both Alternatives);
- Main Street between Rigel Street and Una Street (Both Alternatives); and
- Main Street between Una Street and I-5 SB Off-ramp (Both Alternatives).

After the incorporation of the proposed roadway segment improvements, both Alternatives 1 and 2 would have a total of six (6) segments operating at LOS E. In addition, Alternative 1 would have nine (9) segments operating at LOS F, while Alternative 2 would have thirteen (13).

Boston Avenue, National Avenue and 26th Street are desired by the community of Barrio Logan to be more pedestrian and bicycle friendly corridors. The widening of these roadways to improve vehicular circulation was not desired by the community. The vehicular operations along these three facilities could be congested during peak periods and vehicular speeds would be low. Additional widening is not recommended. Traffic calming measures should be evaluated along National Avenue to further enhance the pedestrian and bicycle circulation.

Additional improvements to the failing roadway segments of Sampson Street, 28th Street, 32nd Street, Vesta Street, Logan Avenue and Main Street are not recommended since the roadway segment analysis used in this study is based on theoretical capacities based on the number of travel lanes. The analysis does not take into account other physical features that can affect the capacity of a roadway segment like grades, number of traffic signals, number of driveways, parking availability, etc. In addition, the analysis does not take into account the different traffic peak periods experienced on these roadways due to the surrounding land uses. As an example, the Barrio Logan traffic generators whose peak-hour of use do not correspond to typical peak-hour commuter traffic. To better represent the conditions of a roadway segment within the Barrio Logan community, the operations of the upstream and downstream intersections of each respective segment during the peak periods would indicate whether the roadway segment would have adequate capacity. As shown in the intersection analysis tables, all intersections along the failing roadway segments would operate at acceptable LOS.

In addition to the roadway segment improvements listed above, it is recommended that 28th Street between Harbor Drive and the I-5 Ramps be classified as a four-lane major arterial. For the segment between Harbor Drive and Main Street, a raised median should be installed with an entrance to the Navy Commissary. The proposed configuration would allow two lanes in each direction with an auxiliary lane for the heavy southbound right-turn movements at Harbor Drive. Parking would need to be removed along both sides of the roadway, with a total loss of approximately 20 parking spaces. The removed parking spaces are likely utilized by NASCO employees or Naval Base San Diego employees or visitors. Additional diagonal parking is recommended to be evaluated for installation along Boston Avenue between 28th Street and 29th Street to replace the loss of parking along 28th Street. The west side of the roadway could be widened by 4 feet to accommodate the proposed interim cross-sections. The east sidewalk will widen to 10 feet to enhance pedestrian circulation. This improvement is not part of mitigation for a roadway segment impact. The improvement is recommended to encourage heavy truck traffic to use 28th Street instead of Main Street and to provide for pedestrians. The ultimate recommended cross-section of 28th Street will include a designated bike lane along both sides of the roadway and a fourteen foot parkway. The ultimate configuration along 28th Street will require additional roadway widening and right-of-way acquisition. An alignment study is required to further define the extent of additional right-way needed and future widening

Conceptual roadway segment improvement figures, including the proposed cross-sections are included in **Appendix K**. **Figure 8-1** shows the Recommended Roadway Classification for the community. **Figure 8-2** shows a summary of all recommended improvements within the community.

	SUMMAI	RY OF R		ABLE 8-4 SEGME		LYSIS RI	ESULTS					
		WITH F			WOULD THE PROJECT HAVE A SIGNIFICANT IMPACT?				WITH CLASSIF	ON YEAR I NEW FICATION OS	WOULD THE SIGNIFICANT IMPACT BE MITIGATED?	
ROADWAY SEGMENT	EXISTING FUNCTIONAL ROADWAY CLASSIFICATION	ACP (a)	ALT 1	ALT 2	ACP	ALT 1	ALT 2	RECOMMENDED ROADWAY CLASSIFICATION	ALT 1	ALT 2	ALT 1	ALT 2
Cesar Chavez Pkwy								-	-			
north of Logan Ave	3 Lane Collector (with TWLT)	D	С	D	NO	NO	NO	3 Lane Collector (with TWLT)	С	D	N/A	N/A
between Logan Ave and National Ave	4 Lane Collector (with TWLT)	E	E	E	YES	YES	YES	3 Lane Urban Major	D	D	YES	YES
between National Ave and Newton Ave	3 Lane Collector (with TWLT)	F	F	F	YES	YES	YES	3 Lane Urban Major	D	D	YES	YES
between Newton Ave and Main St between Main St and Harbor Dr	3 Lane Collector (with TWLT) 4 Lane Collector (with TWLT)	F	E B	E B	YES NO	YES NO	YES NO	3 Lane Urban Major 3 Lane Major	C B	C B	YES N/A	YES N/A
Sampson St	4 Lane Conector (with TwET)	Б	Б	Б	NO	NO	NO	5 Lane Major	Б	Б	IN/A	IN/A
between I-5 and National Ave	2 Lane Collector (No TWLT)	D	D	D	NO	NO	NO	2 Lane Collector (No TWLT)	D	D	N/A	N/A
between National Ave and Harbor Dr	2 Lane Collector (No TWLT)	F	Е	F	YES	YES	YES	2 Lane Collector (No TWLT)	Е	F	NO	NO
26th St												
between National Ave and Main St	2 Lane Collector (No TWLT)	F	E	F	YES	YES	YES	2 Lane Collector (No TWLT)	Е	F	NO	NO
28th St		-	-						-	-		
between I-5 and Boston Ave	3 Lane Collector (with TWLT)	F	F	F	YES	YES	YES	4 Lane Major Arterial	D	E	YES	NO N/A
between Boston Ave and Main St between Main St and Harbor Dr	4 Lane Collector (with TWLT) 4 Lane Major Arterial	D B	D C	D C	NO NO	NO NO	NO NO	4 Lane Major Arterial 4 Lane Major Arterial	C C	C C	N/A N/A	N/A N/A
29th St	4 Lane widjor Arteriai	Б		Ľ	NU	NU	NU	4 Lane wajor Artenat	ι	L	IN/A	IN/A
between Boston Ave and Main St	2 Lane Collector (No TWLT)	D	D	D	NO	NO	NO	2 Lane Collector (No TWLT)	D	Е	N/A	NO
32nd St												
between Main St and Wabash Blvd	2 Lane Collector (with TWLT)	F	Е	Е	YES	YES	YES	2 Lane Collector (with TWLT)	Е	Е	NO	NO
between Wabash Blvd and Harbor Drive	4 Lane Major Arterial	С	С	С	NO	NO	NO	4 Lane Major Arterial	С	С	N/A	N/A
Rigel St			1	r			1		r	r		1
between Main St and I-5 Vesta St	2 Lane Collector (No TWLT)	A	А	А	NO	NO	NO	2 Lane Collector (No TWLT)	A	А	N/A	N/A
between Main St and I-5	2 Lane Collector (No TWLT)	Е	Е	Е	YES	YES	YES	2 Lane Collector (No TWLT)	E	Е	NO	NO
Logan Ave					r						•	
between 17th St and Sigsbee St	2 Lane Collector (with TWLT)	D	D	D	NO	NO	NO	2 Lane Collector (with TWLT)	D	D	N/A	N/A
between Sigsbee St and Cesar Chavez Pkwy	2 Lane Collector (with TWLT)	F	F	F	YES	YES	YES	2 Lane Collector (with TWLT)	F	F	NO	NO
between Cesar Chavez Pkwy and 26th St	2 Lane Collector (with TWLT)	В	В	В	NO	NO	NO	2 Lane Collector (with TWLT)	В	В	N/A	N/A
National Ave between 16th St and Sigsbee St	2 Lane Collector (with TWLT)	Е	D	Е	YES	NO	YES	2 Lane Collector (with TWLT)	D	Е	N/A	NO
between Four St and Sigsbee St between Sigsbee St and Beardsley St	2 Lane Collector (with TWLT) 2 Lane Collector (with TWLT)	E	D	E	YES	NO	YES	2 Lane Collector (with TWLT) 2 Lane Collector (with TWLT)	D	E	N/A	NO
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	F	F	F	YES	YES	YES	2 Lane Collector (with TWLT)	F	F	NO	NO
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT)	F	F	F	YES	YES	YES	2 Lane Collector (with TWLT)	С	С	YES	YES
between Evans St and Sicard St	2 Lane Collector (with TWLT)	С	С	С	NO	NO	NO	2 Lane Collector (with TWLT)	С	С	N/A	N/A
between Sicard St and 27th St	2 Lane Collector (No TWLT)	F	F	F	YES	YES	YES	2 Lane Collector (with TWLT)	D	D	YES	YES
Boston Ave		-	1			<u> </u>				1		
between 28th and 29th St	2 Lane Collector (No TWLT)	F	F	F	YES	YES	YES	2 Lane Collector (No TWLT)	F	F	NO	NO
between 29th St and 32nd St Main St	2 Lane Collector (No TWLT)	F	F	F	YES	YES	YES	2 Lane Collector (No TWLT)	F	F	NO	NO
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	D	С	D	NO	NO	NO	2 Lane Collector (No TWLT)	С	D	N/A	N/A
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT) 2 Lane Collector (No TWLT)	F	E	F	YES	YES	YES	2 Lane Collector (No TWLT) 2 Lane Collector (No TWLT)	E	F	NO	NO
between Evans St and 26th St	2 Lane Collector (No TWLT)	F	Е	F	YES	YES	YES	2 Lane Collector (with TWLT)	D	F	YES	NO
between 26th St and 28th St	3 Lane Collector (No TWLT)	F	F	F	YES	YES	YES	3 Lane Collector (No TWLT)	F	F	NO	NO
between 28th and 29th St	4 Lane Collector (No TWLT)	F	F	F	YES	YES	YES	4 Lane Collector (No TWLT)	Е	Е	NO	NO
between 29th St and 32nd St	3 Lane Collector (No TWLT)	F	F	F	YES	YES	YES	3 Lane Collector (No TWLT)	F	F	NO	NO
between 32nd St and Rigel St	4 Lane Collector (No TWLT)	F	F	F	YES	YES	YES	4 Lane Collector (No TWLT)	F	F	NO	NO
between Rigel St and Una St between Una St and L 5 SR Off Pamp	2 Lane Collector (with TWLT)	F	F	F F	YES	YES	YES	2 Lane Collector (with TWLT)	F	F	NO NO	NO
between Una St and I-5 SB Off Ramp Harbor Dr	2 Lane Collector (with TWLT)	I r	г	r	YES	YES	YES	2 Lane Collector (with TWLT)	F	г	NO	NO
between Beardsley St and Cesar Chavez Pkwy	4 Lane Major Arterial	D	D	D	NO	NO	NO	4 Lane Major Arterial	D	D	N/A	N/A
between Cesar Chavez Pkwy and Sampson St	4 Lane Major Arterial	C	C	C	NO	NO	NO	4 Lane Major Arterial	C	C	N/A	N/A
between Sampson St and Schley St	4 Lane Major Arterial	С	С	С	NO	NO	NO	4 Lane Major Arterial	С	С	N/A	N/A
between Schley St and 28th St	4 Lane Major Arterial	В	В	В	NO	NO	NO	4 Lane Major Arterial	В	В	N/A	N/A
between 28th St and 32nd St	4 Lane Major Arterial	С	С	С	NO	NO	NO	4 Lane Major Arterial	С	С	N/A	N/A
between 32nd St and Vesta St	4 Lane Major Arterial	D	D	D	NO	NO	NO	4 Lane Major Arterial	D	D	N/A	N/A
Total Number of Roadway Segments with LOS E		4	8	6					6	7		
Total Number of Roadway Segments with LOS F		20	14 22	18					9 15	13		
Total Number of Roadway Segments with Failing Notes:	103	24	22	24					15	20	I	
Bold values indicate roadway segments operating at LO Shaded cell indicates that the significant impact was not (a) ACP = Adopted Community Plan (SND_PT000000000000000000000000000000000000		ements.										

	RECO	MMENDE		TABLE 8-5 VAY CLASSIFICATION CHANGES			
	EXISTING CONDIT	IONS			HORIZO	N YEAR (AI	LT 1 AND ALT 2)
ROADWAY SEGMENT	CURB TO CURB ROW CURB TO CURB CURB TO CURB CURB TO CURB CURB TO CURB ROW FUNCTIONAL CLASSIFICATION WIDTH WIDTH RECOMMENDED CLASSIFICATION WIDTH ROW					ROW	REMARKS
Cesar Chavez Pkwy		1					
north of Logan Ave	3 Lane Collector (with TWLT)	76 feet	96 feet	3 Lane Collector (with TWLT)	76 feet	96 feet	Changes are not recommended
between Logan Ave and National Ave	4 Lane Collector (with TWLT)	76 feet	96 feet	3 Lane Urban Major	76 feet	104 feet	2 NB lanes and 1 SB lane
between National Ave and Newton Ave	3 Lane Collector (with TWLT)	64 feet	84 feet	3 Lane Urban Major	72 feet	96 feet	2 NB lanes and 1 SB lane
between Newton Ave and Main St	3 Lane Collector (with TWLT)	64 feet	84 feet	3 Lane Urban Major	72 feet	96 feet	2 NB lanes and 1 SB lane
between Main St and Harbor Dr	4 Lane Collector (with TWLT)	64 feet	84 feet	3 Lane Major	64 feet	92 feet	2 NB lanes, 1 SB lane and 1 Aux SB lane
ampson St							
between I-5 and National Ave	2 Lane Collector (No TWLT)	40 feet	60 feet	2 Lane Collector (No TWLT)	40 feet	60 feet	Changes are not recommended
between National Ave and Harbor Dr	2 Lane Collector (No TWLT)	40 feet	60 feet	2 Lane Collector (No TWLT)	40 feet	60 feet	Changes are not recommended
6th St							
between National Ave and Main St	2 Lane Collector (No TWLT)	40 feet	60 feet	2 Lane Collector (No TWLT)	40 feet	60 feet	Part of the Green Street
8th St							
between I-5 and Boston Ave	3 Lane Collector (with TWLT)	68 feet	85 feet	4 Lane Major Arterial	74 feet	108 feet	3 SB lanes and 2 NB lanes
between Boston Ave and Main St	4 Lane Collector (with TWLT)	74 feet	100 feet	4 Lane Major Arterial	74 feet	114 feet	3 SB lanes and 2 NB lanes
between Main St and Harbor Dr	4 Lane Major Arterial	80 feet	100 feet	4 Lane Major Arterial	84 feet	124 feet	2 SB lanes (with 1 Aux lane) and 2 NB lanes
2nd St		1					
between Main St and Wabash Blvd	2 Lane Collector (with TWLT)	40 feet	60 feet	2 Lane Collector (with TWLT)			Changes are not recommended
between Wabash Blvd and Harbor Drive	4 Lane Major Arterial			4 Lane Major Arterial			Changes are not recommended
igel St			1		1	I	
between Main St and I-5	2 Lane Collector (No TWLT)	40 feet	60 feet	2 Lane Collector (No TWLT)	40 feet	60 feet	Changes are not recommended
esta St	I		1		1		
between Main St and I-5	2 Lane Collector (No TWLT)	40 feet	60 feet	2 Lane Collector (No TWLT)	40 feet	60 feet	Changes are not recommended
ogan Ave						r	
between 17th St and Sigsbee St	2 Lane Collector (with TWLT)	52 feet	80 feet	2 Lane Collector (with TWLT)	52 feet	80 feet	Changes are not recommended
between Sigsbee St and Cesar Chavez Pkwy	2 Lane Collector (with TWLT)	52 feet	80 feet	2 Lane Collector (with TWLT)	52 feet	80 feet	Changes are not recommended
between Cesar Chavez Pkwy and 26th St	2 Lane Collector (with TWLT)	52 feet	80 feet	2 Lane Collector (with TWLT)	52 feet	80 feet	Changes are not recommended
ational Ave							
between 16th St and Sigsbee St	2 Lane Collector (with TWLT)	52 feet	80 feet	2 Lane Collector (with TWLT)	52 feet	80 feet	Part of the Green Street
between Sigsbee St and Beardsley St	2 Lane Collector (with TWLT)	52 feet	80 feet	2 Lane Collector (with TWLT)	52 feet	80 feet	Part of the Green Street
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	52 feet	80 feet	2 Lane Collector (with TWLT)	52 feet	80 feet	Part of the Green Street
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT)	52 feet	80 feet	2 Lane Collector (with TWLT)	52 feet	80 feet	Part of the Green Street
between Evans St and Sicard St	2 Lane Collector (with TWLT)	52 feet	80 feet	2 Lane Collector (with TWLT)	52 feet	80 feet	Part of the Green Street
between Sicard St and 27th St	2 Lane Collector (No TWLT)	52 feet	80 feet	2 Lane Collector (with TWLT)	52 feet	80 feet	Part of the Green Street
oston Ave							
between 28th and 29th St	2 Lane Collector (No TWLT)	52 feet	80 feet	2 Lane Collector (No TWLT)	52 feet	80 feet	Part of the Green Street
between 29th St and 32nd St	2 Lane Collector (No TWLT)	52 feet	80 feet	2 Lane Collector (No TWLT)	52 feet	80 feet	Part of the Green Street
fain St			. <u> </u>				
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	52 feet	80 feet	2 Lane Collector (No TWLT)	52 feet	80 feet	Changes are not recommended
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT)	52 feet	80 feet	2 Lane Collector (No TWLT)	52 feet	80 feet	Changes are not recommended
between Evans St and 26th St	2 Lane Collector (No TWLT)	52 feet	80 feet	2 Lane Collector (with TWLT)	52 feet	80 feet	Changes within the existing ROW
between 26th St and 28th St	3 Lane Collector (No TWLT)	52 feet	80 feet	3 Lane Collector (No TWLT)	52 feet	80 feet	2 EB lanes and 1 WB lane
between 28th and 29th St	4 Lane Collector (No TWLT)	52 feet	80 feet	4 Lane Collector (No TWLT)	52 feet	80 feet	Changes are not recommended
	3 Lane Collector (No TWLT)	52 feet	80 feet	3 Lane Collector (No TWLT)	52 feet	80 feet	2 WB lanes and 1 EB lane
between 29th St and 32nd St	1		00.0		52 feet	80 feet	
between 29th St and 32nd St between 32nd St and Rigel St	4 Lane Collector (No TWLT)	52 feet	80 feet	4 Lane Collector (No TWLT)	521001	00 1000	Changes are not recommended
	4 Lane Collector (No TWLT) 2 Lane Collector (with TWLT)	52 feet 52 feet	80 feet 80 feet	4 Lane Collector (No TWLT) 2 Lane Collector (with TWLT)	52 feet	80 feet	Changes are not recommended Changes are not recommended

NB= Northbound; SB= Southbound; EB= Eastbound; WB=Westbound; Au= Auxiliary lan K:\SND_TPTO\095707000[Excel\[707000RS01.xlsm]Change





Summary of Freeway Segment Analysis

Table 8-6 shows the summary of the freeway analysis for each of the Horizon Year land use alternatives. As shown in the table, all Horizon Year land use alternatives would have a significant traffic related impact at all freeway segments analyzed with the exception of SR-75. The LOS results along the freeway segments would be the same for the two alternatives.

Based on the freeway segment capacity analysis included in this study, Barrio Logan Community Plan Update is considered to have a cumulative traffic related impact along the following freeway segments:

- I-5 from J Street to SR-75 Junction;
- I-5 from SR-75 Junction to 28th Street;
- I-5 from 28th Street to I-15 Interchange;
- I-5 from I-15 Interchange to Division Street; and
- I-15 from I-5 Interchange to Ocean View Boulevard

SANDAG's Draft 2050 Regional Transportation Plan (RTP) hybrid network includes the following freeway improvements:

- Operational freeway improvements along Interstate 5 between Interstate 15 and Interstate 8; and
- Addition of one (1) main lane and one (1) managed lane in each direction between Interstate 15 and State Route 54;

Both improvements listed above were included in the hybrid network's revenue constrained scenario, approved by SANDAG's board for further study on December 17th, 2010. The improvements included in the RTP are recommended to enhance the regional connectivity and accommodate the forecasted growth of the San Diego region. It should be noted that both land use alternatives presented on this plan would generate less traffic than the current adopted Community Plan land use alternative. Either proposed alternative would lessen, but not eliminate cumulative freeway traffic impacts.

In addition to the proposed freeway improvements listed in the SANDAG's Draft 2050 RTP, the following freeway access improvements are recommended within the Barrio Logan Community:

- Signalization of the intersection of Logan Avenue and Beardsley Street/ Interstate 5 SB off-ramp;
- Traffic signal modification at the intersection of Logan Avenue and Cesar Chavez Parkway (State Route 75 on-ramp);
- Signalization of the intersection of Boston Avenue and Interstate 5 SB on-ramp- 29th Street;
- Roadway improvements along 28th Street to accommodate an additional southbound lane, including the potential for widening the Interstate 5 overcrossing;
- Signalization of the intersection of 28th Street and Interstate 5 southbound off-ramp;
- Changes to the roadway striping along Main Street between 28th Street and 29th Street to facilitate freeway access to the Interstate 5 southbound on-ramp at Boston Avenue;
- Installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15 (under study by the Port of San Diego, and Caltrans);
- Construction of the Vesta Street Overcrossing at Harbor Drive (under study by the Navy);
- Coordination of City of San Diego and Navy related to the closure of the east leg of the 32nd Street and Norman Street-Wabash Street intersection (recently completed on a trial basis by the Navy); and

• Grade separation of the trolley tracks at the 28th Street and Harbor Drive and 32nd Street and Harbor Drive intersections (to be completed by SANDAG and part of the 2050 draft RTP).

The improvements listed above would decrease congestion along the major freeway access locations within the community.

		ADOPTI	ED COMMUNITY PLAN	ALTI	ERNATIVE 1	ALTERNATIVE 2		
FREEWAY SEGMENT	DIRECTION	LOS	SIGNIFICANT?	LOS	SIGNIFICANT?	LOS	SIGNIFICANT?	
			AM PEAK					
-5					· · · · · · · · · · · · · · · · · · ·		1	
J Street to SR-75 Junction	NB	FO	YES	FO	YES	F0	YES	
	SB							
SR-75 Junction to 28th Street	NB	FO	YES	FO	YES	FO	YES	
	SB							
28th Street to I-15 Interchange	NB	E	YES	E	YES	E	YES	
<u> </u>	SB							
I-15 Interchange to Division St	NB	FO	YES	FO	YES	FO	YES	
	SB							
-15								
I-5 Interchange to Ocean View Blvd	NB						-	
SR-75	SB	Е	YES	D		D		
5R-75	WD							
I-5 Interchange to Glorietta Blvd	WB EB	D		D		D		
	ED	D	 PM PEAK	D		D		
-5			IMILAK					
	NB							
J Street to SR-75 Junction	SB	Е	YES	E	YES	E	YES	
	NB		TES		115		TLS	
SR-75 Junction to 28th Street	SB	Е	YES	E	YES	E	YES	
	NB	Ľ	115	Ľ	115	Ľ	1115	
28th Street to I-15 Interchange	SB	D		D		D		
	NB	2		2				
I-15 Interchange to Division St	SB	FO	YES	FO	YES	FO	YES	
-15	50	10	1110	10	115	10	125	
	NB	FO	YES	FO	YES	FO	YES	
I-5 Interchange to Ocean View Blvd	SB							
SR-75	~~							
I 5 Interchange to Clariatte Di-J	WB	D		D		D		
I-5 Interchange to Glorietta Blvd	EB		1		1			

 TABLE 8-6

 SUMMARY OF FREEWAY SEGMENT ANALYSIS

Bold values indicate freeway segments operating at LOS E or F. K:\SND_TPTO\095707000\Excel\[707000FR01.xls]Summary Impacts

APPENDICES

APPENDIX A

Barrio Logan Community Plan Update – Mobility Element

APPENDIX B

 Copy of the "Analysis of Traffic Impacts at Isolated Light Rail Transit (LRT) Crossings using SimTraffic"

ANALYSIS OF TRAFFIC IMPACTS AT ISOLATED LIGHT RAIL TRANSIT (LRT) CROSSINGS USING SIMTRAFFIC

Jeff G. Gerken, Sarah A. Tracy

ABSTRACT

As an increasing number of metropolitan areas study the possibility of implementing Light Rail Transit (LRT) as part of their overall transportation system, the need to depict the impacts of LRT to the current or future roadway system must be determined. A recent LRT impact analysis study of offset running LRT was conducted to better understand the impacts to traffic flow when LRT is introduced at an isolated intersection.

Delay and queue impacts were determined using the microscopic traffic engineering software program SimTraffic Version 4.0. Although the program was not explicitly designed to handle transit analysis, recent enhancements have enabled advanced users to program work-arounds to approximate the behavior of the LRT crossing controllers as well as depict the interaction of the LRT and vehicular traffic. Specific programming enhancements include the ability to program the ring and barrier design and the ability to cluster multiple intersection controllers, thereby more accurately representing the interaction of LRT and vehicular traffic.

Analysis output included vehicular delay and queues for LRT and non-LRT scenarios. For the case study presented in this paper and the actual impact study project, the level of service impact to vehicular traffic due to LRT was approximately one increment degradation from non-LRT conditions. All simulation scenarios were run multiple times to achieve statistical confidence. An overview of the major work-arounds is presented in this paper.

Although this paper covers LRT analysis applications, almost any interaction of traffic and headwaybased flow can be modeled to develop an understanding of impacts to the traffic stream.

INTRODUCTION

As an increasing number of metropolitan areas study the possibility of implementing Light Rail Transit (LRT) as part of their overall transportation system, the need to depict the impacts of LRT to the current or future roadway system must be determined. This paper covers the analysis methodology that was used in a recent LRT impact analysis study. The purpose of the study was to better understand the impacts to vehicular traffic when LRT is introduced into an existing corridor at isolated intersections. For purposes of this paper an isolated intersection is defined as any intersection that would not be normally considered for coordination. The microsimulation traffic analysis tool, SimTraffic 4.0, was used to determine the impacts of LRT.

Several questions this paper will address are:

- Why study the impacts of LRT on vehicular traffic?
- Is SimTraffic the correct software tool to conduct this analysis?
- How was SimTraffic programmed to conduct this analysis?
- What were the results of the study?

It is worth noting the goal of the study referenced in this paper and the methodology used to conduct the analysis is of an impact perspective, not to generate detailed timing and preemption plans.

BACKGROUND INFORMATION ON LRT OPERATIONS

According to ITE Recommended Practice¹: Where a signalized highway intersection exists in close proximity to a railroad grade crossing, the railroad signal control equipment and the traffic signal control equipment should be interconnected, and the normal operation of the traffic signals controlling the intersection should be preempted to operate in a special control mode when trains are approaching. A preemption sequence compatible with the railroad grade crossing active warning devices, such as gates and flashing lights, is extremely important to provide safe vehicular, pedestrian, and train movements. Such preemption serves to ensure that the actions of these separate traffic control devices complement rather than conflict with each other.

Given this mandate, traffic engineers may be required to determine the impacts of LRT on the current or proposed transportation systems. For purposes of this paper, the term LRT will be used to describe a transit vehicle facility that operates at a predetermined headway on its own right-of-way in close proximity to roadway infrastructure. Certainly many configurations of LRT interaction with vehicular traffic are in use today, this paper focuses on only the "offset" LRT arrangement depicted in Figure 1.



Figure 1: LRT-Intersection Diagram

The main reason, from the point of view of the traffic engineer, for studying the interaction of LRT and vehicular traffic is to understand the delay and queue impacts to the vehicular traffic stream. It is assumed that for purposes of this paper that the LRT will preempt the traffic signal controller in order to transition through the intersection with minimal delay to the LRT vehicle. More detail on the preemption of the traffic signal controller is presented in later sections. Given this assumption, it is clear that any impacts of LRT will be observed on the "traffic side" of the modal system. "How bad will LRT affect traffic?" is the essence of the analysis.

LRT Variables

There are several variables that describe LRT characteristics. A brief discussion of each is presented below.

Headway

An important variable when analyzing LRT is the operating headways. Headway is defined as the time between LRT vehicles operating in the same direction. Headways can vary over the day by demand but for our purposes is considered constant. A 10-minute headway indicates that a LRT vehicle will be

generated from each direction approximately every 10 minutes. Since the analysis considers two-way operation of the LRT track, authors assumed the worst case impact to be when the LRT vehicles arrive at the intersection every 5 minutes.

LRT Vehicle Speed and Size

LRT vehicle speed indicates the operating speed of the vehicle on level terrain in a tangent section of track. For purposes of this analysis, a speed of 15 mph was chosen to represent the speed at which the LRT vehicle traverses the intersection. LRT transit vehicles vary in size, capacity, and performance. A LRT vehicle length of 90 feet and a maximum acceleration of 4 feet/sec² were chosen. It is worth noting that the goal of the analysis was to determine impacts to traffic based on some general LRT characteristics, not to analyze the LRT mode.

Distance between the tracks and signalized intersection

The distance between the LRT track crossing and the signalized intersection is assumed to be fixed by design standards and right-of-way constraints. The analysis conducted assumed a distance of approximately 200 feet from the center of the intersection to the center of the LRT track. According to the Manual of Uniform Traffic Control Devices² (MUTCD) a distance of 200 feet between the grade crossing and the intersection would require the two controllers to operate together. Additional guidance on the interconnection of closely spaced grade crossings and vehicular intersections can is provided in reference three. More information concerning the operation of the LRT track crossing controller and the intersection signal controller is discussed in later sections.

There are many other variables when considering the LRT facility design including but not limited to intersection and crossing geometry:

- crossing angle
- length of crossing
- track clearance distance
- intersection width
- sight distance issues
- approach grades and parallel streets

Clearly, there are many factors that go into the design and operation of a LRT crossing. More detail on all these issues can be found in the references listed at the end of this paper.

Sequence of Controller Operation

Given that two closely spaced intersections, one LRT crossing and one signalized for traffic, are required to operate as a system an understanding of the operation of these controllers is needed. Figures 2 through 4 illustrate the phasing sequence of operations prior to and while a LRT vehicle approaches the grade crossing.



Figure 2: Sequence of Controller Operation, No LRT



Figure 3: Sequence of Controller Operation, LRT Approaching



Figure 4: Sequence of Controller Operation, LRT Crossing

Prior to and after a LRT vehicle has been serviced the traffic controller will operate normally, servicing phases based on detection calls from traffic flow and showing green for the traffic movements at the grade crossing. This operation is illustrated in Figure 2.

Once a LRT vehicle has placed a request for service the controller terminates the current phases, providing the proper change intervals and without violating local standards for pedestrian timing. The traffic signal controller then provides a "clearance" phase and services the traffic between the intersection and the LRT grade crossing. This is accomplished by terminating westbound traffic movements across the grade crossing and providing an exclusive westbound phase for traffic at the signalized intersection. These two operations prevent additional traffic from entering the area between the intersection and the LRT crossing and clear out any vehicles from this area. This operation is illustrated in Figure 3. The required clearance time can be calculated by using the following formula:

t(sec) = 4 + 2(n)

where n = the number of vehicles that queue between the intersection and the LRT crossing³

Once the proper clearance phase has terminated the LRT movement phase is serviced. It is allowable to provide green time to non-conflicting traffic movements while servicing the LRT. In the case of our example, the north and south movements can be serviced, however, northbound right turns are not allowed. This operation is illustrated in Figure 4. Once the LRT has cleared the crossing, normal operation can be resumed.

ANALYSIS METHODS

Given the complexities of the phasing sequence and variables involved, a macroscopic analysis tool does not provide for the most accurate analysis. A microscopic analysis tool would provide for the complex interaction of individual vehicles operating under the phase scheme described previously. The traffic engineering software package SimTraffic was chosen as the traffic analysis tool.

SimTraffic

SimTraffic is not an explicit analysis tool for transit applications. In fact, the developers of SimTraffic have cautioned users from attempting this analysis unless they have advanced knowledge of the program. However, given the ability to program the ring and barrier designer and the ability to cluster two or more intersections, the authors felt this was a reasonable tool to approximate the LRT interaction. Additionally, at the time of development of this methodology, LRT operations were being analyzed with the CORSIM package. The authors felt that the SimTraffic option was far superior to the CORSIM program for the ability to approximate the interaction of LRT and vehicular traffic. It is also acknowledged that there are transit software packages available that conduct this analysis without the need for "work-arounds". The specific work-arounds will be described in later sections of this paper.

SimTraffic is a microscopic, stochastic model that provides the ability to test alternatives based on input variables such as traffic volumes, traffic signal control schemes, geometric conditions, and a host of other variables. The input processor for the SimTraffic model is Synchro. The package version that was used for this analysis was 4.0.

CASE STUDY

The inspiration for this paper comes from a recent project in Union County, New Jersey. The objectives of that project were to determine the impacts to traffic at an existing isolated intersection once LRT

operations were introduced. The actual project included an analysis of four peak periods over three volume horizon years. To better illustrate the concepts presented in this paper, the intersection geometry and traffic volumes used for the analysis were simplified. The traffic volumes and geometry used for this paper's analysis are illustrated in Figure 5.



Figure 5: Case Study Hourly Traffic Volumes and Geometry



Figure 6: Image of the SimTraffic Animation (LRT moving southbound)

Coding Issues

To ensure proper evaluation of the intersection impacts several assumptions were made concerning intersection operations and SimTraffic coding. Specific SimTraffic coding issues follow:

1. Simulation of the LRT vehicles.

Simulation of the LRT vehicle was achieved by coding another "roadway" link within close proximity to the standard traffic roadway links. The LRT roadway volumes were coded to only contain 100 percent heavy vehicles. To ensure trucks were evaluated within the traffic stream, a vehicle type in SimTraffic was altered to have the same size and performance characteristics as standard trucks. The LRT vehicles were coded to replicate the size and acceleration parameters desired.

2. Operation of the complex phasing arrangement and timing.

Programming the ring and barrier designer in Synchro allowed for the complex phasing arrangement needed. The traffic signal phases were coded in rings A and B, and the LRT phases were coded using ring C.

3. Operation of the clearance phases.

The clearance phase was programmed using the ring and barrier designer and the ability to code movements under several phases. The specific time of the clearance phase was determined by using the equation presented in earlier sections.

4. Operation of the intersection and LRT crossing as one controller.

The cluster editor feature in Synchro was used to operate both the traffic intersection and the LRT crossing intersection as one controller. Figure 7 illustrates the final timing and phasing sequence for the signal controller. The traffic intersection movements are indicated with the shaded arrows and the non-shaded arrows indicate the LRT crossing phases. As illustrated in Figure 5, the traffic intersection was coded with a node number of 10 and the grade crossing was coded as a node number of 1.

5. Preempting the traffic signal controllers.

Preempting the traffic signal controller is <u>not</u> within the capability of the Synchro or SimTraffic programs. To approximate the preemption, advance detectors were placed upstream of the LRT crossing. As a LRT vehicle approaches the grade crossing a call is placed to the controller so that the intersection would conduct the clearance phase and be operating in the LRT movement phase when the LRT arrived. The operating phase is not terminated by an LRT call. This is a deviation from the actual operating parameters that would be observed in the field. To better replicate the LRT interruption, a second set of LRT clearance and LRT crossing phases was introduced after each barrier point. This is illustrated in Figure 7. It is worth noting that in some instances the LRT vehicle does get delayed prior to crossing. Keeping in mind that impacts to the traffic stream were the main concern, these minor LRT delays were not considered to affect the results of the study.

6. Metering the LRT vehicle headways.

Since the LRT track is simply another roadway link, an inlet meter was developed to control the arrival rate of the LRT vehicles. The original LRT headways were at 10-minute intervals. The limit of Synchro's cycle length is 360 seconds. Using the Universal Traffic Data Formatting (UTDF) features of Synchro a separate database file was created to allow for long cycle lengths at the inlet meters.



Figure 7: Timing and Phasing Operation

FINDINGS

Output Measures of Effectiveness

The output summarized in this section was developed from three 60-minute runs of the SimTraffic program. The random seed number was changed for each run to develop the stochastic robustness of the simulation. Each individual vehicle's statistics are tracked throughout the simulation period, providing measures of effectiveness (MOEs) that otherwise would be difficult to obtain. The output measures of delay and queue lengths were determined to be of most interest. The comparisons presented in this section are between No-LRT and the 10-minute headway operation of LRT. The only difference between the two models was that under the No-LRT scenario the clearance and LRT phases were never called.

The overall Level of Service for the intersection went from C (33.3 seconds of delay per vehicle) to D (39.9 seconds of delay per vehicle), an approximately 12 percent increase in delay. Given that the north-south movements were provided green time during the LRT crossings, this result is well within what was expected. Although the specific input variables of traffic volume and intersection geometry were altered for this paper, a one-increment LOS degradation was generally observed for all peak periods for the actual project variables.

Queue lengths for the east and west approaches were expected to increase; however the north and south approach queue lengths were not expected to degrade with any significance. The eastbound queue (maximum observed queue) went from 245 feet to 308 feet, an approximate 26 percent increase. The westbound approach queue length went from 207 feet to 259 feet, an approximate 25 percent increase. The westbound approach queue accounted for the queues at both the intersection and the LRT crossing.

Sensitivity Analysis

In an effort to determine the impacts of varying the LRT headways, a sensitivity analysis was conducted at 5-minute and 20-minute headways. The same coding parameters were utilized as with the 10-minute headway LRT scenarios, with the minor exception of changes in the LRT meter cycle length to achieve the desired headways.

Table 1 summarizes the average delay for the No-LRT and the three LRT headway scenarios studied. As would be expected, delay increases once LRT is introduced into the system for the eastbound and

westbound approaches. However, the northbound and southbound approaches do not incur any significant delay, and in some cases delay decreases, due to the fact that these phases receive green time when the LRT crossing is in operation.

Secondria		Average Dela	y/Vehicle (sec)	
Scenario	Eastbound	Westbound	Northbound	Southbound
No LRT	36.4	35.8	29.2	30.9
LRT (5 Minute Headways)	66.1	51.8	30.9	29.1
LRT (10 Minute Headways)	46.4	41.1	30.2	28.7
LRT (20 Minute Headways)	42.1	39.4	29.7	29.8

Table 1 LRT Headway Sensitivity Analysis, Average Delay

Table 2 summarizes the average queue lengths for the No-LRT and the three LRT headway scenarios studied. As with the delay MOEs, queues increase once LRT is introduced into the system at the eastbound and westbound approaches. The northbound and southbound queue lengths did not increase under any of the LRT scenarios.

Saanaria	Ave	rage Queue Length	s (feet/percent in	icrease)
Scenario	Eastbound	Eastbound	Westbound	Westbound
No LRT	245		207	
LRT (5 Minute Headways)	387	58%	322	56%
LRT (10 Minute Headways)	308	26%	259	25%
LRT (20 Minute Headways)	282	15%	232	12%

 Table 2 LRT Headway Sensitivity Analysis, Queue Lengths

CONCLUSIONS

As more municipalities study the possibility of introducing LRT into the existing traffic infrastructure the analysis methods need to provide accurate impact measures of effectiveness. This paper reviewed the analysis of the impacts to vehicular traffic at an offset-running LRT crossing using the simulation package SimTraffic 4.0.

The LOS impacts of introducing offset-running LRT appear to be approximately a one LOS degradation, with the conflicting approaches absorbing nearly all of the delay. Depending on the LRT headways, queue lengths on the conflicting approaches can increase dramatically. Of course, inputs such as signal timing, traffic volumes, and LRT headways will have a major impact on the results of any particular analysis.

SimTraffic does not explicitly model transit operations. However, given the recent enhancements to the program and the ability of the traffic engineer to provide clever work-arounds, the resulting output can be very helpful in determining the impacts of LRT on the current traffic network. It is worth noting that other "off-the-shelf" programs are available to model transit operations and should be evaluated at the onset of a project to determine the best program to meet your project goals.

Two final comments. It is not the intention of the authors to either endorse or discourage the use of any traffic software analysis package. The SimTraffic program was used to conduct this analysis because it offered several enhancements over the current methodology and it was readily available to the analysts. Finally, the coding procedures used to study the LRT impacts could easily be applied to any headway-based or reoccurring interruption to a traffic stream. Other applications could be drawbridge operations, heavy-rail applications, or special incidents to name a few.

ACKNOWLEDGEMENTS

The analysis methodology presented in this paper was develop while working on the Union County LRT Traffic Impact Study as part of the Supplement Draft Environmental Impact Statement. Special thanks to the project participants.

REFERENCES

- 1. *Preemption of Traffic Signals At or Near Railroad Grade Crossings with Active Warning Devices*, Institute of Transportation Engineers. Washington, DC, 1997.
- 2. *Manual on Uniform Traffic Control Devices for Street and Highways*, Federal Highway Administration, Washington, DC, 1988
- 3. *Program of Instruction for the Highway-Grade Crossing Workshop*, The Traffic Institute Northwestern University. Evanston, IL, 1999.

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APPENDIX C

Existing Traffic Volume Data

National Data & Surveying Services

TMC Summary of 16th St/Commercial St

SOUTHBOUND APPROACH LANES 2 Ν 0 0 16th St TOTAL 65 13 48 Μ 19 16 9 NOON 0 0 0 AM 29 49 **Commercial St Commercial St** J) WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON TOTAL AM PM AM NOON PM 22 0 21 3 18 0 24 46 0 0 1 214 125 192 317 1 131 83 0 0 0 11 13 0 0 13 0 30 19 0 14 12 ₽ 21 NOON 0 0 0 TURNING MOVEMENT COUNT AΜ 20 6 6 16th St / Commercial St (Intersection Name) TOTAL 23 41 21 16th St 0 0.5 1.5 <mark>Tuesday</mark> Day 6/3/08 Date NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

Project #: 08-4148-001

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	16th St	t		DATE: 06/03/2008					LOCATION: City of San Diego					
E-W STREET:	Comme	ercial St			DAY:	TUESD	۹Y	PROJ			08-41	148-001		
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	WESTBOUND				
LANES:	NL 0.5	NT 1.5	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:45 AM	2 5 2 3 2 3 1 4	3 1 4 3 7 4 6 4	3 1 2 4 1 3 1 2	0 1 3 2 0 2 3 1	10 8 16 17 20 9 3 4	5 2 3 9 5 9 6 4	0 0 1 1 0 1 1 2	26 24 20 28 19 13 23 22	1 2 1 3 5 5 6 6	3 1 4 0 5 4 3	21 16 28 32 29 31 33 33	0 1 5 8 3 8 3 3	74 62 86 114 91 93 90 88	
TOTAL VOLUMES =	NL 22	NT 32	NR 17	SL 12	ST 87	SR 43	EL 6	ET 175	ER 29	WL 21	WT 223	WR 31	TOTAL 698	
AM Pe	eak Hr Be	egins at:	745	AM										
PEAK VOLUMES =	9	20	9	7	49	29	3	83 0.820	19	13	125	22	388	
PEAK HR. FACTOR:		0.950			0.759			0.820			0.909		0.851	
CONTROL:	Signaliz	zed												

Signalized CONTROL:

National Data & Surveying Services

N-S STREET:	16th S	t			DATE:	06/03/2	2008		LOC	ATION:	City of	San Die	go	
E-W STREET:	Comme	ercial St			DAY:	TUESD	AY	PROJECT#				08-4148-001		
	NO	ORTHBO	UND	SC	SOUTHBOUND EAS			ASTBOU	OUND WESTBOUND					
LANES:	NL 0.5	NT 1.5	NR <mark>0</mark>	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:30 PM 6:15 PM	7 2 3 2 7 5 0	6 6 4 5 5 2 6 1	2 3 5 2 0 0 0 2	1 2 1 3 2 4	5 1 7 3 3 5 2	8 4 3 4 2 6 3	5 3 7 10 4 3 1	44 35 29 23 32 24 25 24	9 0 1 1 2 0 3 3 3	0 0 0 0 0 3 0	47 45 54 46 46 42 30 40	7 3 8 6 6 7 8 4	141 104 117 102 109 94 96 84	
TOTAL VOLUMES =	NL 28	NT 35	NR 14	SL 16	ST 29	SR 32	EL 36	ET 236	ER 19	WL 3	WT 350	WR 49	TOTAL 847	
PM Pe	eak Hr Be	egins at:	400	PM										
PEAK Volumes =	14	21	12	6	16	19	18	131	11	0	192	24	464	
PEAK HR. FACTOR:		0.783			0.732			0.690			0.871		464 0.823	
	Signali	zed												

CONTROL: Signalized

National Data & Surveying Services

TMC Summary of 16th St/National Ave

SOUTHBOUND APPROACH LANES Ν 0 1 0 16th St TOTAL 20 40 61 PA 25 16 \sim NOON 0 0 0 AM 13 36 24 National Ave National Ave J) WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON AM TOTAL AM PM NOON PM 25 50 0 12 8 0 25 0 4 0 2 2 104 101 90 191 74 30 0 0 0 8 3 0 3 0 22 14 0 6 15 41 ₽ NOON 0 0 0 TURNING MOVEMENT COUNT 7 34 12 AΜ 16th St / National Ave (Intersection Name) TOTAL 26 75 19 16th St 0 0 1 <mark>Tuesday</mark> Day 6/3/08 Date NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

CONTROL: 2-Way Stop Sign (N/S)

	AM PEAK HOUR	730 AM
)	NOON PEAK HOUR	0 AM
	PM PEAK HOUR	400 PM

Project #: 08-4148-002

National Data & Surveying Services

N-S STREET:	16th S	t			DATE:	06/03/2	2008		LOCATION: City of San Diego					
E-W STREET:	Nationa	al Ave		DAY: TUESDAY					PROJECT# 08-4148-002					
	N	ORTHBO	UND	SC	SOUTHBOUND			EASTBOUND			/ESTBOl			
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 2	ER 0	WL 0	WT 2	WR 0	TOTAL	
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM	2 1 4 3 2 1 3	2 1 7 8 5 14 5 11	1 0 4 1 4 3 0 1	3 5 4 8 5 7 7 4	9 10 14 11 5 6 12 16	1 3 6 2 1 4 3 4	0 1 2 0 2 2 6	7 8 6 9 10 5 11 6	1 5 4 1 5 1 3	1 3 1 0 2 0 0 1	21 20 20 36 27 18 18 13	4 1 4 10 6 5 6 2	52 58 76 92 68 71 66 70	
TOTAL VOLUMES =	NL 18	NT 53	NR 14	SL 43	ST 83	SR 24	EL 13	ET 62	ER 24	WL 8	WT 173	WR 38	TOTAL 553	
AM Pe	eak Hr Be	egins at:	730	AM										
PEAK VOLUMES =	11	34	12	24	36	13	4	30	14	3	101	25	307	
PEAK HR. FACTOR:		0.750			0.760			0.923			0.701		307 0.834	
	2-Way	Stop Sig	n (N/S)											

2-Way Stop Sign (N/S) CONTROL:

National Data & Surveying Services

N-S STREET:	16th S	t			DATE:	06/03/2	2008		LOCATION: City of San Diego					
E-W STREET:	Nationa	al Ave		DAY: TUESDAY					PROJECT# 08-4148-002					
	NO	ORTHBOL	JND	D SOUTHBOUND EA				ASTBOU	STBOUND WESTBOUND					
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 2	ER 0	WL 0	WT 2	WR 0	TOTAL	
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:30 PM 6:30 PM	3 2 4 6 5 1 0 1	6 7 17 11 11 10 4 4	2 1 2 2 0 0 0 0	8 3 4 1 3 2 4 6	6 5 6 8 4 3 4 7	4 2 1 0 2 3 0 3	4 2 0 3 0 0 0	17 12 23 22 37 20 10 9	4 2 1 1 0 0 0 2	1 1 1 0 1 0 0 0	28 19 25 18 16 12 14 12	10 5 7 3 9 7 8 9	93 61 93 72 91 58 44 53	
TOTAL VOLUMES =	NL 22	NT 70	NR 7	SL 31	ST 43	SR 15	EL 11	ET 150	ER 10	WL 4	WT 144	WR 58	TOTAL 565	
PM Pe	eak Hr Be	egins at:	400	PM										
PEAK Volumes =	15	41	7	16	25	7	8	74	8	3	90	25	319	
PEAK HR. FACTOR:		0.685			0.667			0.865			0.756		319 0.858	
		Stop Sig	n (NI/C)											

CONTROL: 2-Way Stop Sign (N/S)

National Data & Surveying Services

TMC Summary of Sigsbee St/National Ave



AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	415 PM

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	Sigsbee St DATE: 06/05/2						2008 LOCATION: City of San Diego						
E-W STREET:	Nationa	al Ave			DAY:	THURS	DAY	AY PROJ			JECT# 08-4148-003		
	NORTHBOUND			SOUTHBOUND			E	EASTBOUND V			VESTBOUND		
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:45 AM	4 5 6 15 4 4 15 5	6 1 5 7 8 6 7	2 4 6 8 7 12 11	4 1 2 0 0 2	7 7 11 10 9 11 10 8	2 5 6 9 6 2 1 8	1 0 1 0 1 1 2	9 5 11 5 5 7 9	3 8 6 9 3 6 8 3	1 2 3 1 4 0 6 1	12 12 15 26 22 15 16 9	4 1 4 5 1 3 6 4	55 51 74 93 71 62 88 69
TOTAL VOLUMES =	NL 58	NT 46	NR 54	SL 12	ST 73	SR 39	EL 6	ET 56	ER 46	WL 18	WT 127	WR 28	TOTAL 563
AM Peak Hr Begins at: 745 AM													
PEAK Volumes =	38	26	33	4	40	18	2	22	26	11	79	15	314
PEAK HR. FACTOR:		0.735			0.738			0.781			0.820		0.844
CONTROL:	Signali	zed											

Signalized CONTROL:

National Data & Surveying Services

N-S STREET:	Sigsbe	e St			DATE: 06/05/2008 LO						LOCATION: City of San Diego				
E-W STREET:	Nation	al Ave			DAY:	THURS	DAY	Y PROJECT# 08-4					148-003		
	N	ORTHBO	UND	SC	SOUTHBOUND			EASTBOUND			WESTBOUND				
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL		
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 6:45 PM 6:45 PM	6 12 16 4 2 3 7 3	14 11 8 13 23 13 10 14	5 4 3 1 5 2 0 2	3 1 2 0 0 2 0 0	4 7 5 4 5 2 5	1 3 2 1 2 1 1 2	3 1 0 2 1 1 2	15 14 17 11 31 20 13 10	3 4 8 9 10 1 3 5	3 3 0 1 3 2 1 1	17 13 12 21 8 11 13 17	0 3 1 2 5 0 6 1	74 76 76 70 95 61 57 62		
TOTAL VOLUMES =	NL 53	NT 106	NR 22	SL 8	ST 39	SR 13	EL 12	ET 131	ER 43	WL 14	WT 112	WR 18	TOTAL 571		
PM Peak Hr Begins at: 415 PM															
PEAK VOLUMES =	34	55	13	3	23	8	5	73	31	7	54	11	317		
PEAK HR. FACTOR:		0.850			0.773			0.634			0.750		317 0.834		
CONTROL:	Signali	zed													

CONTROL: Signalized

National Data & Surveying Services

TMC Summary of Sigsbee St/Newton Ave

SOUTHBOUND APPROACH LANES Ν 0 1 0 Sigsbee St TOTAL 75 19 22 PA 25 9 \sim NOON 0 0 0 AM 15 13 50 Newton Ave Newton Ave WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON AM TOTAL AM PM NOON PM 0 13 5 8 20 0 8 28 0 0 1 1 23 44 22 34 0 57 22 0 0 17 3 0 4 0 29 12 0 1 7 58 ₽ 2 NOON 0 0 0 TURNING MOVEMENT COUNT 14 75 AΜ 6 Sigsbee St / Newton Ave (Intersection Name) Sigsbee St TOTAL 133 25 5 0 0 1 Wednesday 6/4/08 Date Day NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	800 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

Project #: 08-4148-004

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

N-S STREET:	Sigsbe	e St			DATE: 06/04/2008 LC						LOCATION: City of San Diego				
E-W STREET:	Newtor	n Ave			DAY: WEDNESDAY					PROJECT# 08-4148-004					
	N	ORTHBO	UND	D SOUTHBOUND			EASTBOUND			WESTBOUND					
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL		
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:45 AM	0 2 4 3 5 2 4	6 5 20 15 13 18 20 24	0 1 1 3 0 0 6 3	3 1 2 2 3 4 6 0	6 16 10 14 6 13 12 19	2 3 4 1 5 3 2 5	2 1 0 1 1 3 1 0	5 4 3 6 4 8 7 3	1 5 6 3 5 3 1	1 0 2 0 1 0 2	8 11 6 8 10 9 7 8	1 0 4 1 3 7 5 5	35 49 59 63 51 76 71 74		
TOTAL VOLUMES =	NL 22	NT 121	NR 14	SL 21	ST 96	SR 25	EL 9	ET 40	ER 29	WL 8	WT 67	WR 26	TOTAL 478		
AM Pe	eak Hr Be	egins at:	800	AM											
PEAK Volumes =	14	75	9	13	50	15	5	22	12	3	34	20	272		
PEAK HR. FACTOR:		0.790			0.813			0.609			0.838		0.895		
CONTROL:	4-Wav	Stop Sig	In												

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

N-S STREET:	Sigsbee St DATE: 06/04/						LOCATION: City of San Diego						
E-W STREET:	Newto	n Ave			DAY:	WEDNE	SDAY PROJECT			JECT#	08-41		
	N	ORTHBO	UND	SOUTHBOUND			EASTBOUND		WESTBOUND				
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 6:45 PM 6:45 PM	6 3 0 2 2 1 4 3	10 14 21 13 10 13 19 10	1 0 1 0 1 0 3	4 0 1 1 2 2 0 1	9 2 10 4 12 11 10 9	4 1 1 1 0 1 1 3	1 1 4 2 4 1 0 0	7 4 6 5 6 2 1 2	2 6 3 3 3 0	0 0 1 0 0 2 0	5 7 9 2 4 3 5	2 2 1 3 4 0 2 2	51 40 61 36 45 39 45 38
TOTAL VOLUMES =	NL 21	NT 110	NR 6	SL 11	ST 67	SR 12	EL 13	ET 33	ER 26	WL 3	WT 37	WR 16	TOTAL 355
PM Peak Hr Begins at: 400 PM													
PEAK Volumes =	11	58	2	6	25	7	8	22	17	1	23	8	188
PEAK HR. FACTOR:		0.807			0.559			0.734			0.727		188 0.770
CONTROL:	4-Way	Stop Sig	n										

CONTROL: 4-Way Stop Sign

NDS

National Data & Surveying Services

TMC Summary of Sigsbee St/Main St



AM PEAK HOUR	800 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

CONTROL: 4-way stop sign
National Data & Surveying Services

N-S STREET:	Sigsbee	e St			DATE:	06/04/2	2008		LOC	ATION:	City of	San Die	до
E-W STREET:	Main St	:			DAY:	WEDNE	SDAY		PRO	JECT#	08-4	148-005	
	NC	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOI	JND	
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:45 AM 11:00 AM 11:15 AM	0 0 1 1 0 1 0	6 4 12 11 7 10 10 12	0 0 1 0 1 3 1	2 4 6 8 4 10 9 8	10 15 12 8 9 10 9 14	0 1 2 1 1 0 0	0 1 0 0 0 1	3 1 0 3 1 1 2	0 0 0 0 1 0	0 1 2 1 2 1	1 2 0 1 1 0 2 1	2 5 11 13 12 13 17 19	24 33 44 49 36 48 55 59
TOTAL VOLUMES =	NL 3	NT 72	NR 6	SL 51	ST 87	SR 5	EL 2	ET 12	ER 1	WL 9	WT 8	WR 92	TOTAL 348
AM Pe	eak Hr Be	gins at:	800	AM									
PEAK VOLUMES =	1	39	5	31	42	2	1	5	1	6	4	61	198
PEAK HR. FACTOR:		0.804			0.852			0.583			0.845		0.839
CONTROL:	4-way	stop sign	1										

National Data & Surveying Services

N-S STREET:	Sigsbe	e St			DATE:	06/04/2	2008		LOC	ATION:	City of	San Die	go
E-W STREET:	Main S	t			DAY:	WEDNE	SDAY		PRO	JECT#	08-41	148-005	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	IND	W	/ESTBOI	JND	
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 6:45 PM 6:45 PM		10 8 15 6 8 11 17 7	0 0 1 0 5 0 2 0	4 2 8 6 9 5 7	8 6 9 4 5 3 9 6	0 0 1 0 0 0 0	0 3 1 0 0 0 0	0 1 0 0 0 0 0	3 0 0 0 0 0 0	1 3 0 6 0 0 2	0 0 0 0 1 0 0	12 6 7 6 9 11 7	38 29 42 28 30 33 44 29
TOTAL VOLUMES =	NL O	NT 82	NR 8	SL 47	ST 50	SR 1	EL 4	ET 1	ER 3	WL 12	WT 1	WR 64	TOTAL 273
PM Pe	eak Hr Be	egins at:	400	PM									
PEAK Volumes =	0	39	1	20	27	1	4	1	3	10	0	31	137 0.815
PEAK HR. FACTOR:		0.625			0.667			0.500			0.788		0.815
	1 1000	stop sign	_										

CONTROL: 4-way stop sign

S: () N + + + + + + + + + + - - - - - - - - - - - - -		0 NR	0 SL 1 		0 SR 2 	1 EL 6 	2 ET 69 1 80 4 1 70 4 70 4 79 6	0 ER	0 WL	2 WT 122 1 1 2 131 6 1 191 191 11 1 1 184 4	0 WR 0 1 3 3 3 4 4
+					6	6 1 2	1 80 4 1 70 4 4 79			12 1 2 131 6 1 191 11 1 1 184	1 3 3 4
+					6	6 1 2	1 80 4 1 70 4 4 79			12 1 2 131 6 1 191 11 1 1 184	1 3 3 4
+					5	2	80 4 1 70 4 79			1 2 131 6 1 191 191 11 11 1 1 184	3
+					5	2	4 1 70 4 79			2 131 6 1 191 191 11 11 1 1 184	3
+					5	2	4 1 70 4 79			131 6 1 191 11 11 1 1 1 184	3
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.auoi	1: Sigsbee St LANES:	t & E. Harb 0	or Dr 0	0	City: 0	San 1	Diego 0	Date: 1	12/3/08 2	0	0 0	Wednesday 2	0
	LANLS.	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
.00	CADS				1		2	11	199			02	1
	CARS						3	11				83	1
	2-axle						1		6			3	
	3-axle												1
	4-axle												
									2				
	5-axle +								2				
:15	CARS				2		4	10	224			78	1
	2-axle							1	9			1	
	3-axle											1	
	4-axle											<u> </u>	
	5-axle +												
:30	CARS				1		1	16	278			82	2
	2-axle						1	1	10				1
									10				1
	3-axle											+	
	4-axle											 	
	5-axle +												
	CARS				1		2	13	278			91	2
					1		2						2
	2-axle							2	2			2	
	3-axle								1			2	
	4-axle												
	5-axle +								3			1	
					_								
:00	CARS				5		3	22	289			66	0
	2-axle						1					4	
	3-axle								1				
	4-axle												
									1				
	5-axle +								1			<u> </u>	
:15	CARS				0		6	22	290			63	6
	2-axle												
	3-axle												
	4-axle											 	
	5-axle +											├ ──	
:30	CARS				1		1	4	236			51	1
	2-axle						2		4				1
	3-axle												
	4-axle						-					<u> </u>	
	5-axle +				1				1				
:45	CARS				2		1	13	170			46	1
	2-axle												
							1					├─── ┤	
	3-axle											┥──┤	
	4-axle												
	5-axle +						1						
					-	M	VEMENT TO					·	
	CARS	0	0	0	13	0	21	111	1964	0	0	560	14
	2-axle 3-axle	0	0	0	0	0	5 0	4	31 2	0	0	10 3	2
	4-axle	0	0	0	0	0	0	0	0	0	0	0	0
	5-axle +	0	0	0	1	0	1	0	7	0	0	1	0

PM Peak Hr Begii 1630 PM CONTROL: 1-Way Stop (SB)

UNTROL: I-Wa	y Stop (SB)												
	0	0	0	7	0	14	76	1153	0	0	311	11	
		0.000			0.583			0.982			0.821		l

Latio	n: Beardsley LANES:	0 0	1	0	0	San 1	0	Date: 0	12/3/08	0	1	Wednesday	0
	LANES:	NL	I NT	0 NR	SL	ST	SR	EL	1 ET	ER	I WL	1 WT	WF
:00	CARS	5			56	18	1		12	2	6	17	
:00					50	10					0		
	2-axle	1		4					4	1		6	
	3-axle			3			1						
	4-axle								1				
	5-axle +								4	1			
:15	CARS			1	55	33	4		13	3	2	9	
	2-axle								2	1		4	
	3-axle						1		3			2	
	4-axle												
		2		2									
	5-axle +	2		2									
:30	CARS				33	43	3		11	2	4	14	
	2-axle	1		7		1						3	
	3-axle	1			1		1						
	4-axle								1				
	5-axle +												
7:45	CARS			7	18	46	7		17	1	14	15	
	2-axle	3		4	1	2	1		1			3	
		5				2				1		5	
	3-axle									1			
	4-axle												
	5-axle +												
8:00	CARS			10	17	38	3		18	6	6	2	
	2-axle	2		1		3			1		1	9	
	3-axle												
	4-axle								1				
	5-axle +	1											
8:15	CARS	4		15	24	33	3		13	3	5	13	
J. I J							5				5	7	
	2-axle	2		1	1	3			8	1		/	
	3-axle					2							
	4-axle												
	5-axle +				1		1					1	
8:30	CARS			10	38	29	3		15	3	4	9	
	2-axle	2				2	2		1		3	4	
	3-axle												
	4-axle												
	5-axle +			1			1						
). AF					٦E	27			14	1	22	14	
3:45	CARS			11	25	32			16	1	22	14	
	2-axle			3		1	1		2	1	2	5	
	3-axle												
	4-axle												
	5-axle +	2		1									
							VEMENT TO						
	CARS 2-axle	9 11	0	54 20	266 2	272 12	24 4	0	115 19	21 4	63 6	93 41	0
	3-axle	1	0	3	1	2	3	0	3	1	0	2	0
	4-axle 5-axle +	0 5	0	0 4	0	0	0	0	3 4	0	0	0	0
	TOTALS	26 NL	0 NT	81 NR	270 SL	286 ST	33 SR	0 EL	144 <i>ET</i>	27 ER	69 WL	137 WT	0 Wł

PM Peak Hr Begii 700 AM

Control: 4-Way Sto	a												
	13	0	28	164	143	19	0	69	12	26	73	0	L
		0.732			0.876			0.810			0.773		

ocatior				Logan Ave			Diego	Date:	12/3/08			Wednesday	
	LANES:	0 NL	1 NT	0 NR	0 SL	1 ST	0 SR	0 EL	1 ET	0 ER	1 WL	1 WT	0 WR
								LL					
6:00	CARS	3		14	27	15	4		39	3	6	9	
	2-axle	1			1	3	1		5	1	1	1	
	3-axle												
	4-axle												
	5-axle +			1									
						_	_						
16:15	CARS	1		14	25	9	3		24	2	6	8	
	2-axle	2			1	1			4			1	
	3-axle					1							
	4-axle												
	5-axle +												
		,		1/	21	10	2		42	4	4	9	
16:30		6		16	31	10	2			4	4		
	2-axle	1		1		2			5			3	
	3-axle												
	4-axle												
	5-axle +												
16:45	CARS	7		12	32	8	2		35		4	14	
		,			52	0	2					14	
	2-axle			4						3	4		
	3-axle									1			
	4-axle												
	5-axle +												
17:00	CARS	8		16	24	5	3		43	3	4	10	
	2-axle	2			2	1			3	1	1	4	
		Z			2				5			4	
	3-axle					2							
	4-axle												
	5-axle +				1	2							
17:15	CARS	8		12	29	12	2		34	5	6	9	
	2-axle			2	1	3	1		2	1	1		
	3-axle												
	4-axle												
	5-axle +												
17:30	CARS	4		12	21	6			31	6	7	3	
	2-axle	1			2				4			2	
	3-axle												
												1	
	4-axle	1											
	5-axle +	1										1	
17:45	CARS	3		8	9	7	1		31	1	4	7	
	2-axle								2			2	
	3-axle												
	4-axle											T	
	5-axle +												
l	J-arif +		1	1	1		L			L	1	1	
I	CARS	40	0	104	198	72 MC	VEMENT TO 17	TALS 0	279	24	41	69	0
	2-axle	7	0	7	7	10	2	0	25	6	7	13	0
	3-axle 4-axle	0	0	0	0	3	0	0	0	1	0	0	0
	5-axle +	1	0	1	1	2	0	0	0	0	0	1	0
	TOTALS	48 NL	0 <i>NT</i>	112 NR	206 <i>SL</i>	87 ST	19 SR	0 <i>EL</i>	304 ET	31 ER	48 WL	84 WT	0 W/

PM Peak Hr Begii 1630 PM

Control: 4-Way S													
	32	0	63	120	45	10	0	164	18	24	49	0	
		0.913			0.911			0.892			0.830		

catior	h: Beardsley	0	1	Logan Ave 0	0	1	Diego 0	Date: 0	12/2/08 1	0	1	Tuesday 1	0
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
:00	CARS	4		5	53	18	0		19		5	26	
	2-axle	1		2					1			3	
	3-axle			1			1						
	4-axle												
	5-axle +								1	2			
	CARS	3		1	54	36	1		16	0	1	17	
:15				1	- 34	30	1		10				
	2-axle	1								1		1	
	3-axle						1		4			1	
	4-axle								-				
	5-axle +			1									
:30	CARS	0		2	32	47	6		11	3	5	13	
	2-axle	1		3		2						2	
	3-axle			1									
	4-axle								1				
	5-axle +				1								
		-		10		50			0.1				
	CARS	5		10	18	50	9		21	0	14	21	
	2-axle			2		1	1		1			2	
	3-axle								-	2			
	4-axle												
	5-axle +	1											
:00	CARS	4		8	14	43	0		11	5	8	5	
	2-axle	1		2		1	2		2	1	1	3	
	3-axle												
	4-axle								1				
	5-axle +								- 1			1	
										-			
:15	CARS	4		17	27	33	4		15	2	3	22	
	2-axle	1		1		2			3	1	1	2	
	3-axle					1							
	4-axle												
	5-axle +				1							1	
:30	CARS			12	37	29	2		14	3	5	11	
	2-axle	2					2		2		2	2	
	3-axle												
	4-axle								1				
	5-axle +			1			1				1		
4-									10	-		10	
	CARS	6		11	24	27	4		18	5	12	13	
	2-axle			3	-	2			2	2	1	3	
	3-axle												
	4-axle												
	5-axle +	1											
							VEMENT TO	TALS					
	CARS 2-axle	26 7	0	66 13	259 0	283 8	26 5	0	125 11	18 5	53 5	128 18	0
	3-axle	0	0	2	0	1	2	0	4	2	0	1	0
	4-axle	0	0	0	0	0	0	0	2	0	0	0	0
	5-axle + TOTALS	35	0	83	2 261	292	34	0	143	27	1 59	2 149	0

PM Peak Hr Begii 700 AM

Control: 4-Way S													
	16	0	28	158	154	19	0	75	8	25	86	0	L
		0.611			0.899			0.865			0.750		

ocation: Beardsle	ey St/I-5 SB	Off-Ramp &	Logan Ave	City:		8-4335-001 Diego	Date:	12/2/08		Day:	Tuesday	
LANES:	0	1	0	0	1	0	0	1	0	1	1	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
6:00 CARS	12		16	53	18	8		76	12	7	21	
2-axle	1		2		1			5			1	
3-axle												
4-axle												
5-axle +												
16:15 CARS	3		22	48	31	8		63	15	5	17	
2-axle	1				1			3			1	
3-axle												
4-axle												
5-axle +									_	_		
16:30 CARS	6		27	48	20	8		55	7	5	12	
2-axle	1		1					4		1	4	
3-axle				1							1	
4-axle								1				
5-axle +				1								
16:45 CARS	3		20	46	25	8		59	17	14	16	
2-axle					1			5	1	1	4	
3-axle												
4-axle												
5-axle +				1	1							
17:00 CARS	6		29	31	23	9		58	9	3	5	
	0		27		23	7		4	7	3	1	
2-axle				1				4			- '	
3-axle												
4-axle												
5-axle +												
17:15 CARS	4		15	37	14	8		64	9	7	10	
2-axle					1			2		1	1	
3-axle												
4-axle												
5-axle +												
17:30 CARS	10		26	49	25	8		48	26	9	14	
2-axle				1	1			1			1	
3-axle			ſ		1							
4-axle												
5-axle +												
	2		_	24	44			F/	4.4	0	_	
17:45 CARS	3		7	34	11	4		56	11	8	7	
2-axle					1			2			3	
3-axle												
4-axle												
5-axle +												
0400	47	^	1/0	244		VEMENT TO		470	10/	50	100	~
CARS 2-axle	47 3	0	162 3	346 2	167 6	61 0	0	479 26	106 1	58 3	102 16	0
3-axle	0	0	0	1	1	0	0	0	0	0	1	0

4-axle 0 119 *WT* 165 *NR* 351 *SL* 175 *ST* 61 *SR* 506 *ET* 107 *ER* 61 WL 5-axle NL EL WR TOTALS NT

PM Peak Hr Begii 1600 PM

Control: 4-Way S	Stop												
,	27	0	88	198	98	32	0	271	52	33	77	0	L
		0.821			0.932			0.868			0.786		

National Data & Surveying Services

TMC Summary of Beardsley St/National Ave

SOUTHBOUND APPROACH LANES Ν 0 1 1 Beardsley St TOTAL 221 49 34 PA 7 83 29 NOON 0 0 0 AM 138 23 20 National Ave National Ave J) WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON TOTAL AM PM AM NOON PM 0 27 8 19 18 0 12 30 0 0 1 137 148 1 71 77 41 0 96 0 0 2 68 0 33 101 0 10 8 0 43 43 ₽ 6 NOON 0 0 0 TURNING MOVEMENT COUNT 30 13 AΜ 4 Beardsley St / National Ave Beardsley St (Intersection Name) TOTAL 13 73 56 0 1 1 Thursday 6/5/08 Date Day NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	415 PM

Project #: 08-4148-008

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

N-S STREET:	Beards	ey St			DATE:	06/05/2	2008		LOC	ATION:	ION: City of San Diego			
E-W STREET:	Nationa	II Ave			DAY:	THURS	DAY		PRO	JECT#	08-41	148-008		
	NC	RTHBO	UND	S	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	JND		
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM	0 3 1 2 1 0 1 2	7 3 8 8 10 7 5 9	5 2 3 2 7 3 1 6	1 7 2 3 5 7 8	23 33 38 37 38 32 31 35	4 6 8 8 1 6 2	2 3 5 0 4 1 3 1	9 8 11 6 12 11 12 6	1 1 0 3 1 4 0 0	6 7 11 15 17 15 21 5	13 18 12 25 16 15 15 23	2 5 1 9 5 4 0 5	73 96 100 118 124 98 102 102	
TOTAL VOLUMES =	NL 10	NT 57	NR 29	SL 38	ST 267	SR 43	EL 19	ET 75	ER 10	WL 97	WT 137	WR 31	TOTAL 813	
AM Pe	eak Hr Be	gins at:	745	AM										
PEAK Volumes =	4	30	13	20	138	23	8	41	8	68	71	18	442	
PEAK HR. FACTOR:		0.653			0.887			0.838			0.801		442 0.891	
CONTROL:	4-Way	Stop Sig	n											

National Data & Surveying Services

N-S STREET:	Beards	ley St			DATE:	06/05/	2008		LOC	ATION:	ON: City of San Diego			
E-W STREET:	Nationa	al Ave			DAY:	THURS	DAY		PRO	JECT#	08-41	48-008		
	NC	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	IND	W	ESTBOL	JND		
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL O	WT 1	WR 0	TOTAL	
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:30 PM 6:45 PM	4 2 3 4 0 8 0 2	11 9 11 6 17 15 13 9	9 9 7 18 4 4 5	8 7 8 6 8 7 7 7	20 19 29 16 19 16 12 16	5 5 3 1 2 0 3 4	5 4 3 6 2 0 3	25 23 22 19 32 19 20 7	3 1 0 1 1 0 2	6 9 10 9 5 5 5 5	17 19 28 11 7 16 16	5 2 3 2 5 3 2 0	118 109 120 104 124 87 82 76	
TOTAL VOLUMES =	NL 23	NT 91	NR 65	SL 58	ST 147	SR 23	EL 29	ET 167	ER 8	WL 54	WT 133	WR 22	TOTAL 820	
	eak Hr Be	egins at:	415	PM			-			-			- •	
PEAK Volumes =	9	43	43	29	83	11	19	96	2	33	77	12	457	
PEAK HR. FACTOR:		0.679			0.769			0.750			0.782		0.921	
		o. o.												

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

TMC Summary of Beardsley St/Newton Ave

SOUTHBOUND APPROACH LANES Ν 0 1 0 Beardsley St TOTAL 218 96 37 PA 6 8 44 NOON 0 0 0 AM 137 28 52 Newton Ave Newton Ave J) WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON TOTAL AM PM AM NOON PM 15 0 18 5 0 19 34 0 13 0 1 47 1 59 28 39 86 31 0 0 0 16 0 22 0 4 3 0 1 6 99 16 ₽ NOON 0 0 0 TURNING MOVEMENT COUNT 23 7 AΜ വ Beardsley St / Newton Ave Beardsley St (Intersection Name) TOTAL 89 27 9 0 0 1 Thursday 6/5/08 Date Day NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

Project #: 08-4148-009

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

N-S STREET:	Beards	ley St			DATE:	06/05/2	2008		LOC	ATION:	go		
E-W STREET:	Newtor	ר Ave			DAY:	THURS	DAY		PRO	JECT#	08-4	148-009	
	NC	ORTHBO	UND	S	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOl	JND	
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM	0 0 2 1 2 0 0	8 9 6 9 8 1 5 10	1 2 4 4 2 1 4 4	9 7 12 13 14 13 12	19 29 33 31 39 34 25	3 6 5 6 10 6 6 3	1 1 2 6 3 2 1	7 8 9 7 8 7 9 12	1 3 0 2 0 0 1 1	4 0 9 5 4 3 3	6 5 11 8 9 13 9	2 6 7 4 3 1 6	61 72 81 97 96 89 91 86
TOTAL VOLUMES =	NL 5	NT 56	NR 22	SL 82	ST 239	SR 45	EL 16	ET 67	ER 8	WL 32	WT 70	WR 31	TOTAL 673
	eak Hr Be	egins at:	745	AM									
PEAK Volumes =	5	23	11	52	137	28	13	31	3	16	39	15	373
PEAK HR. FACTOR:		0.650			0.919			0.839			0.875	15	0.961
CONTROL:	4-Way	Stop Sig	n										

National Data & Surveying Services

N-S STREET:	Beards	ley St			DATE:	06/05/2	2008	008 LOCATION: City of San Diego						
E-W STREET:	Newto	n Ave			DAY:	THURS	DAY		PRO	JECT#	08-4148-009			
	N	ORTHBO	UND	SC	OUTHBOL	JND	E	ASTBOU	ND	W	/ESTBOL	JND		
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:15 PM	0 0 1 1 1 2	20 16 17 13 14 17 12 15	6 3 2 5 2 4 0 1	9 11 14 10 5 7 7 2	19 19 26 17 17 14 14 15	2 1 3 2 2 2 1	1 0 3 1 4 2 3 1	7 5 10 6 10 6 9 8	0 1 0 0 0 1 0	3 0 2 1 3 3 5	14 12 9 12 13 9 9	5 5 4 6 2 1	86 73 94 70 76 75 63 60	
TOTAL VOLUMES =	NL 6	NT 124	NR 23	SL 65	ST 141	SR 16	EL 15	ET 61	ER 2	WL 20	WT 90	WR 34	TOTAL 597	
PM Pe	eak Hr Be	egins at:	400	PM										
PEAK Volumes =	1	66	16	44	81	9	5	28	1	6	47	19	323	
PEAK HR. FACTOR:		0.798			0.779			0.654			0.818		323 0.859	
		Ctop Cir	-											

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

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TMC Summary of Beardsley St/Main St

SOUTHBOUND APPROACH LANES Ν 0 1 0 Beardsley St TOTAL 69 96 35 15 Μ 17 39 NOON 0 0 0 AM 20 52 57 Main St Main St J) WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON TOTAL AM PM AM NOON PM 20 9 0 37 15 22 0 29 0 0 1 111 33 123 1 49 90 62 0 0 0 4 35 0 15 50 0 8 4 0 25 ₽ 0 31 NOON 0 0 0 TURNING MOVEMENT COUNT 16 AΜ \sim ω Beardsley St / Main St Beardsley St (Intersection Name) TOTAL 33 47 2 0 0 1 Thursday 6/5/08 Date Day NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	800 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

Project #: 08-4148-010

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

N-S STREET:	Beards	ley St			DATE:	06/05/2	205/2008 LOCATION: City of San Diego						go
E-W STREET:	Main S	t			DAY:	THURS	DAY		PRO	JECT# 08-4148-010			
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	ESTBOL	IND	
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:45 AM	0 0 1 2 0 0 0	7 1 4 3 1 1 5	0 0 0 7 2 2 5	2 7 6 5 7 6 3 4	17 25 30 19 15 12 17 13	4 11 9 19 15 9	3 2 1 4 5 1 1 8	2 1 14 15 11 15 19 17	0 3 0 1 1 1 1	5 9 6 8 8 7 12	5 9 15 21 19 22 37 12	3 7 6 3 7 3 7	48 65 94 92 88 94 106 93
TOTAL VOLUMES =	NL 3	NT 23	NR 16	SL 40	ST 148	SR 77	EL 25	ET 94	ER 8	WL 63	WT 140	WR 43	TOTAL 680
AM Pe	eak Hr Be	egins at:	800	AM									
PEAK Volumes =	2	8	16	20	57	52	15	62	4	35	90	20	381
PEAK HR. FACTOR:		0.650			0.872			0.779			0.771		381 0.899
CONTROL	4-Way	Stop Sig	In										

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

N-S STREET:	Beards	ley St			DATE:	06/05/	/05/2008 LOCATION: City of San Diego						до
E-W STREET:	Main S	t			DAY:	THURS	DAY		PRO	JECT#	08-41	48-010	
	N	ORTHBO		S	OUTHBO		F	ASTBOU		W	/ESTBOL	IND	
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM 1:15 PM 1:30 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:15 PM 6:30 PM	0 0 0 0 0 1 1 0	11 5 2 7 7 14 7 8	8 6 5 12 7 5 7 5	3 4 6 2 3 2 9	14 8 10 7 10 3 6 6	1 3 10 3 6 5 9 6	4 8 7 3 2 2 4	14 14 12 9 6 5 6 11	0 0 1 3 6 1 2 0	5 4 2 5 3 1 2	6 10 10 7 8 1 7 8	1 4 3 1 5 1 2 2	67 66 70 56 65 44 52 61
TOTAL VOLUMES =	NL 2	NT 61	NR 55	SL 32	ST 64	SR 43	EL 32	ET 77	ER 13	WL 26	WT 57	WR 19	TOTAL 481
PM Pe	eak Hr Be	egins at:	400	PM									
PEAK VOLUMES =	0	25	31	15	39	17	22	49	4	15	33	9	259
PEAK HR. FACTOR:		0.737			0.683			0.852			0.792		259 0.925
	1_\//av	Stop Sic	ar										

CONTROL: 4-Way Stop Sign

Intersection Turning Movement Prepared by: Southland Car Counters

N-S STREET:	Harbo	r Dr.			DATE:	2/16/	2006	LOCATION: City of San Diego					ego
E-W STREET:	Beard	sley St.			DAY:	THUR	SDAY		PRO	DJECT#	06-40)58-001	
	N	ORTHBO	UND	S	OUTHBOI	JND		EASTBOU	ND	۷	VESTBOL	JND	
LANES:	NL 0	NT 2	NR 0	SL 1	ST 2	SR 0	EL 0	ET 0	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM		180 238 204 259 206 180 162 200	6 3 5 2 6 1 3 5	5 3 6 1 3 2 4 2	34 61 46 65 37 47 36 58					9 7 8 5 10 2 6 4		15 13 19 9 13 12 14 10	249 325 288 341 275 244 225 279
10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM 11:30 AM 11:45 AM	L MI	NT	ND	SL		CD	1 51		50	L wit	WT	14/2	TOTAL
VOLUMES =	NL O	1629	NR 31	26	ST 384	SR 0	EL 0	ET 0	ER 0	WL 51	WT 0	WR 105	TOTAL 2226
AM Pea		1734		410	sb d) 435			eb d) 57		wba 156		l	
PEAK VOLUMES =	0	907	16	13	209	0	0	0	0	30	0	54	1229
PEAK HR. FACTOR:		0.884			209 0.841			0.000			0.778		0.901
CONTROL:	1WayS	top(WB)											

A-23

Intersection Turning Movement Prepared by: Southland Car Counters

N-S STREET:	Harbor	Dr.			DATE: 2	2/16/2	006		LOCATION: City of San Diego				
E-W STREET:	Beardsl	ey St.			DAY: 1	THURS	DAY		PRO	JECT#	06-40	58-001	
	NC	RTHBOU	ND	50	UTHBOU	IND	E	ASTBOUN	1D	w	ESTBOU	ND	
	NC	RTIDOO		00	0111500						1000		TOTAL
LANES:	NL O	NT 2	NR 0	SL 1	ST 2	SR 0	EL 0	ET 0	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM													
1:15 PM 1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM								61					
3:15 PM													
3:30 PM													
3:45 PM 4:00 PM		50	4	19	281					5		5	364
4:15 PM		63	7	16	267					9		2	364
4:30 PM		90	3	20	277					6		4	400
4:45 PM		84	2	10	310					7		1	414
5:00 PM		78	6	17	291					5		6 5	403 397
5:15 PM		77	5	13	289					8		3	303
5:30 PM		58	8	10	220					4 5		2	347
5:45 PM		70	4	8	258					5		2	5.17
6:00 PM													
6:15 PM 6:30 PM													
6:45 PM													
0.45 FM													
TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	0	570	39	113	2193	0	0	0	0	49	0	28	2992
	1			I,	2 2		1	one a		l wh a	ah d		1 1
	nb a			sb a	sb d			eb d) 152		wba 77			
	609		420	2306	2242		L.	J 152		//	v		
PM P	eak Hr Be	egins at:	430	PM									
PEAK										24		105	
VOLUMES =	0	329	16	60	1167	0	0	0	0	26	0	16	1614
	100	15.552	-	1									
PEAK HR.				1				2 2 2 2 2		1.	0.000		0.975
FACTOR:		0.927		1	0.959		I	0.000		1	0.808		0.975
CONTROL:	1Wav5	Stop(WB)											

NA NA NA NA SA SA SA ET SA NA NA NA 00 2436 244 18 - 400 6 - - 97 200 1 2x00 5 1 - 1 - - 1 - 400 1 - 400 1 - 400 1 - 400 1 - 400 1 - 400 1 - 1 - 1 1 - 1 1 - 1	catio	n: Cesar Chi LANES:		& Kearny Ave	e 0	City:		Diego	Date: 0	12/2/08 0	0		Tuesday 0.3	0.3
0 Ads 2.4 18 1 40 6 1 </th <th></th> <th>LANES:</th> <th>1.5 NI</th> <th>0.5 NT</th> <th></th> <th>0 SI</th> <th>1.5 ST</th> <th>0.5 SR</th> <th></th> <th></th> <th></th> <th>1.3 WI</th> <th></th> <th>U.S WF</th>		LANES:	1.5 NI	0.5 NT		0 SI	1.5 ST	0.5 SR				1.3 WI		U.S WF
2ace 5. 1 1.														
Jane Lan Lan <thlan< th=""> <thlan< td="" th<=""><td>:00</td><td>CARS</td><td></td><td>18</td><td></td><td></td><td>40</td><td>6</td><td></td><td></td><td></td><td>97</td><td>20</td><td>16</td></thlan<></thlan<>	:00	CARS		18			40	6				97	20	16
4xt0 <		2-axle	5	1			1					6		
Sade Image		3-axle												
Sade Image		4-axle										1		
Ans Ans As A														
2ade 1 1 3 1 1 5 1 1 3ade 1								_						
axic I. I	/:15	CARS	26	15				5					23	14
sade I <thi< th=""> I I I</thi<>		2-axle					3					5		1
Sade 1 1 1 1 1 1 1 1 1 2 Sade 25 23 1 41 4 1 1 1 1 2 1 2ade 2 1 1 1 3 1 1 1 1 1 1 1 3ade 1		3-axle										1		
And Add Add Add Add Add Add Add Add Add		4-axle												
And CARS 25 23 41 4 115 24 2ade 2 33 88 1 3ade 1 3 1 1 1 3ade 1 1 1 1 3ade 1 1 1 1 3ade 1 49 2 1 1 3ade 5 5 3 1 1 3ade 1 1 1 1 3ade 1 1 1 1 1 4ade 1 1 1 1 1 3ade 1 1 1 1 4ade 1		5-axle +	1										2	
2-ade 2 3 8 1 3-ade 1	7 00			22			41					115		1/
3-ade <	/:30	CARS		23				4					24	16
4-ade 1 1 1 1 1 1 1 1 1 1 1 1 1 <		2-axle	2				3					8		
Soute + Image: book + Image: boo		3-axle										1		
7.45 CARS 24 28 449 2 10 126 45 2 2.ade 5 5 3 3 1 1 1 1 1 3.ade 1 1 1 1 1 1 1 1 1 4.ade 1 1 1 1 1 1 1 1 1 1 5.ade + 1 1 1 1 1 1 1 1 1 1 1 2.ade 3 2 1 44 4 1 1 1 1 1 2.ade 3 2 1 5 2 1 1 1 1 3.ade 1 1 1 1 1 1 1 1 1 3.ade 1 1 1 1 1 1 1 1 1 4.ade 1 1 1 1 1 1 1 1 3.ade 1 1 1 1 1 1 1 1 3.ade 1 1 1 1 1 1 1 <		4-axle	1											
7.45 CARS 24 28 449 2 10 126 45 2 2.ade 5 5 3 3 1 1 1 1 1 3.ade 1 1 1 1 1 1 1 1 1 4.ade 1 1 1 1 1 1 1 1 1 1 5.ade + 1 1 1 1 1 1 1 1 1 1 1 2.ade 3 2 1 44 4 1 1 1 1 1 2.ade 3 2 1 5 2 1 1 1 1 3.ade 1 1 1 1 1 1 1 1 1 3.ade 1 1 1 1 1 1 1 1 1 4.ade 1 1 1 1 1 1 1 1 3.ade 1 1 1 1 1 1 1 1 3.ade 1 1 1 1 1 1 1 <		5-axle +										1		
2 axic 5 5 3 3 1 1 5 1 3 axic 1 1 2 1 <td< td=""><td>7.45</td><td></td><td>24</td><td>20</td><td></td><td></td><td>40</td><td>2</td><td></td><td></td><td></td><td></td><td>45</td><td>21</td></td<>	7.45		24	20			40	2					45	21
3-ade <	/:45							2					45	21
4-ade 1 <td></td> <td>2-axle</td> <td>5</td> <td>5</td> <td></td> <td></td> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td>5</td> <td></td> <td></td>		2-axle	5	5			3					5		
S-ade + Image: state +		3-axle					2							
8:00 CARS 19 26 44 4 4 4 4 4 4 113 40 1 2:ade 3 2 5 2 10 10 1 1 3:ade 1 1 1 1 10 1 <td></td> <td>4-axle</td> <td></td>		4-axle												
8:00 CARS 19 26 44 4 4 4 4 4 4 113 40 1 2:ade 3 2 5 2 10 10 1 1 3:ade 1 1 1 1 10 1 <td></td> <td>5-axle +</td> <td></td> <td>2</td> <td></td>		5-axle +											2	
2-axle 3 2 5 2 10 10 10 3-axle 1 1 1 1 1 10 10 10 3-axle 1 1 1 1 10 11 10 11 5-axle + 1 1 1 10 11 10 11 10 </td <td>8.00</td> <td></td> <td>10</td> <td>26</td> <td></td> <td></td> <td>44</td> <td>4</td> <td></td> <td></td> <td></td> <td>113</td> <td></td> <td>12</td>	8.00		10	26			44	4				113		12
3-ade 3 4-ade 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <	0.00												40	12
4-ade 1 <td></td> <td>2-axle</td> <td>3</td> <td>2</td> <td></td> <td></td> <td>5</td> <td>2</td> <td></td> <td></td> <td></td> <td>10</td> <td></td> <td></td>		2-axle	3	2			5	2				10		
$\overline{5}$ -ade + I <thi< th=""> I I <thi< th=""> <th< td=""><td></td><td>3-axle</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>3</td><td></td><td></td></th<></thi<></thi<>		3-axle										3		
8:15 CARS 27 18 43 2 1 126 21 1 2-axle 3 4 1 1 5 1 5 1 3-axle 1 1 1 1 1 1 1 1 1 1 4-axle 1		4-axle					1							
2-axle 3 4 1 1 5 1 3-axle 1 1 1 1 1 1 1 <t< td=""><td></td><td>5-axle +</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td></t<>		5-axle +										1		
2-axle 3 4 1 1 5 1 3-axle 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <td>8·15</td> <td>CARS</td> <td>27</td> <td>18</td> <td></td> <td></td> <td>43</td> <td>2</td> <td></td> <td></td> <td></td> <td>126</td> <td>21</td> <td>11</td>	8·15	CARS	27	18			43	2				126	21	11
3-axle <t< td=""><td>0.10</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	0.10							-						
4-axle <t< td=""><td></td><td></td><td>3</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td></t<>			3	4									1	
5-axle +		3-axle										1		
8:30 CARS 15 29 46 0 94 16 2 2-axle 2 5 1 44 1		4-axle												
2-axle 2		5-axle +										1	1	
3-axle 1 <td>8:30</td> <td>CARS</td> <td>15</td> <td>29</td> <td></td> <td></td> <td>46</td> <td>0</td> <td></td> <td></td> <td></td> <td>94</td> <td>16</td> <td>24</td>	8:30	CARS	15	29			46	0				94	16	24
3-axle 1 <td></td> <td>Δ</td> <td></td> <td></td>												Δ		
4-axle 1 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>· ·</td> <td></td> <td></td> <td></td> <td>+</td> <td></td> <td></td>								· ·				+		
5-axle + 1 1 1 1 1 1 1 8:45 CARS 23 24 46 2 124 14 1 8:45 CARS 23 24 7 1 11 1 3-axle 1 7 1 11 11 1 3-axle 1 1 1 1 1 1 1 4-axle 1 1 1 1 1 1 1 1 1 5-axle + 1		3-axle	1				1						1	
B:45 CARS 23 24 46 2 1 124 14 1 2-axle 4 1 7 1 11 11 1 3-axle 1 1 7 1 11 1 1 4-axle 1 1 1 1 1 1 1 1 1 1 4-axle 1 <th1< td=""><td></td><td>4-axle</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td>-</td><td></td></th1<>		4-axle									-		-	
2-axle 4 1 7 1 11 1 3-axle 1 1 1 1 1 1 1 4-axle 1 1 1 1 1 2 1 4-axle 1 1 1 1 1 1 2 5-axle + 1 1 1 1 1 1 2 MOVEMENT TOTALS CARS 183 181 0 0 335 25 0 0 0 6 1 1 2-axle 24 13 0 0 28 3 0 0 54 1		5-axle +		1									1	
2-axle 4 1 7 1 11 1 3-axle 1 1 1 1 1 1 1 4-axle 1 1 1 1 1 2 1 5-axle + 1 1 1 1 1 1 2 5-axle + 1 1 1 1 1 1 2 MOVEMENT TOTALS CARS 183 181 0 0 335 25 0 0 0 54 1 1 2-axle 24 13 0 0 28 3 0 0 0 54 1 1 0 3-axle 2 0 0 0 4 0 0 0 0 1 2 0 4-axle 1 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 6 1 0 0 0	8:45	CARS	23	24			46	2				124	14	11
3-axle 1 1 1 1 2 4-axle 1 1 1 1 2 4-axle 1 1 1 1 2 5-axle + 1 1 1 1 2 MOVEMENT TOTALS CARS 183 181 0 0 335 25 0 0 0 885 203 11 2-axle 24 13 0 0 28 3 0 0 0 54 1 2 3-axle 2 0 0 0 4 0 0 0 6 1 0 4-axle 1 0 0 0 0 0 0 0 0 0 0 0 1 2 0 4-axle 1 0		2-axle	4	1			7					11		1
4-axle <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>														
5-axle + 6 6 6 6 6 6 0 5-axle + 181 0 0 335 25 0 0 885 203 12 2-axle 24 13 0 0 28 3 0 0 54 1 2 3-axle 2 0 0 4 0 0 0 6 1 0 4-axle 1 0 0 0 0 0 1 2 0 5-axle + 1 1 0 0 0 0 0 0 9 6 0			I									ł		
MOVEMENT TOTALS CARS 183 181 0 0 335 25 0 0 0 885 203 11 2-axle 24 13 0 0 28 3 0 0 0 54 1 2 3-axle 2 0 0 0 4 0 0 0 6 1 0 4-axle 1 0 0 0 0 0 0 1 2 0 5-axle + 1 1 0 0 0 0 0 9 6 0		4-axle										<u> </u>	2	
CARS 183 181 0 0 335 25 0 0 0 885 203 12 2-axle 24 13 0 0 28 3 0 0 0 54 1 1 3-axle 2 0 0 4 0 0 0 6 1 0 4-axle 1 0 0 0 0 0 0 1 2 0 5-axle + 1 1 0 0 0 0 0 0 9 6 0		5-axle +										6		
2-axle 24 13 0 0 28 3 0 0 0 54 1 2 3-axle 2 0 0 4 0 0 0 6 1 0 4-axle 1 0 0 1 0 0 0 0 1 2 0 5-axle + 1 1 0 0 0 0 0 0 9 6 0														
3-axle 2 0 0 4 0 0 0 6 1 0 4-axle 1 0 0 1 0 0 0 0 0 1 2 0 5-axle + 1 1 0 0 0 0 0 0 9 6 0														125 2
5-axle + 1 1 0 0 0 0 0 0 9 6 0		3-axle	2	0	0	0	4	0	0	0	0	6	1	0
														0
														127

CONTROL: Signalized

JOINT KOL. SIGNA	109	106	0	0	192	14	0	0	0	516	134	60	I
		0.867			0.920			0.000			0.892		l

ocatio			& Kearny Ave		City:		Diego	Date:	12/2/08			Tuesday	
	LANES:	1.5 NL	0.5 NT	0 NR	0 SL	1.5 ST	0.5 SR	0 EL	0 ET	0 ER	1.3 WL	0.3 WT	0.3 WR
				INK	JL			LL	E1	LK			
6:00	CARS	44	39			49	13				109	29	27
	2-axle	3	3			2					1		
	3-axle	1									4		
	4-axle												1
	5-axle +												
6:15	CARS	48	65			64	2				112	14	35
	2-axle	6	5			2					2		1
		1											
	3-axle	1											
	4-axle												
	5-axle +												
16:30	CARS	34	53			52	5				110	14	26
	2-axle					4					5		
	3-axle										<u> </u>		
	4-axle					1							
	5-axle +	1											
16:45	CARS	52	58			59	3				88	8	24
	2-axle	1	1			3					1	1	21
		1	1									1	
	3-axle					1					ł – – –		
	4-axle												
	5-axle +												-
17:00	CARS	42	78			63	5				94	17	27
	2-axle	4	2			1					3		
	3-axle												
	4-axle												
	5-axle +												
17:15		50	63			56	4				61	14	17
		1	05			1	-				2	14	17
	2-axle	1				1					2		
	3-axle												
	4-axle												
	5-axle +												
17:30	CARS	32	57			61	1				110	21	25
	2-axle										2		
	3-axle										1		
	4-axle												
	5-axle +												
17.45		26	72			70	F				102	14	າເ
17:45	CARS	26	73			72	5				103	14	25
	2-axle										<u> </u>		
	3-axle												
	4-axle												
	5-axle +												
,	CARC	000	107	^	^		VEMENT TO		^	_	707	404	
	CARS 2-axle	328 15	486 11	0	0	476 13	38 0	0	0	0	787 16	131 1	206 1
	3-axle	2	0	0	0	1	0	0	0	0	5	0	0

					IVIU	VEIVIEINTITU	TALS					
CARS	328	486	0	0	476	38	0	0	0	787	131	206
2-axle	15	11	0	0	13	0	0	0	0	16	1	1
3-axle	2	0	0	0	1	0	0	0	0	5	0	0
4-axle	0	0	0	0	1	0	0	0	0	0	0	1
5-axle +	1	0	0	0	0	0	0	0	0	0	0	0
TOTALS	346	497	0	0	491	38	0	0	0	808	132	208
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR

PM Peak Hr Begii 1615 PM

CONTROL: Signa	lized											
	189	262	0	0	250	15	0	0	0	415	54	113
		0.895		I	0.960		I	0.000		1	0.887	

National Data & Surveying Services

N-S STREET:	Cesar (Chavez F	kwy-SR	-75 On-	DATE:	06/05/2	2008		LOC	ATION:	City of S	San Die	go
E-W STREET:	Logan	Ave			DAY:	THURS	DAY		PRO	JECT#	08-41	48-013	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	V	VESTBOU	ND	
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:45 AM	3 5 2 2 5 2 2 4	22 23 35 27 38 40 39 36	28 28 44 42 34 25 30 48	17 13 17 28 15 10 12 19	115 118 123 148 117 140 119 96	20 11 14 14 16 17 24 19	15 23 19 17 10 8 17 7	19 17 19 31 31 28 31 25	11 23 16 17 17 19 8 18	4 1 3 6 1 4 1 1	6 4 7 4 5 3 6 4	7 6 10 8 7 9 6 7	267 272 309 344 296 305 295 284
TOTAL VOLUMES =	NL 25	NT 260	NR 279	SL 131	ST 976	SR 135	EL 116	ET 201	ER 129	WL 21	WT 39	WR 60	TOTAL 2372
AM Pe	eak Hr Be	egins at:	730	AM									
PEAK Volumes =	11	140	145	70	528	61	54	109	69	14	19	34	1254
PEAK HR. FACTOR:		0.914			0.867			0.892			0.838		0.911
CONTROL:	Signali	zed											

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	Cesar	Chavez F	Pkwy-SR	75 On∙	DATE:	06/05/	2008		LOC	ATION:	City of	San Die	go
E-W STREET:	Logan	Ave			DAY:	THURS	DAY		PRO	JECT#	08-41	148-013	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOL	JND	W	/ESTBOl	JND	
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 5:15 PM 5:30 PM 5:15 PM 6:00 PM 6:15 PM 6:30 PM	2 3 0 4 0 5 3 3 3	61 62 69 80 56 47 37	72 69 109 89 102 88 77 76	27 30 33 24 25 30 26 35	106 94 100 94 71 68 81 82	8 7 11 13 2 0 1 0	23 30 22 22 18 31 24 21	41 57 56 51 47 38 45 51	10 13 11 10 6 8 10 10	3 2 3 1 1 2 3 0	5 5 3 3 2 4	9 9 7 3 4 7 8 5	367 381 420 383 359 336 327 324
TOTAL VOLUMES =	NL 20	NT 474	NR 682	SL 230	ST 696	SR 42	EL 191	ET 386	ER 78	WL 15	WT 31	WR 52	TOTAL 2897
PM Pe	eak Hr Be	egins at:	400	PM									
PEAK Volumes =	9	254	339	114	394	39	97	205	44	9	19	28	1551
PEAK HR. FACTOR:		0.880			0.950			205 0.865			0.824		0.923
CONTROL:	Sianali	zed											

Signalized CONTROL:

National Data & Surveying Services

N-S STREET:	Cesar	Chavez P	kwy-SR	-75 On-	DATE:	06/05/2	2008		LOC	ATION:	City of	San Die	go
E-W STREET:	Logan	Ave			DAY:	THURS	DAY		PRO	JECT#	08-41	148-013	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	EASTBOU	ND	W	/ESTBOL	JND	
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM			15 26 23 26 15 18 18 33	1 5 10 9 3 1 5 1					0 1 2 2 3 1 1	1 0 0 1 1 0			17 32 33 37 20 23 25 35
TOTAL VOLUMES =	NL O	NT O	NR 174	SL 35	ST 0	SR 0	EL O	ET O	ER 10	WL 3	WT 0	WR 0	TOTAL 222
AM Pe	eak Hr B	egins at:	715	AM									
PEAK Volumes =	0	0	90	27	0	0	0	0	5	0	0	0	122
PEAK HR. FACTOR:		0.865			0.675			0.625			0.000		122 0.824
CONTROL:	Signali	zed											

Signalized CONTROL:

National Data & Surveying Services

N-S STREET:	Cesar (Chavez F	Pkwy-SR	-75 On	DATE:	06/05/2	2008		LOC	ATION:	City of	San Die	go
E-W STREET:	Logan	Ave			DAY:	THURS	DAY		PRO.	JECT#	08-41	48-013	
	NC	ORTHBO		SC	OUTHBO		F	ASTBOU	ND		/ESTBOL	IND	
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:15 PM 6:30 PM			44 37 39 51 46 63 43 36	3 7 6 3 6 3 4 6					2 9 4 6 4 5 5				49 53 49 60 56 70 52 47
TOTAL VOLUMES =	NL O	NT O	NR 359	SL 38	ST 0	SR 0	EL O	ET O	ER 39	WL O	WT O	WR 0	TOTAL 436
PM Pe	eak Hr Be	egins at:											
PEAK Volumes =	0	0	203	16	0	0	0	0	19	0	0	0	238
PEAK HR. FACTOR:		0.806			0.667			0.792			0.000		0.850
CONTROL:	Signaliz	zed											

atio			& National A		City:		Diego	Date:	12/2/08	-		Tuesday	_
	LANES:	1 NL	2 NT	0 NR	1 SL	1.5 ST	0.5 SR	1 EL	1 ET	0 ER	1 WL	1 WT	0 WF
00	CARS	2	58	0	5	68	10	3	1	5	10	11	12
	2-axle	1	1	1		1		1		1		1	1
	3-axle												
	4-axle					1		1					
			1										
	5-axle +		1			1		1					
:15	CARS	4	49	2	5	82	5	13	8	3	16	9	17
	2-axle							1			1	1	
	3-axle												
	4-axle		[
	5-axle +				1					1			
:30	CARS	4	72	0	5	85	11	11	1	3	18	9	4
	2-axle		1			1	3				1	1	
	3-axle					1							
						1							
	4-axle												
	5-axle +							1					
7:45	CARS	8	42	3	11	103	15	10	5	3	29	10	3
	2-axle		4	1		1		4	1			1	1
			4						1			1	
	3-axle					2		1					
	4-axle							1					
	5-axle +				1				1				
3:00	CARS	5	45	1	13	98	28	3	3	5	21	9	6
									-				
	2-axle		5	2	1	5	1	1				1	1
	3-axle					3				1			
	4-axle												
	5-axle +		1								1		
).1E	CARS	4	39	3	12	109	25	7	4	4	20	13	10
		4		3	12					4	20		
	2-axle		1			1	1	2	1			1	1
	3-axle					2							
	4-axle		1			1							
	5-axle +					1							
		0	50	2	7		15	2	0	1	01	15	10
3:30	CARS	0	58	2	7	88	15	3	8	1	21	15	10
	2-axle	1	3			5	1	3	1			1	
	3-axle		2			1							
	4-axle												
	5-axle +		1										1
		-		-				-		-	_		
8:45	CARS	2	56	0	11	101	26	9	11	2	5	11	12
	2-axle	1	6	2		6	4	1	1			2	
	3-axle		3			2							
	4-axle												
			1		1	F		1			1		
	5-axle +		1			5	1				1		
I	CARS	20	410	11	40		VEMENT TO		41	24	140	07	
	CARS 2-axle	29 3	419 21	11 6	69 1	734 20	135 10	59 13	41 4	26 1	140 2	87 9	74 4
	3-axle	0	5	0	0	11	0	1	0	1	0	0	0
	4-axle 5-axle +	0	1	0	0	2 7	0	2	0	0	0	0	0
	TOTALS	32	449	17	72	774	145	77	46	29	144	96	79

PM Peak Hr Begii 800 AM

CONTROL: Signa	lized												
Ŭ	13	221	10	44	428	101	29	29	13	69	53	41	
		0.871			0.924			0.740			0.849		l

							<i>de Count</i> 08-4335-004						
Locatio	n: Cesar Ch	avez Pkwy	& National A	ve	City:		Diego	Date:	12/2/08		Day	Tuesday	
	LANES:	1 NL	2 NT	0 NR	1 SL	1.5 ST	0.5 SR	1 EL	1 ET	0 ER	1 WL	1 WT	0 WR
						1				1			
	CARS	6	101	8	40	84	7	10	26	11	8	13	13
	2-axle		1			1	1	1	1				
	3-axle		1			1	1						
	4-axle												
	5-axle +												
16:15	CARS	3	116	8	18	85	18	11	19	8	3	12	11
	2-axle	1	5				1				1		
	3-axle		2										
	4-axle												
	5-axle +												
4 . 00			110		14	00	17	10	10	10	-	10	10
16:30		4	119	8	14	89	17	10	12	10	5	19	13
	2-axle		1			1	1	1	2				
	3-axle		1										
	4-axle						1						
	5-axle +		1										
16:45	CARS	4	142	7	20	92	21	22	22	6	5	11	15
	2-axle		1			1	1	2	1		1	1	
	3-axle												
	4-axle												
	5-axle +												
17.00	CARS	4	121	7	21	82	12	26	22	11	7	5	7
		7		, '	21	2			22		, í	5	1
	2-axle		1			2	1	1					
	3-axle												
	4-axle												
	5-axle +												
17:15	CARS	1	125	8	29	75	14	16	7	12	2	12	17
	2-axle		1	1			1		1				
	3-axle		1										
	4-axle												
	5-axle +												
17:30	CARS	2	124	2	17	53	11	24	25	10	12	9	35
	2-axle					1		1	1		1		
	3-axle					1				2		1	
								1		2			
	4-axle												
	5-axle +		1										
17:45	CARS	1	124	4	24	62	6	15	8	7	12	15	44
	2-axle		-										
	3-axle		<u> </u>										
	4-axle												
	5-axle +		1										
							OVEMENT TO						
	CARS 2-axle	25 1	972 10	52 1	183 0	622 6	106 6	134 6	141 6	75 0	54 3	96 1	155 0
	2 axlo	0	5	0	0	2	1	0	0	2	0	1	0

					IVIC	VENIENTIO	TALS					
CARS	25	972	52	183	622	106	134	141	75	54	96	155
2-axle	1	10	1	0	6	6	6	6	0	3	1	0
3-axle	0	5	0	0	2	1	0	0	2	0	1	0
4-axle	0	0	0	0	0	1	0	0	0	0	0	0
5-axle +	0	3	0	0	0	0	0	0	0	0	0	0
TOTALS	26	990	53	183	630	114	140	147	77	57	98	155
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR

PM Peak Hr Begii 1645 PM

CONTROL: Signa	lized												
-	18	517	31	92	354	69	92	83	41	28	56	74	
		0.898			0.954			0.841			0.885		

ocatio	n: Cesar Cha	avez Pkwv	& Newton Av	re	City:	Project # 0 San I	Diego	Date:	12/2/08		Dav:	Tuesday	
Jourio	LANES:	0	2	0	1	1	0	1	1	0	0	2	0
	[NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
:00	CARS	2	46	2	2	87	3	8	2	0	1	3	6
	2-axle		5			3	1						
	3-axle												
	4-axle					1							
	5-axle +	1	1						1	1			
-15	CARS	1	51	1	6	90	6	3	2	2	0	2	7
.15		1	2		0		0	5	2	2	0	2	1
	2-axle	1				2							
	3-axle		1										
	4-axle												
	5-axle +					1	1						
7:30	CARS	3	54	5	4	86	12	7	5	2	1	4	10
	2-axle		1			1							
	3-axle					1	1						
	4-axle		1										
	5-axle +												
7:45	CARS	3	38	4	4	112	8	10	5	3	1	6	8
	2-axle	2	4			2	1		1		2		
	3-axle					1							
						'							
	4-axle												
	5-axle +			_						_			
3:00	CARS	1	40	2	6	107	16	2	6	2	0	3	8
	2-axle		7		2	3				1			
	3-axle					5						1	
	4-axle												
	5-axle +												
B:15	CARS	1	38	0	6	87	23	7	2	3	3	4	4
	2-axle		1		1	1	1						
	3-axle					2							
	4-axle		1			1							
	5-axle +					1							
8·30	CARS	2	44	4	4	93	12	7	4	2	8	10	10
5.50		2	4	-				,	7	1	0	10	10
	2-axle					3	1						
	3-axle		4			1							
	4-axle												
	5-axle +		1			2							
8:45	CARS	1	54	3	6	89	12	9	4	0	6	13	5
	2-axle	1	6		1	4	1			5			
	3-axle		1			1							
	4-axle												
	5-axle +					4							
						MC	VEMENT TO	TALS					
	CARS 2-axle	14 4	365 30	21 0	38 4	751 19	92 5	53 0	30 1	14 7	20 2	45 0	58 1
	3-axle	0	6	0	0	11	1	0	0	0	0	1	0
	4-axle	0	2	0	0	2	0	0	0	0	0	0	0

PM Peak Hr Begii 800 AM

19

NL

-ax

TOTALS

0

21 NR

405 NT

CONTROL: Signalized														
Ū	6	201	9	26	404	66	25	16	14	17	31	27		
		0.818			0.892			0.764			0.670			

99 SR

53

EL

32

ΕT

22 ER 46 WT

59

WR

22 WL

791 *ST*

42

SL

						Project # 0							
.ocatio	n: Cesar Cha LANES:	avez Pkwy 0	& Newton Av	е 0	City: 1	San I 1	Diego 0	Date: 1	12/2/08 1	0	Day: 0	Tuesday 2	0
	LAINES:	NL	2 NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
6:00	CARS	2	107	2	13	69	8	12	4	4	1	1	3
	2-axle		1	1		1		1				1	1
	3-axle		1			1							
	4-axle												
	5-axle +												
6:15	CARS	0	84	5	11	71	5	15	13	2	1	0	5
	2-axle		5										
	3-axle		1										
	4-axle												
	5-axle +												
6:30	CARS	1	102	3	11	84	5	17	11	7	2	1	4
	2-axle		1			1							
	3-axle		1										
	4-axle												
	5-axle +		1										
6:45	CARS	3	134	3	18	90	7	14	8	6	1	2	7
	2-axle		1	-		2			1				
	3-axle					-							
	4-axle												
	5-axle +												
7:00	CARS	3	126	4	10	90	5	12	11	5	3	2	7
	2-axle												
	3-axle												
	4-axle												
	5-axle +												
7.15	CARS	0	118	6	10	71	4	8	10	4	2	1	7
7.15	2-axle	Ū	2	0	10	2		0	10	т	2		
	3-axle		2			2							
	4-axle												
	5-axle +												
7:30	CARS	0	112	2	15	55	10	9	14	3	3	0	13
7.50	2-axle	Ū	1	2	15	55	10	,	14	5	5	Ū	10
	3-axle					2							
	4-axle					2							
	5-axle +												
7.45	CARS	1	116	2	14	73	8	10	4	1	5	1	4
7.40	2-axle		2	2	14	13	0	10			J		4
	3-axle		2										
	4-axle												
	5-axle +		1										
	S UNIC T		1 '	1	1	MO	VEMENT TO	TALS	1			1]	
	CARS	10	899	27	102	603	52	97	75	32	18	8	50
	2-axle 3-axle	0	13 3	1	0	6	0	1	1	0	0	1	1

	MOVEMENT TOTALS													
CARS	10	899	27	102	603	52	97	75	32	18	8	50		
2-axle	0	13	1	0	6	0	1	1	0	0	1	1		
3-axle	0	3	0	0	3	0	0	0	0	0	0	0		
4-axle	0	0	0	0	0	0	0	0	0	0	0	0		
5-axle +	0	2	0	0	0	0	0	0	0	0	0	0		
TOTALS	10	917	28	102	612	52	98	76	32	18	9	51		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		

PM Peak Hr Begii 1630 PM

CONTROL: Signa	lized												
	7	486	16	49	340	21	51	41	22	8	6	25	1
		0.902			0.876			0.814		l	0.813		

National Data & Surveying Services

TMC Summary of Cesar Chavez Pkwy/Main St

SOUTHBOUND APPROACH LANES Cesar Chavez Pkwy Ν 0 1 1 TOTAL 116 630 51 269 PA 34 26 NOON 0 0 0 AM 361 25 82 Main St Main St J) WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON TOTAL AM PM AM NOON PM 109 1 53 45 0 60 105 0 56 0 2 1 77 43 34 47 22 0 0 69 0 7 25 0 18 43 8 1 0 1 455 19 ₽ 4 NOON 0 0 0 TURNING MOVEMENT COUNT 155 AΜ 4 Cesar Chavez Pkwy / Main St Cesar Chavez Pkwy (Intersection Name) TOTAL 610 7 23 0 1 1 Thursday 6/5/08 Date Day NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	730 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

Project #: 08-4148-016

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	Cesar (Chavez P	kwy	DATE: 06/05/2008					LOCATION: City of San Diego				Jo
E-W STREET:	Main S	t			DAY:	THURS	DAY		PRO	JECT#	08-41	148-016	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	JND	
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 1	WR 0	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:45 AM	1 0 1 4 2 0 1 4	45 36 47 40 41 27 44 50	3 3 1 0 1 2 3 4	5 10 4 7 10 8 6	91 93 106 92 81 82 68 50	12 17 21 14 22 25 29 20	2 4 10 15 17 14 13 14	9 4 9 10 12 12 12 11	0 2 0 0 1 0 1	12 6 8 7 7 3 5 9	6 11 9 15 10 13 16 7	8 11 15 8 9 13 10 14	194 197 231 209 209 202 209 190
TOTAL VOLUMES =	NL 13	NT 330	NR 17	SL 54	ST 663	SR 160	EL 89	ET 79	ER 4	WL 57	WT 87	WR 88	TOTAL 1641
AM Pe	eak Hr Be	egins at:	730) AM									
Peak Volumes =	7	155	4	25	361	82	56	43	1	25	47	45	851 0.921
PEAK HR. FACTOR:		0.847			0.893			0.862			0.914		0.921
CONTROL	Signali	zed											

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	Cesar	Chavez P	łkwy	DATE: 06/05/2008					LOC	ATION:	City of	San Die	go
E-W STREET:	Main S	t			DAY:	THURS	DAY		PRO	JECT#	08-41	48-016	
	N	ORTHBO	UND	S	OUTHBO	UND	F	ASTBOU	IND	W	ESTBOL	JND	
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 1	WR 0	TOTAL
1:00 PM 1:15 PM 1:30 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:30 PM	2 1 0 1 0 1 0 0	101 124 127 103 100 105 108 103	5 6 4 1 4 2 4	6 8 6 5 6 3	63 71 62 73 58 61 73 67	5 11 12 6 8 4 9 9	12 15 12 14 7 9 10 14	10 7 9 8 9 6 3 14	2 3 1 1 0 0 1 1	5 3 7 3 4 1 3	7 6 4 5 7 1 5 6	9 14 22 15 20 8 8 8 6	227 269 266 239 218 209 226 230
TOTAL VOLUMES =	NL 5	NT 871	NR 30	SL 46	ST 528	SR 64	EL 93	ET 66	ER 9	WL 29	WT 41	WR 102	TOTAL 1884
PM Pe	eak Hr Be	egins at:	400	PM									
PEAK VOLUMES =	4	455	19	26	269	34	53	34	7	18	22	60	1001
PEAK HR. FACTOR:		0.912			0.914			0.940			0.758		0.930
CONTROL ·	Signali	zed											

CONTROL: Signalized

National Data & Surveying Services

TMC Summary of Cesar Chavez Pkwy/Harbor Dr



AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	430 PM

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	Cesar C	havez P	kwy		DATE:	06/04/2	2008		LOC	ATION:	City of	San Die	go
E-W STREET:	Harbor	Dr			DAY:	WEDNE	SDAY		PRO.	JECT#	08-41	148-017	
	NC	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	JND	
LANES:	NL 1	NT 0.5	NR 0.5	SL 0.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 1	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:45 AM	0 1 1 1 2 0 2 0 3 2 0	2 9 3 4 5 2 2 5 3 4 5	9 7 10 9 7 9 6 5 8 9 5	20 20 24 22 16 11 16 7 8 8 7	2 11 16 20 13 19 32 21 11 9 9 11	56 68 77 75 61 89 67 89 85 61 60 58	11 26 28 37 32 28 34 18 27 28 24 34	18 32 39 42 50 39 39 39 36 42 31 37	2 2 3 5 4 1 9 5 1 5 3 4	5 6 15 11 9 10 18 22 5 9 16 7	14 33 48 79 58 76 132 105 109 70 64 33	4 11 14 19 9 17 21 23 15 10 11 9	143 219 281 324 266 304 379 348 306 256 241 210
TOTAL VOLUMES =	NL 13	NT 46	NR 91	SL 175	ST 174	SR 846	EL 327	ET 444	ER 44	WL 133	WT 821	WR 163	TOTAL 3277
	eak Hr Be	gins at:	715	AIVI									
PEAK Volumes =	4	14	27	50	83	330	107	153	16	55	422	76	1337 0.882
PEAK HR. FACTOR:		0.804			0.919			0.841			0.808		0.882
CONTROL:	Signaliz	ed											

National Data & Surveying Services

N-S STREET:	Cesar (Chavez P	kwy	DATE: 06/04/2008 LC						LOCATION: City of San Diego				
E-W STREET:	Harbor	Dr	DAY: WEDNESDAY					PROJECT# 08-4148-07			48-017			
	NC	ORTHBO	JND	SOUTHBOUND			EASTBOUND			WESTBOUND				
LANES:	NL 1	NT 0.5	NR 0.5	SL 0.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 1	TOTAL	
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:15 PM	3 3 1 7 2 1 4 2 2 3 2 0	34 26 14 8 16 20 16 17 18 12 10 26	11 8 13 14 6 9 6 13 11 5 3 9	8 15 16 6 3 8 7 10 9 7 2 4	4 11 15 5 4 10 6 10 9 6	51 38 58 72 50 68 65 60 68 54 46 50	75 73 98 93 88 79 98 91 94 92 81 77	60 79 108 138 127 152 185 180 162 186 158 98	2 5 1 2 1 4 4 2 2 2 2	7 12 8 3 13 2 7 0 7 5 1 6	40 57 43 42 32 43 40 51 30 45 22 26	20 22 14 17 15 12 13 12 14 4 5 11	315 349 385 416 359 400 449 450 423 425 341 315	
TOTAL VOLUMES =	NL 30	NT 217	NR 108	SL 95	ST 96	SR 680	EL 1039	ET 1633	ER 28	WL 71	WT 471	WR 159	TOTAL 4627	
PM Peak Hr Begins at: 430 PM											•			
PEAK Volumes =	11	63	35	33	30	247	375	713	12	19	166	43	1747	
PEAK HR. FACTOR:	0.852			0.934				0.958			0.905		0.971	
CONTROL: Signalized														

atio	n: I-5 SB On		-		City:		Diego	Date:	12/2/08			Tuesday	
	LANES:	0 NL	1 NT	0 NR	0 SL	0 ST	0 SR	1 EL	1 ET	0 ER	1 WL		
					52	51	510						
:00	CARS	0	0	0				37	12	0	1	12	3
	2-axle								3			2	1
	3-axle								1			1	
	4-axle											1	6 11 16 2 11 1 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1
	5-axle +							1					
7:15	CARS	1	0	0				34	17	0	0	15	6
	2-axle								1			3	WR 3 1 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	3-axle												
	4-axle								1				
	5-axle +												
7:30	CARS	0	1	0				66	12	1	0	14	11
	2-axle							2	2			4	
									-				
	3-axle												
	4-axle												
	5-axle +							4					
7:45	CARS	2	0	0				46	8	0	0	8	16
	2-axle							3	2	1			2
	3-axle							1	2			1	
	4-axle							1				1	
	5-axle +							1					<u> </u>
2·00	CARS	0	0	1				54	14	0	0	7	11
		0	0							0	0		
	2-axle							2	5			3	1
	3-axle							1					
	4-axle								1				WT WR 12 3 2 1 1
	5-axle +								1				
3:15	CARS	0	2	0				30	14	0	0	9	6
	2-axle							3	1			2	WR 3 1 6 6 1 11 11 11 1 1 1 1 1 1 1 1
	3-axle							1				1	
	4-axle							1					
	5-axle +							1					
3:30	CARS	0	0	0				61	15	1	0	17	14
	2-axle							2	1			1	2
	3-axle												
	4-axle												
	5-axle +							1	2			<u> </u>	
8:45	CARS	0	0	0				54	17	0	0	9	16
	2-axle							5	3			1	
	3-axle							1					
							İ	<u> </u>				1	
	4-axle						1						
	5-axle +			l			1						
							OVEMENT TO						
	CARS 2-axle	3 0	3 0	1 0	0	0	0	382 17	109 18	2 1	1		
	3-axle	0	0	0	0	0	0	4	3	0	0	3	0
	4-axle	0	0	0	0	0	0	2	2	0	0		
	5-axle + TOTALS	0	0	0	0	0	0	8 413	3 135	0	0		
	-	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	

CONTROL: 1-Way Stop (NB)

JINTROL. I-Wa	y stop (IVB)												
	0	2	1	0	0	0	217	74	1	0	50	52	
		0.375			0.000			0.880			0.750		
NATIONAL DATA AND SURVEYING SERVICES Axle Count

							le Count						
location I	L-5 SB On	I-Ramp & L	oran Ave		City:	Project # 0	8-4335-002 Diego	Date:	12/2/08		Dav	Tuesday	
	ANES:	0	1	0	0	0	0	1	1	0	1	1	0
-		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
16:00 CA	ARS	0	0	0				145	45	0	0	10	28
2-a	axle							2	4			1	
3-8	axle							1					
	axle												
	axle +												
		2							50		-	45	
16:15 <u>CA</u>		2	0	0				166	58	0	0	15	11
2-8	axle								4			2	1
3-8	axle												
4-a	axle												
5-a	axle +												
16:30 CA	ARS	2	1	0				154	66	1	0	17	15
2-8	axle							3	4			2	
3-8	axle												
4-7	axle												
	axle +												
			1	-				100	0.4			20	14
16:45 CA		4	1	1				138	84	4	0	30	14
2-8	axle							1	4				
3-8	axle							2					
4-a	axle												
5-a	axle +												
17:00 CA	ARS	2	0	0				159	66	1	0	14	14
2-8	axle							3	4			1	
3-a	axle											2	2
4-a	axle												
	axle +												
17:15 CA		6	0	0				102	107	2	0	23	12
	axle	0	0	0				2	2	2	0	2	12
									2			2	
	axle							1					
	axle								1				
5-a	axle +												
17:30 CA	ARS	7	0	1				59	43	4	0	29	11
2-8	axle								5			1	
3-a	axle												
4-a	axle												
5-a	axle +							1					
17:45 CA	ARS	0	1	1				59	78	0	0	10	7
	axle	-						3	1			2	
								J				-	-
	axle												
	axle												
5-a	axle +												
CA	ARS	23	3	3	0	0 MC	VEMENT TO 0	TALS 982	547	12	0	148	112
	axle	0	0	0	0	0	0	14	28	0	0	140	1

CARS	23	3	3	0	0	0	982	547	12	0	148	112
2-axle	0	0	0	0	0	0	14	28	0	0	11	1
3-axle	0	0	0	0	0	0	4	0	0	0	2	2
4-axle	0	0	0	0	0	0	0	1	0	0	0	0
5-axle +	0	0	0	0	0	0	1	0	0	0	0	0
TOTALS	23	3	3	0	0	0	1001	576	12	0	161	115
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	W/T	WR
1 Peak Hr Begii	1630	PM										
NTROL: 1-Wa	y Stop (NB)		. 1						-			

UNTROL: I-Wa	y Stop (INB)												
	14	2	1	0	0	0	565	338	8	0	91	57	
		0.708			0.000			0.977			0.841		
		0.700			0.000			0.977			0.041		

NATIONAL DATA AND SURVEYING SERVICES Axle Count

atio	n: I-5 SB On LANES:	0	1	0	City: 0	0	0	1	1	0	1	1	0
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
00	CARS							32	15			11	5
								2	2			2	
	2-axle								2			2	
	3-axle							5					
	4-axle												
	5-axle +												L
15	CARS							40	22			12	9
	2-axle							2	3			4	1
	3-axle												
									_				
	4-axle								2				
	5-axle +												
30	CARS							48	20			10	17
	2-axle								1				
	3-axle												
	4-axle												
	5-axle +												
45	CARS							55	8			10	10
	2-axle							1	3			1	1
	3-axle												
	4-axle												
	5-axle +												
00	CARS							56	16			13	8
00													
	2-axle							2	2			2	1
	3-axle												
	4-axle												
	5-axle +								1				I
15	CARS							60	11			3	9
	2-axle							2	4			5	
	3-axle							2					
								2					
	4-axle								1				
	5-axle +			1					1				
30	CARS							60	27			10	14
	2-axle							2	1			2	2
	3-axle												
	4-axle											_	
	5-axle +												
45				1			1	50	10			10	
45	CARS							53	18			12	16
	2-axle							3				4	
	3-axle											1	
	4-axle					ļ							
	5-axle +												
						M	OVEMENT TO	TALS					
	CARS 2-axle	0	0	0	0	0	0	404	137	0	0	81	88 5
	3-axle	0	0	0	0	0	0	14 7	16 0	0	0	20 1	0
	4-axle 5-axle +	0	0	0	0	0	0	0	3	0	0	0	0
	TOTALS	0	0	0	0	0	0	425	157	0	0	102	93
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR

JNTROL: T-Wa	y Stop (NB)											
	0	0	0	0	0	0	240	81	0	0	52	50
		0.000			0.000			0.892			0.773	

NATIONAL DATA AND SURVEYING SERVICES

Locatio	n: I-5 SB O	n-Ramp & Li	ogan Ave		City:		8-4335-002 Diego	Date:	12/3/08		Day:	Wednesday	
	LANES:	0 NL	1 NT	0 NR	0 SL	0	0	1 EL	1 ET	0 ER	1 WL	1 WT	0 WR
			NI		SL	ST	SR						
6:00	CARS	2		0			1	107	45	1	0	11	15
	2-axle							3	3			1	
	3-axle							1					
	4-axle												
	5-axle +												
		0		0				00	20	0	0	10	9
	CARS	0		0				90	39	0	0	13	
	2-axle						-		3		1	2	1
	3-axle							1					
	4-axle												
	5-axle +												
16:30	CARS	0		0				104	65	0	0	13	12
	2-axle							1	3			1	
									5				
	3-axle												
	4-axle												
	5-axle +												
16:45	CARS	0		1				90	67	0	0	14	9
	2-axle							1	4			2	
	3-axle							1					
	4-axle												
	5-axle +												
17:00		0		0				118	53	0	0	18	18
17.00		0		0				110		0	0	10	10
	2-axle								_				
	3-axle							1	3			1	
	4-axle												
	5-axle +												
17:15	CARS	2		0				91	59	1	0	18	10
	2-axle							4					
	3-axle												
	4-axle												
	5-axle +												
								70			-	45	-
	CARS	2		0				79	46	0	2	15	7
	2-axle							1	2			1	1
	3-axle												
	4-axle							1					
	5-axle +												
17:45	CARS	0		0				90	22	0	1	9	8
	2-axle							1	3			1	
	3-axle							1					
	4-axle												
	5-axle +		1	1	1		L	I	1			1	
	CARS	6	0	1	0	0 MC	OVEMENT TO 0	TALS 769	396	2	3	111	88
	2-axle 3-axle	0	0	0	0	0	0	11 5	18 3	0	1 0	8 1	2 0
	3-axie 4-axle	0	0	0	0	0	0	5	0	0	0	0	0

4 0 120 WT 0 417 *ET* 0 5-axle 0 0 0 90 WR TOTALS 0 786 EL 0 0 SR 4 0 6 2 ER NL NT NR SL ST WL

PM Peak Hr Begii 1630 PM CONTROL: 1-Way Stop (NB)

UNTROL: I-Wa	y Stop (INB)												
	2	0	1	0	0	0	411	254	1	0	67	49	
		0.375			0.000			0.951			0.784		

N-S STREET:	Nation	al Ave.			DATE:	3/7/2	006		LOO	CATION	: City of	San Die	ego
E-W STREET:	SR-75	Off Ram	ıр		DAY:	TUES	DAY		PRO	DJECT#	06-4	071-001	
	N	ORTHBO	UND	Ş	OUTHBO	UND		EASTBOU	ND	,	WESTBO	UND	
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 0	ER 0	WL 1	WT 0	WR 1	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:15 AM 9:00 AM 9:15 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM		26 23 32 41 29 40 22 26	14		9 12 13 20 18 16 10 20					4 8 7 4 2 3 5 5		27 25 39 46 30 41 33 30	66 68 91 111 79 100 70 81
TOTAL VOLUMES = AM Peal	239	NT 239 nb d 510	NR 0 730	SL 0 sb a 118	ST 118 sb d 156	SR 0	EL 0 eb a	ET 0 eb d) 0	ER 0	WL 38 wb a 309	WT 0 nb d 0	WR 271	TOTAL 666
PEAK VOLUMES =					67	0	0	0	0	16	0	156	381
PEAK HR. FACTOR:		0.866			0.838			0.000			0.860		381 0.858
CONTROL:	1WaySt	op(WB)											

A.29

N-S STREET:	Nationa	l Ave.			DATE: 3	3/7/200	06		LOC	ATION:	City of S	an Dieg	jo
E-W STREET:	SR-75 0	Off Ramp			DAY: 1	ruesd.	AY		PRO.	JECT#	06-407	1-001	
	NO	RTHBOU	ND	50	UTHBOU	IND	E	ASTBOUN	ID	W	ESTBOU	ND	
	NO	INTIBOO	ne		0					- 12100			TOTAL
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 0	ER 0	WL 1	WT 0	WR 1	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM 3:45 PM													
4:00 PM		34			37					21		21	113
4:15 PM		31			39					15		26	111
4:30 PM		28			46					14		30	118
4:45 PM		39			31					20		42	132
5:00 PM		36			44					23		35	138 104
5:15 PM		29			28					16		31 23	91
5:30 PM		22			31					15 11		20	102
5:45 PM		35			36					11		20	102
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM									_				
TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL 125	WT	WR 228	TOTAL 909
VOLUMES =	0	254	0	0	292	0	0	0	0	135	0		505
	nb a	nb d		sb a	sb d			eb d		wb a			
		482		292	2 427		(0 0		363	0		
PM P	eak Hr Be	egins at:	415	5 PM				10					
PEAK				11-1-1			0.00		(5 min)	1	~	100	1 400 1
VOLUMES =	0	134	0	0	160	0	0	0	0	72	0	133	499
1999 - 1992 - 1992 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 -													1 1
PEAK HR.								0.000			0.827		0.904
FACTOR:	1	0.859		1	0.870		1	0.000		1	0.827		1 0.504 1
CONTROL:	1Ways	Stop(WB)	ı										

N-S STREET:	Natior	nal Ave.			DATE:	3/7/20	006		LOC	CATION	City of	San Die	ego
E-W STREET:	Evans	St.			DAY:	TUESI	DAY		PRC	DJECT#	06-40)71-002	
and the second second second	N	ORTHBO	UND	S	OUTHBO	UND	E	ASTBOU	IND	١	WESTBOL	JND	
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM	2 2 4 8 5 1 3 3	17 18 25 30 26 42 18 26	1 1 3 4 3 6 4 4 4	4 3 2 2 0 1 1	10 11 15 22 13 15 15 18	2 3 1 2 4 2 4 5	1 0 4 2 2 2 3 1	7 5 9 8 5 4 5 6	2 4 1 3 3 1 2	2 1 1 2 1 1 2	3 2 1 0 3 4 4 3	4 2 6 5 4 1 3 2	55 52 73 87 72 81 62 73
TOTAL VOLUMES =	NL 28	NT 202	NR 26	SL 16	ST 119	SR 23	EL 15	ET 49	ER 19	WL 11	WT 20	WR 27	TOTAL 555
AM Pea	nb a 256 k Hr Be	nb d 244 gins at:	730	sb a 158 AM	sb d 149		eba 83	eb d 91		wb a 58	nb d 71	11.	
PEAK VOLUMES =	18	123	16	7	65	9	10	26	10	5	8	16	313
PEAK HR. FACTOR:		0.801			0.779			0.821			0.806		313 0.899
CONTROL:	2WayS	top(NS)											

N-S STREET:	Nationa	l Ave.			DATE: 3	3/7/200)6		LOCA	ATION:	City of S	an Dieg	10
E-W STREET:	Evans S	št.			DAY: 1	ruesd/	AΥ		PRO:	JECT#	06-407	71-002	
	NC	RTHBOU	ND	SO	UTHBOU	IND	E	ASTBOUN	٧D	W	ESTBOU	ND	
		NT	ND	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	NL 1	NT 1	NR 0	1	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM 2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM									92				
3:15 PM													
3:30 PM													
3:45 PM					10		0	F	8	3	4	5	117
4:00 PM	2	31	4	3	49	3 2	0 1	5 4	6	4	2	4	107
4:15 PM	4	25	3	4	48 60	4	2	3	7	7	5	7	127
4:30 PM	1	22	2 4	3	48	2	1	1	4	6	1	11	112
4:45 PM	2 7	29 30	3	6	63	2	ō	ĩ	10	9	2	9	142
5:00 PM 5:15 PM	7	22	6	2	41	6	2	3	8	5	2	10	114
5:30 PM	6	17	4	3	43	4	1	4	7	6	4	6	105
5:45 PM	2	21	3	5	33	5	2	1	6	3	5	8	94
6:00 PM	-												
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL 918
VOLUMES =	31	197	29	33	385	28	9	22	56	43	25	60	910
				l .	ale d		I	oh d		l wha	nh d		
	nb a	nb d		sb a	SD 0		ep a	7 84		128	84		
014.0		266		446	484		0,	01		120			
PM P	eak Hr B	egins at:	430	PM									
PEAK				-			E 255	1220	2	1	10	27	1 405 L
VOLUMES =	17	103	15	18	212	14	5	8	29	21	10	3/	495
										1			495 0.871
PEAK HR.				1	0.050		1.00	0 000		1	0 975		0.871
FACTOR:	1	0.844		I .	0.859		l.	0.808		1	0.925		1 0.071 1
CONTROL:	2Ways	Stop(NS)											

N-S STREET:	Evans	St			DATE:	3/7/20	006		LOC	ATION:	City of	San Die	ego
E-W STREET:	Newto	on Ave			DAY:	TUESI	DAY		PRC	DJECT#	06-40	071-003	
- IV	N	ORTHBO	UND	S	OUTHBO	UND		EASTBOU	IND	1	WESTBOU	JND	
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM	2 2 3 2 3 2 2 3	7 5 9 5 2 3 4 5	2 0 1 3 1 1 2 0	1 3 0 0 0 1 0 1	2 2 1 4 2 1 4 3	3 1 5 6 2 1	2 2 1 5 4 2 1 4	1 5 11 8 7 7 7 7	4 4 2 4 4 0	1 0 3 0 2 0	7 4 3 9 5 7 2 9	1 1 3 0 2 2 1	33 29 35 48 31 36 32 34
TOTAL VOLUMES =	NL 19 nb a	NT 40 nb d	NR 10	SL 6 sb a	ST 19 sb d	SR 24	EL 21 eb a	ET 53 eb d	ER 21	WL 6 wb a	WT 46 nb d	WR 13	TOTAL 278
AM Pea	69		730	49			95			65			
PEAK VOLUMES =	10	19	6	1	8	17	12	33	9	3	24	8	150
PEAK HR. FACTOR:		0.673			0.722			0.964		•	0.583		150 0.781
CONTROL:	2-Way	Stop N/S	;										

N-S STREET:	Evans S	st			DATE: 3	3/7/200		LOCATION: City of San Diego					
E-W STREET:	Newton	Ave			DAY: 1	ruesd/	٩Y		PROJ	IECT#	06-40	71-003	
LINGINEEN		1.5.01.405C											
	NC	RTHBOU	ND	SO	UTHBOU	IND	E	ASTBOU	ND	W	ESTBOU	ND	
						7727275	-		50	140	MAT	WR	TOTAL
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	0	
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM			*	2									
3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:15 PM 6:30 PM	1 0 2 0 4 0 0 0	4 3 6 2 4 2 2 1	2 0 2 2 2 0 0 1	1 2 1 3 2 0 3 2	1 2 2 3 2 3 1	0 3 4 0 4 4 4 2	4 2 3 2 6 3 4 0	9 10 13 8 15 10 10 3	3 6 4 3 4 5 2	2 3 0 1 1 0 1 0	5 7 7 6 4 7 5	0 1 4 0 2 1 0 1	32 35 50 31 52 30 39 18
TOTAL VOLUMES =	NL 7	NT 24 nb d	NR 9	SL 14	ST 15	SR 21	EL 24	ET 78	ER 30	WL 8	WT 48	WR 9	TOTAL 287
PM P	nb a 40 eak Hr Be) 57		50	sb d 53		eb a 132	eb d 2 101		wb a 65	nb d 76		
PEAK VOLUMES =	6	15	6	8	8	11	13	46	16	5	27	7	168 0.808
PEAK HR. FACTOR:		0.675			0.750			0.781			0.886		0.808
CONTROL:	2-Way	Stop N/S	S										

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NATIONAL DATA AND SURVEYING SERVICES Axle Count

auor	: Evans Sta LANES:	0	0	0	City: 0	3an 1	Diego 0	Date: 0	12/3/08 1	0	0	: Wednesday 1	0
	Ernves.	NL	NT	NR	SL	ST	SR	EL	ET	ER	ŴL	ŴT	WR
00	CARS				0		2	0	14			13	1
ſ	2-axle						_		1			1	
	3-axle								2			2	
	4-axle												
	5-axle +												
15	CARS				1		1	0	9			20	1
	2-axle						1		1			2	
	3-axle												
	4-axle												
	5-axle +								1				
	CARS				2		2	1	11			22	1
					2		2						1
	2-axle					ł – –			1			2	
	3-axle												
	4-axle											-	
	5-axle +								2			1	
45	CARS				1		4	1	9			23	1
	2-axle								3			1	
	3-axle								1				
	4-axle												
	5-axle +											2	
					_		_						
	CARS				1		3	2	12			27	1
	2-axle					-			2			1	
	3-axle											1	
	4-axle												
	5-axle +												
:15	CARS				1		5	1	13			30	3
	2-axle								1			2	
Ī	3-axle												
ſ	4-axle												
	5-axle +												
30	CARS			}	1	<u> </u>	2	4	7			25	0
	2-axle								2			3	
	3-axle							1	1				
	4-axle												
	5-axle +												
45	CARS				0		5	4	20			18	0
ľ	2-axle								1			4	
	3-axle			İ		İ							
	4-axle												
l	5-axle +						I		1			1	
r	CARS	0	0	0	7	0 M	OVEMENT TO 24	TALS 13	95	0	0	178	8
ĺ	2-axle	0	0	0	0	0	1	0	12	0	0	16	0
	3-axle 4-axle	0	0	0	0	0	0	1 0	4 0	0	0	3 0	0
ľ	5-axle +	0	0	0	0	0	0	0	4	0	0	4	0
	TOTALS	0	0	0	7	0	25	14	115	0	0	201	8

 NTROL: 1-Way Stop (SB)
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NATIONAL DATA AND SURVEYING SERVICES Axle Count

cation: Evans LANES		0	0	City:		Diego	Date: 0	12/3/08 1	0	Day: 0	Wednesday 1	0
LANES	: 0 NL	0 NT	0 NR	0 SL	1 ST	0 SR	EL	ET	ER	WL	WT	WR
00 CARS				0		4	1	17			14	5
												J
2-axle								2			2	
3-axle												
4-axle	_											
5-axle +								1				
:15 CARS				1		1	0	18			22	0
2-axle								3			1	
3-axle												
4-axle								<u> </u>				
5-axle +	_											
:30 CARS				2		3	2	15			16	0
2-axle				1				1			1	
3-axle												
4-axle												
5-axle +									1			
:45 CARS	-			3		3	1	18			15	2
2-axle								1			1	
3-axle												
4-axle												
5-axle +											1	
								40				
:00 CARS				0		1	1	19			17	1
2-axle								2	1			
3-axle												
4-axle												
5-axle +												
:15 CARS				1		1	1	21			5	1
				1			1					1
2-axle								2			1	
3-axle								1	1			
4-axle												
5-axle +												
:30 CARS				0		0	2	17			12	0
2-axle								3			2	
3-axle												
4-axle												
5-axle +												
:45 CARS				1		3	4	12			12	2
2-axle								2				
3-axle												
	1	1	ł		1	t			ł			
4-axle	1	1			1	1						
5-axle +		1		I	<u> </u>		I					
CARS	0	0	0	8	0 MC	OVEMENT TO 16	TALS 12	137	0	0	113	11
2-axle	0	0	0	1	0	0	0	16	0	0	8	0
3-axle 4-axle	0	0	0	0	0	0	0	0	0	0	0	0
5-axle +		0	0	0	0	0	0	1	0	0	1	0

PM Peak Hr Begii 1600 PM

CONTROL: 1-Wa	y Stop (SB)												
	0	0	0	7	0	11	4	76	0	0	73	7	1
	l	0.000			0.750			0.952		I	0.870		I

N-S STREET:	Logar	n St			DATE:	3/15/2	2006		LOCATION: City of San Diego				ego
E-W STREET:	Samp	son St			DAY:	WEDN	IESDAY		PRC	DJECT#	06-407	'1-005B	I
	N	IORTHBO	UND	S	OUTHBO	UND		EASTBOU	ND	1	WESTBOL	IND	
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:15 AM 10:15 AM 10:30 AM 10:45 AM 11:5 AM	0 1 2 4 5 4 3 5	8 9 11 15 16 18 14 14	5 4 6 10 12 15 12 11	12 11 16 22 24 26 19 21	22 24 20 27 31 35 29 30	2 0 5 5 8 7 8	11 13 10 15 14 18 14 16	21 16 24 31 30 28 25 29	0 0 3 4 6 10 8 9	4 4 7 10 15 14 15 18	8 10 12 15 20 21 19 22	0 2 1 2 4 3 4 3	93 94 115 160 182 200 169 186
TOTAL VOLUMES =		NT 105 nb d	NR 75	SL 151 sb a				ET 204 eb d	ER 40	WL 87 wb a		WR 19	TOTAL 1199
AM Pea		4 235 egins at:	800	407 AM	345		355	5 430		233	8 189		
Peak Volumes =	17	62	50	90	125	28	62	112	33	62	82	14	737
PEAK HR. FACTOR:		0.872			0.880			0.924			0.919		737 0.921
CONTROL:	4-Way	Stop											

1.

R-3c1

N-S STREET:	Logan S	St			DATE: 3	/15/20	006			ATION:			JO
E-W STREET:	Sampso	on St			DAY: V	VEDNE	SDAY	65	PRO	JECT#	06-4071	L-005B	
				601			EA	STBOUM		W	ESTBOU	ND	
	NC	RTHBOU	IND	SO	UTHBOU	ND	EA	SIBUUI	ND.	44	LUTDOO		
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM													
2:00 PM 2:15 PM 2:30 PM													
2:45 PM 3:00 PM 3:15 PM 3:30 PM													
3:45 PM	-	12	0	10	28	6	15	30	1	9	16	0	146
4:00 PM	2	12 10	8 9	19 18	35	3	6	29	0	9	17	3	142
4:15 PM	3	13	11	20	32	6	17	33	2	13	20	4	174
4:30 PM 4:45 PM	5	15	15	26	31	8	15	30	1	15	22	3	187
5:00 PM	8	19	15	27	38	10	19	36	4	19	26	4	225
5:15 PM	7	22	14	24	35	11	18	37	4	17	28	2	219
5:30 PM	9	18	12	26	31	8	15	32	3	14	22	3	193
5:45 PM	5	16	13	24	31	7	11	29	7	16	24	4	187
6:00 PM		10		1000									
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	42	126	97	184	261	59	116	256	22	112	175	23	1473
								oh d		l wba	nh d		1 1
		nb d			sb d 395		eD a 304	537		310			
		5 265		504	292		754	557		010			
PM P	eak Hr B	egins at:	500	PM									
PEAK VOLUMES =	29	75	54	101	135	36	63	134	18	66	100	13	824
PEAK HR. FACTOR:		0.919			0.907			0.911			0.913		0.916
CONTROL:	4-Way	/ Stop											

p.40

4

National Data & Surveying Services

TMC Summary of Sampson St/National Ave



AM PEAK HOUR	800 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	Samps	Sampson St DATE: 06/05/2008							LOCATION: City of San Diego				
E-W STREET:	Nationa	al Ave			DAY:	THURS	DAY		PRO	JECT#	08-41	48-024	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	IND	
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR <mark>0</mark>	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:45 AM	1 2 3 0 0 1 3 3	9 9 12 10 9 11 11	3 4 4 5 1 5 5	4 2 4 3 7 1 5 6	9 7 15 11 6 7 14 9	5 5 7 7 6 6 6	3 3 6 3 4 2 4	6 7 5 10 9 13 18	2 3 3 5 3 1 3	10 7 9 11 12 9 15 12	15 7 16 32 16 29 24 25	1 2 4 9 7 6 5 6	68 58 81 103 88 85 104 108
TOTAL VOLUMES =	NL 13	NT 80	NR 31	SL 32	ST 78	SR 47	EL 27	ET 75	ER 23	WL 85	WT 164	WR 40	TOTAL 695
AM Pe	eak Hr Be	egins at:	800	AM									
PEAK VOLUMES =	7	41	16	19	36	25	13	50	12	48	94	24	385
PEAK HR. FACTOR:		0.842			0.800			0.750			0.943		0.891
CONTROL	Signali	zed											

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	Samps	on St			DATE:	06/05/2	2008 LOCATION: City of San Diego						
E-W STREET:	Nation	al Ave			DAY:	THURS	DAY		PRO	JECT#	08-41	48-024	
	N	ORTHBO	UND	SC	OUTHBO	UND	[ASTBOU	IND	V	VESTBOL	JND	
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL <mark>0</mark>	ET 1	ER 0	WL 0	WT 1	WR <mark>0</mark>	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:15 PM	3 5 4 1 3 4 4 2	19 21 17 20 17 13 13 10	7 7 10 6 11 6 11 5	9 7 10 10 10 11 8 5	9 8 9 7 6 10 6 6	4 4 5 3 7 2 4	7 8 5 3 4 4 2	24 29 30 28 17 21 18 15	5 4 1 2 5 1 1 2	6 4 5 3 5 4	13 19 20 18 13 18 17 18	5 12 5 6 7 3 6 4	111 128 122 113 98 101 95 77
TOTAL VOLUMES =	NL 26	NT 130	NR 63	SL 70	ST 61	SR 34	EL 38	ET 182	ER 21	WL 36	WT 136	WR 48	TOTAL 845
PM Pe	eak Hr Be	egins at:	400	0 PM									
PEAK VOLUMES =	13	77	30	36	33	18	25	111	12	21	70	28	474
PEAK HR. FACTOR:		0.909			0.906			0.902			0.850		0.926
CONTROL:	Signali	zed											

CONTROL: Signalized

National Data & Surveying Services

TMC Summary of Sampson St/Newton Ave



AM PEAK HOUR	800 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

N-S STREET:	Samps	Sampson St DATE: 06/05/20							LOCATION: City of San Diego					
E-W STREET:	Newto	n Ave			DAY:	THURS	DAY		PRO	JECT#	08-41	148-025		
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	IND	W	/ESTBOL	JND		
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:45 AM	0 0 4 2 0 2 0	3 5 11 5 9 4 10 12	0 2 2 0 2 1 2	1 1 0 0 1 2	14 10 20 17 19 14 16 17	0 3 7 5 5 3 10 4	4 2 5 3 1 3 5 6	2 4 3 6 4 6 3 7	3 0 3 1 3 2 5 0	0 2 0 3 0 1 1 0	3 4 2 5 3 2 3 9	0 3 1 3 2 1 4 1	30 36 55 52 50 38 61 60	
TOTAL VOLUMES =	NL 8	NT 59	NR 11	SL 6	ST 127	SR 37	EL 29	ET 35	ER 17	WL 7	WT 31	WR 15	TOTAL 382	
AM Pe	Peak Hr Begins at: 800 AM													
PEAK VOLUMES =	4	35	7	3	66	22	15	20	10	2	17	8	209	
PEAK HR. FACTOR:		0.821			0.843			0.865			0.675		209 0.857	
CONTROL	4-Way	Stop Sig	In											

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

N-S STREET:	Samps	on St			DATE:	06/05/2	LOCATION: City of San Diego						
E-W STREET:	Newto	n Ave			DAY:	THURS	DAY		PRO	JECT#	08-41	48-025	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	JND	
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:45 PM	3 0 1 2 1 3 1 0	17 16 18 12 13 15 11 8	0 0 2 1 2 3 0 2	1 1 2 1 0 2 2	14 8 9 11 10 11 6 4	2 2 5 6 3 7 4	3 7 6 4 1 7 4	9 5 6 5 10 3 7 2	1 2 3 6 1 1 2 0	0 0 0 0 1 0 0 0	5 3 5 3 5 1 3 2	2 1 1 2 1 2 0	57 45 59 55 51 43 48 28
TOTAL VOLUMES =	NL 11	NT 110	NR 10	SL 9	ST 73	SR 32	EL 39	ET 47	ER 16	WL 1	WT 27	WR 11	TOTAL 386
PM Pe	eak Hr Be	egins at:	400	0 PM									
PEAK VOLUMES =	6	63	3	5	42	15	23	25	12	0	16	6	216
PEAK HR. FACTOR:		0.857			0.861			0.882			0.786		216 0.915
CONTROL:	4-Wav	Stop Sig	n										

CONTROL: 4-Way Stop Sign

NDS

National Data & Surveying Services

TMC Summary of Sampson St/Main St

SOUTHBOUND APPROACH LANES Ν 0 1 0 Sampson St TOTAL 25 86 18 Μ 10 27 ω NOON 0 0 0 AM 15 10 59 Main St Main St [L WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON TOTAL AM PM AM NOON PM 16 0 18 5 13 0 8 24 0 0 1 115 115 159 1 82 44 33 0 0 0 8 53 0 27 80 0 20 12 0 46 49 ₽ ഹ NOON 0 0 0 TURNING MOVEMENT COUNT 14 31 35 AΜ Sampson St / Main St (Intersection Name) Sampson St TOTAL 19 77 84 0 1 0 <mark>Tuesday</mark> Day 6/10/08 Date NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

Project #: 08-4148-026

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

N-S STREET:	Sampso	on St			DATE:	06/10/2	LOCATION: City of San Diego					до	
E-W STREET:	Main St	t			DAY:	TUESD	AY		PRO	JECT#	08-41	148-026	
	NC	ORTHBO	UND	S	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	JND	
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:00 AM 9:15 AM 9:00 AM 9:15 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM	1 6 0 4 4 4 2 4	3 5 6 9 11 9 8 4	5 8 5 12 10 14 4 10	2 2 3 2 2 0 3	13 15 12 15 17 12 18 11	0 1 6 3 5 2 6 1	2 2 0 1 2 4 5	4 7 9 10 7 9 15	2 4 2 3 3 0 0 4	16 10 20 11 12 9 10 10	14 28 32 27 16 27 15	2 0 6 4 6 2 2 1	64 88 97 105 108 79 90 83
TOTAL VOLUMES =	NL 25	NT 55	NR 68	SL 17	ST 113	SR 24	EL 18	ET 68	ER 18	WL 98	WT 187	WR 23	TOTAL 714
AM Pe	eak Hr Be	egins at:	715	AM									
PEAK Volumes =	14	31	35	10	59	15	5	33	12	53	115	16	398
PEAK HR. FACTOR:		0.800			0.875			0.893			0.852		0.921
CONTROL:	4-Way	Stop Sig	n										

National Data & Surveying Services

N-S STREET:	Samps	on St			DATE:	06/10/	0/2008 LOCATION: City of San Diego						go
E-W STREET:	Main S	t			DAY:	TUESD	AY PROJEC			JECT#	08-41	148-026	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	JND	
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL <mark>0</mark>	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:15 PM	2 2 0 1 2 0 1 1 1	15 9 11 11 9 7 5 15	14 12 15 8 10 5 11 4	2 2 2 4 3 2 2	7 8 7 5 5 7 5 5	1 4 2 3 1 8 2 5	3 3 4 3 2 3 2 2	15 22 27 18 20 13 16 7	1 1 4 2 0 0 2	8 9 3 7 6 5 5 3	13 16 9 6 13 12 8 9	1 2 1 4 0 1 1 0	82 90 85 70 74 64 58 55
TOTAL VOLUMES =	NL 9	NT 82	NR 79	SL 19	ST 49	SR 26	EL 22	ET 138	ER 12	WL 46	WT 86	WR 10	TOTAL 578
PM Pe	eak Hr Be	egins at:	400	PM									
PEAK Volumes =	5	46	49	8	27	10	13	82	8	27	44	8	327
PEAK HR. FACTOR:		0.806			0.804			0.736			0.731		327 0.908
CONTROL	4 \ \ \	Chan Cla											

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

TMC Summary of Sampson St/Harbor Dr



AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	Sampson St DATE: 06/11/2008								LOCATION: City of San Diego					
E-W STREET:	Harbor	Dr			DAY:	WEDNE	SDAY	SDAY PROJEC			08-41	148-027		
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	JND		
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:45 AM	1 6 3 4 3 2 4 8	18 14 15 13 15 15 16	8 7 12 11 12 15 15 11	1 1 0 2 3 3	18 18 22 17 32 15 18 14	7 7 11 5 4 5 2	1 1 2 6 9 7 2 4	63 55 58 46 61 39 41	14 4 6 3 4 3 7	16 24 17 18 11 17 15 10	96 143 154 124 97 75 66 48	4 4 1 3 1 2 2 3	247 284 294 274 232 219 187 167	
TOTAL VOLUMES =	NL 31	NT 120	NR 91	SL 11	ST 154	SR 48	EL 32	ET 421	ER 45	WL 128	WT 803	WR 20	TOTAL 1904	
AM Pe	eak Hr Be	egins at:	700	AM										
PEAK Volumes =	14	61	38	3	75	32	10	234	28	75	517	12	1099	
PEAK HR. FACTOR:		0.942			0.948			0.872			0.878		0.935	
CONTROL:	Signali	zed												

Signalized CONTROL:

National Data & Surveying Services

N-S STREET:	Samps	Sampson St DATE: 06/11						/2008 LOCATION: City of San Diego					
E-W STREET:	Harbor	Dr			DAY:	WEDNE	SDAY		PRO	JECT#	08-41	48-027	
	N	ORTHBO		SC	OUTHBO		F	ASTBOU	ND	<u>۱۸</u>	/ESTBOL	IND	
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM	9 2 6	40 27 21	13 11 7	523	18 19 11	7 10 4	17 8 21	159 166 212	3 2 0	3 5 7	41 53 60	1 1 2	316 306 354
4:45 PM 5:00 PM 5:15 PM	6 3 2	23 21 9	10 9 4	4 5 0	18 17 10	5 7 5	10 12 8	211 189 194	0 0 1	4 2 5	44 37 41	4 0 0	339 302 279
5:30 PM 5:45 PM 6:00 PM 6:15 PM 6:30 PM 6:45 PM	1 1	14 10	3 1	1 1	11 6	6 3	6 11	158 106	1 2	1 1	26 35	0 3	228 180
TOTAL VOLUMES =	NL 30	NT 165	NR 58	SL 21	ST 110	SR 47	EL 93	ET 1395	ER 9	WL 28	WT 337	WR 11	TOTAL 2304
PM Pe	eak Hr Be	egins at:	400	PM									
PEAK VOLUMES =	23	111	41	14	66	26	56	748	5	19	198	8	1315
PEAK HR. FACTOR:		0.706			0.855			0.868			0.815		0.929
CONTROL ·	Signali	zed											

CONTROL: Signalized

National Data & Surveying Services

TMC Summary of Sicard St/National Ave



AM PEAK HOUR	800 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

CONTROL: 2-Way Stop Sign (N/S)

National Data & Surveying Services

N-S STREET:	Sicard	St			DATE:	06/10/2	2008		LOCATION: City of San Diego					
E-W STREET:	Nationa	al Ave			DAY:	TUESD	۹Y		PRO	JECT#	08-41	148-028		
	NO	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	JND		
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:00 AM 9:15 AM 9:00 AM 9:15 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM	0 1 2 3 5 2 6 0	4 6 5 6 3 7 9	2 2 1 3 1 1 9	1 0 1 2 1 0	1 6 4 5 3 5 4 6	0 1 6 2 1 4 4	1 1 2 1 0	11 14 14 18 16 17 17 29	4 2 0 3 0 2 2	1 2 7 13 11 3 4 9	28 27 29 45 42 27 51 35	2 1 2 0 1 1 1 0	55 61 69 98 92 64 99 103	
TOTAL VOLUMES =	NL 19	NT 44	NR 20	SL 6	ST 34	SR 19	EL 8	ET 136	ER 13	WL 50	WT 284	WR 8	TOTAL 641	
AM Pe	eak Hr Be	egins at:	800	AM										
PEAK Volumes =	13	25	12	4	18	11	4	79	7	27	155	3	358	
PEAK HR. FACTOR:		0.694			0.825			0.726			0.826		358 0.869	
CONTROL	2-Way	Stop Sig	(N/S)											

2-Way Stop Sign (N/S) CONTROL:

National Data & Surveying Services

N-S STREET:	Sicard	St			DATE:	06/10/2	2008		LOCATION: City of San Diego					
E-W STREET:	Nationa	al Ave			DAY:	TUESD	AY		PRO.	JECT#	08-41	48-028		
	NC	ORTHBO	UND	S	OUTHBOU	JND	E	ASTBOU	ND	W	/ESTBOL	JND		
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 6:45 PM 6:45 PM	1 0 2 0 1 2 0 4	8 9 6 2 9 8 8 6	4 8 4 1 7 5 7 2	2 2 0 0 2 0 0 2	3 6 5 0 3 4 5 2	2 2 5 0 1 2 5 1	2 3 1 4 2 3 1 1	43 36 39 44 35 30 28 28	3 1 2 7 0 0 0	3 0 2 3 2 4 6 2	38 29 32 25 23 24 31 34	0 1 0 1 2 4 1	109 97 98 81 93 84 95 83	
TOTAL VOLUMES =	NL 10	NT 56	NR 38	SL 8	ST 28	SR 18	EL 17	ET 283	ER 15	WL 22	WT 236	WR 9	TOTAL 740	
PM Pe	eak Hr Be	egins at:	400	PM										
PEAK Volumes =	3	25	17	4	14	9	10	162	8	8	124	1	385	
PEAK HR. FACTOR:		0.662			0.675			0.900			0.811		385 0.883	

CONTROL: 2-Way Stop Sign (N/S)

National Data & Surveying Services

TMC Summary of 26th St/National Ave



AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

CONTROL: 2-Way Stop Sign (N/S)

National Data & Surveying Services

N-S STREET:	26th St	26th St DATE: 06/10/2008								LOCATION: City of San Diego					
E-W STREET:	Nationa	al Ave		DAY: TUESDAY					PRO	JECT#	08-41	148-029			
	NC	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	JND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL		
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:00 AM 9:15 AM 9:00 AM 9:15 AM 10:00 AM 10:15 AM 10:30 AM 11:5 AM 11:00 AM 11:45 AM	3 1 4 3 0 1 1	4 3 4 3 5 8 2 2	4 3 1 5 4 5 1 5	4 8 11 9 11 8 15 8	3 1 4 2 0 2 0	1 1 0 1 0 1	1 0 1 1 1 0 1	12 15 15 18 13 17 18 22	1 1 0 2 4 2 2 2	7 7 11 9 7 8	27 28 34 55 50 31 55 42	12 9 10 15 12 14 7 11	79 77 91 126 115 93 112 103		
TOTAL VOLUMES =	NL 16	NT 31	NR 28	SL 74	ST 16	SR 4	EL 6	ET 130	ER 14	WL 65	WT 322	WR 90	TOTAL 796		
AM Pe	eak Hr Be	egins at:	745	AM											
PEAK Volumes =	7	18	15	43	8	1	3	66	10	36	191	48	446		
PEAK HR. FACTOR:		0.769			0.765			0.940			0.849		0.885		
CONTROL:	2-Way	Stop Sig	n (N/S)												

National Data & Surveying Services

N-S STREET:	26th S	t			DATE:	06/10/2	0/2008 LOCATION: City of San Diego					go	
E-W STREET:	Nation	National Ave DAY: TUES					DAY PROJECT# 08-4148-029						
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	IND	W	/ESTBOl	JND	
LANES:	NL O	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 6:30 PM 6:45 PM	5 2 4 3 2 0 4	6 8 3 2 8 4 3 6	12 11 6 5 9 4 7 5	22 18 23 14 19 18 26 17	5 9 2 5 5 6 11 7	1 0 1 0 0 1 1	2 2 0 1 1 0 3	43 42 36 34 41 34 32 28	4 2 7 10 2 1 3 1	6 9 11 9 1 2 4 11	35 28 29 25 23 28 40 32	15 14 12 13 20 17 14 16	156 145 134 121 132 116 141 131
TOTAL VOLUMES =	NL 23	NT 40	NR 59	SL 157	ST 50	SR 4	EL 9	ET 290	ER 30	WL 53	WT 240	WR 121	TOTAL 1076
PM Pe	eak Hr Be	egins at:	400	PM									
PEAK VOLUMES =	14	19	34	77	21	2	5	155 0.934	23	35	117	54	556
PEAK HR. FACTOR:		0.728			0.893			0.934			0.920		0.891
	2 Mov	Stop Sic											

CONTROL: 2-Way Stop Sign (N/S)

National Data & Surveying Services

TMC Summary of I-5 SB Off-ramp/National Ave



AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

CONTROL: 1-Way Stop Sign (NB)

National Data & Surveying Services

N-S STREET:	I-5 SB	Off-ram	р		DATE:	DATE: 06/11/2008 LO					LOCATION: City of San Diego				
E-W STREET:	Nationa	al Ave			DAY: WEDNESDAY					PROJECT# 08-4148-030					
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND					
LANES:	NL 1	NT 0	NR 1	SL 0	ST 0	SR 0	EL 0	ET 2	ER 0	WL 0	WT 2	WR 0	TOTAL		
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 11:5 AM 11:30 AM 11:45 AM	7 6 4 12 4 8 7		35 53 38 46 46 27 30 28					20 22 17 24 30 26 30 34	2 1 1 0 3 1 2	4 10 12 10 16 6 10 11	28 27 49 66 53 53 52 55		96 119 123 150 157 119 131 137		
TOTAL VOLUMES =	NL 54	NT O	NR 303	SL 0	ST O	SR 0	EL O	ET 203	ER 10	WL 79	WT 383	WR 0	TOTAL 1032		
AM Peak Hr Begins at: 745 AM															
PEAK VOLUMES =	28	0	149	0	0	0	0	110	4	42	224	0	557		
PEAK HR. FACTOR:		0.763			0.000			0.919			0.875		0.887		
CONTROL:	CONTROL: 1-Way Stop Sign (NB)														

National Data & Surveying Services

N-S STREET:	I-5 SB	Off-ram	р		DATE: 06/11/2008 LOC						LOCATION: City of San Diego				
E-W STREET:	Nation	al Ave			DAY: WEDNESDAY					PROJECT# 08-4148-030					
	NORTHBOUND			S	SOUTHBOUND			EASTBOUND			/ESTBOl				
LANES:	NL 1	NT 0	NR 1	SL 0	ST 0	SR 0	EL 0	ET 2	ER 0	WL 0	WT 2	WR 0	TOTAL		
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:15 PM	6 12 4 10 6 6 5 8		97 66 62 71 64 63 45 39					72 71 70 62 81 56 67 49	3 1 2 4 1 2 3 4	9 8 7 13 9 6 4	55 43 46 50 50 48 43 60		242 201 191 204 215 184 169 164		
TOTAL VOLUMES =	NL 57	NT O	NR 507	SL O	ST 0	SR 0	EL O	ET 528	ER 20	WL 63	WT 395	WR 0	TOTAL 1570		
PM Pe	eak Hr Be	egins at:	400	PM											
PEAK VOLUMES =	32	0	296	0	0	0	0	275	10	31	194	0	838		
PEAK HR. FACTOR:		0.796			0.000			0.950			0.879		0.866		
	1 \//ov	Stop Sid													

CONTROL: 1-Way Stop Sign (NB)

NDS

National Data & Surveying Services

TMC Summary of 26th St/Main St

SOUTHBOUND APPROACH LANES Ν 0 1 0 26th St TOTAL 17 42 21 Μ $^{\circ}$ 9 26 NOON 0 0 0 AM 13 16 7 Main St Main St J) WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON TOTAL AM PM AM NOON PM 54 0 24 14 26 0 28 0 10 0 1 217 148 45 193 1 50 167 0 0 0 7 7 59 0 19 78 14 0 1 38 80 ₽ 2 NOON 0 0 0 TURNING MOVEMENT COUNT 7 17 39 AΜ 26th St / Main St (Intersection Name) TOTAL 119 13 55 26th St 0 1 1 <mark>Tuesday</mark> Day 6/10/08 Date NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	415 PM

Project #: 08-4148-031

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

N-S STREET:	26th St DATE: 06/10/2008									LOCATION: City of San Diego					
E-W STREET:	Main St DAY: TUESE						AY	PROJECT# 08-4148-031							
	NC	NORTHBOUND SOUT					HBOUND EASTBOUND					WESTBOUND			
LANES:	NL O	NT 1	NR 1	SL 0	ST 1	SR 0	EL O	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL		
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:45 AM 11:00 AM 11:15 AM	5 2 4 0 5 0 0 0	8 3 1 5 3 2 1	15 9 6 9 9 5 7	4 1 5 6 3 5 1 2	2 3 1 5 5 2 2 3	2 4 3 4 5 1 2 1	1 3 3 1 3 1 2	15 9 11 15 14 22 19 28	1 5 0 1 4 4 2 0	15 9 15 20 12 11 9 3	29 34 42 43 31 21 32 22	8 5 9 4 8 8 2 3	105 87 100 115 100 89 77 72		
TOTAL VOLUMES =	NL 16	NT 26	NR 69	SL 27	ST 23	SR 22	EL 17	ET 133	ER 17	WL 94	WT 254	WR 47	TOTAL 745		
AM Peak Hr Begins at: 700 AM															
PEAK Volumes =	11	17	39	16	11	13	10	50	7	59	148	26	407		
PEAK HR. FACTOR:		0.598			0.667			0.882			0.869		0.885		
CONTROL: 4-Way Stop Sign															
National Data & Surveying Services

N-S STREET:	26th S	t			DATE:	06/10/2	2008		LOC	ATION:	City of	San Die	до
E-W STREET:	Main S	t			DAY:	TUESD	AY		PRO	JECT#	08-41	148-031	
	N	ORTHBO	UND	SC	OUTHBOI	JND	E	ASTBOU	IND	W	/ESTBOI	JND	
LANES:	NL 0	NT 1	NR 1	SL 0	ST 1	SR <mark>0</mark>	EL 0	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:30 PM 6:15 PM	0 0 1 0 1 0 0 0	17 12 5 15 6 5 6 4	35 17 20 16 27 15 18 13	6 9 6 7 4 6 7 7	0 3 1 2 0 1 2 0	1 3 1 3 2 1	2 1 1 5 7 1 5 3	38 41 45 33 48 21 22 10	1 3 0 2 2 2 0 0	5 4 3 4 8 13 5 1	16 14 9 6 16 7 9 8	5 11 5 4 8 6 2 6	126 118 97 97 128 80 78 53
TOTAL VOLUMES =	NL 2	NT 70	NR 161	SL 52	ST 9	SR 15	EL 25	ET 258	ER 10	WL 43	WT 85	WR 47	TOTAL 777
	eak Hr Be	egins at:	415	PM			-			-			- •
PEAK Volumes =	2	38	80	26	6	8	14	167	7	19	45	28	440
PEAK HR. FACTOR:		0.882			0.667			0.825			0.719		0.859
		<u>.</u>											

CONTROL: 4-Way Stop Sign

National Data & Surveying Services

TMC Summary of Harbor Dr/Schley St

Project #: 08-4148-032

SOUTHBOUND APPROACH LANES Ν 1 0 0 Harbor Dr TOTAL 16 28 76 Μ 27 16 4 NOON 0 0 0 AM 12 70 12 Schley St Schley St **[**] WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON TOTAL AM PM AM NOON PM 17 56 1 133 58 75 0 39 0 1 1 912 531 182 713 1 200 712 0 0 0 0 0 0 0 0 0 0 0 0 ₽ 0 0 0 NOON 0 0 0 TURNING MOVEMENT COUNT AΜ 0 0 0 Harbor Dr / Schley St (Intersection Name) TOTAL Harbor Dr 0 0 0 0 0 0 <mark>Tuesday</mark> Day 6/10/08 Date NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

CONTROL: 1-Way Stop Sign (SB)	AM PEAK HOUR	715 AM
CUNTROL: 1-Way Stop Sign (SD)	NOON PEAK HOUR	0 AM
	PM PEAK HOUR	430 PM

National Data & Surveying Services

N-S STREET:	Harbor	Dr			DATE:	06/10/2	2008		LOC	ATION:	City of	San Dieg	до
E-W STREET:	Schley	St			DAY:	TUESD	۹Y		PRO	JECT#	08-47	148-032	
	N	ORTHBO	UND	SC	OUTHBOU	JND	E	ASTBOU	ND	N	/ESTBOl	JND	
LANES:	NL 0	NT 0	NR 0	SL 0	ST 0	SR 1	EL 1	ET 1	ER <mark>0</mark>	WL 0	WT 1	WR 1	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM	0 0 0 0 0 1			5 5 3 1 3 3 0	1 0 4 2 6 0 0 2	17 15 16 27 12 18 14 8	13 16 12 14 16 14 9 12	60 54 59 53 55 57 42	0 0 0 0 3 0 0		49 147 139 144 101 79 81 50	15 4 3 7 3 1 2 1	160 241 231 234 194 173 166 116
TOTAL VOLUMES =	NL 1	NT O	NR 0	SL 23	ST 15	SR 127	EL 106	ET 414	ER 3	WL O	WT 790	WR 36	TOTAL 1515
AM Pe	eak Hr B	egins at:	715	AM									
PEAK Volumes =	0	0	0	12	12	70	58	200	0	0	531	17	900
PEAK HR. FACTOR:		0.000		12 12 70 0.783				0.921			0.907		0.934
CONTROL:	1-Wav	Stop Sia											

1-Way Stop Sign (SB) CONTROL:

National Data & Surveying Services

N-S STREET:	Harbor	Dr			DATE:	06/10/	2008		LOC	ATION:	City of	San Die	до
E-W STREET:	Schley	St			DAY:	TUESD	AY		PRO.	JECT#	08-41	48-032	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOL	JND	
LANES:	NL 0	NT 0	NR 0	SL 0	ST 0	SR 1	EL 1	ET 1	ER 0	WL 0	WT 1	WR 1	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:30 PM				3 2 0 6 5 5 2 0	0 0 0 4 0 0 0	3 3 5 4 6 12 8 2	23 14 16 25 26 8 15 15	136 157 180 174 182 176 166 84			47 54 58 45 40 39 28 38	28 14 10 8 11 10 10 5	240 244 269 262 274 250 229 144
TOTAL VOLUMES =	NL O	NT O	NR 0	SL 23	ST 4	SR 43	EL 142	ET 1255	ER 0	WL O	WT 349	WR 96	TOTAL 1912
PM Pe	eak Hr Be	egins at:	430	PM									
PEAK VOLUMES =	0	0	0	16	4	27	75	712	0	0	182	39	1055
PEAK HR. FACTOR:		0.000			0.691			0.946			0.813		0.963
	1 \\/ov	Stop Sig											

CONTROL: 1-Way Stop Sign (SB)

NATIONAL DATA AND SURVEYING SERVICES

cation: 28th St	& National A	Ave		City:	•	08-4335-006 Diego	Date:	12/2/08		Day:	Tuesday	
LANES:	0 NL	2 NT	0 NR	0 SL	1 ST	0 SR	1 EL	2 ET	0 ER	1 WL	1 WT	0 WR
:00 CARS	14	22	3	10	30	102	15	34	10	13	97	9
2-axle	1			1			1	5		1	4	
3-axle		1					1	1				
4-axle												
5-axle +											1	
:15 CARS	11	17	5	10	41	114	34	53	4	15	86	13
2-axle		1				1	1	1	1		5	
3-axle					1			1			1	
4-axle										1	1	
5-axle +										1		
	10			-			05					45
:30 CARS	13	27	8	7	46	57	35	41	1	11	84	15
2-axle						1		3	1	1	1	
3-axle							3	2				
4-axle												
5-axle +							1					
:45 CARS	3	23	6	9	43	75	16	34	2	10	103	12
2-axle				2	1		1	5		2	2	
3-axle						1		3				
4-axle												
5-axle +							5					
:00 CARS	7	9	10	9	37	48	19	32	5	12	127	7
2-axle			1		2	10	1	6	2	2	127	1
			1		1		1	1	1	1	1	
3-axle					1			1	1	1	1	
4-axle												
5-axle +		-					2	1		1		
:15 CARS	6	10	5	6	25	28	9	30	5	26	132	18
2-axle				1				4	2		5	2
3-axle							1	1			2	
4-axle									1			
5-axle +							1					
:30 CARS	5	14	2	6	21	24	9	31	7	32	92	20
2-axle	1		1		2	3		7	3	1	1	
3-axle					1	1	1	1			1	
4-axle	1	1	1	1	† ·	1				1		
		1		1	1		1				1	
5-axle +			_				1				1	
:45 CARS	4	18	3	14	34	22	12	39	9	33	83	29
2-axle	1		1	<u> </u>	2	1	2	2			4	
3-axle		+						1				
4-axle				<u> </u>			<u> </u>				1	
5-axle +							1	1				
						OVEMENT TO						
CARS 2-axle	63 3	140 1	42 3	71 4	277 7	470 6	149 6	294 33	43 9	152 7	804 22	123
3-axle 4-axle	0	1 0	0	0	3 0	2	7 0	11 0	1 1	1 1	5 2	0
5-axle +	0	0	0	0	0	0	11	2	0	2	2	0

PM Peak Hr Begii 700 AM

66 NL

TOTALS

0

142 NT 45 NR

CONTROL: Signa	lized												
	42	91	22	39	162	351	113	183	19	55	385	49	
		0.807			0.826			0.829			0.948		l

0 478 *SR*

287 ST

75

SL

173 EL 2 340 *ET* 54 ER 835 WT

126

WR

163 WL

NATIONAL DATA AND SURVEYING SERVICES

ocatior	n: 28th St &	& National A	ve		City:		8-4335-006 Diego	Date:	12/2/08		Day:	Tuesday	
	LANES:	0 NL	2 NT	0 NR	0 SL	1 ST	0 SR	1 EL	2 ET	0 ER	1 WL	1 WT	0 WR
1													
6:00	CARS	9	24	14	26	58	28	21	80	31	35	82	27
	2-axle					1		1	4			2	
	3-axle												
	4-axle												
	5-axle +							1					
6:15	CARS	3	30	11	18	58	25	16	91	21	48	87	23
	2-axle					1	2	1	1			4	2
	3-axle												
	4-axle												
	5-axle +												
	CARS	2	28	12	15	52	23	17	96	22	44	80	38
	2-axle					3	1		5			3	1
	3-axle							1					
	4-axle												
	5-axle +							1					
6:45	CARS	4	23	9	22	49	16	19	92	24	34	76	36
	2-axle								3	1	1	4	
	3-axle												
	4-axle												
	5-axle +												
	CARS	5	21	11	22	44	23	13	101	38	53	70	25
		5	21		22	44	23	13	101	30		70	23
	2-axle												
	3-axle												
	4-axle												
	5-axle +												
7:15	CARS	6	18	13	20	60	19	6	74	33	44	61	44
	2-axle				1							3	
	3-axle							1	1				
	4-axle												
	5-axle +							1					
	CARS	7	22	15	17	58	15	18	89	20	29	79	25
	2-axle					3	1		3	1		4	1
						3			5	1		4	
	3-axle						1						
	4-axle												
	5-axle +										1		
7:45	CARS	5	25	15	16	52	14	16	98	35	37	55	23
	2-axle					1			1	2		3	1
	3-axle												
	4-axle												
	5-axle +					1							
						MC	VEMENT TO	TALS					
	CARS 2-axle	41 0	191 0	100 0	156 1	431 9	163 4	126 2	721 17	224 4	324 1	590 23	241 5
	2-axie 3-axle	0	0	0	0	0	1	2	17	0	0	0	0

4-axle 191 *NT* 100 NR 157 *SL* 441 *ST* 168 *SR* 739 *ET* 228 *ER* 613 WT 5-axle EL WL WR TOTALS NL

PM Peak Hr Begii 1600 PM

CONTROL: Signa	lized											
5	18	105	46	81	222	95	78	372	99	162	338	127
		0.899			0.881			0.967			0.944	

catio	n: 28th St &				City:		Diego	Date:	12/3/08			Wednesday	
	LANES:	0	2	0	0	1	0	1	2	0	1	1	0
	r	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WF
:00	CARS	7	16	9	8	34	69	23	24	0	21	106	17
	2-axle						1		5	1	3	6	1
							-		5		5		
	3-axle					1		1				1	
	4-axle												
	5-axle +							2	1			2	
:15	CARS	2	15	7	10	50	83	18	43	1	24	98	13
	2-axle					1	1		2	6	1	5	1
	3-axle					1	1	2					
	4-axle												
	5-axle +								1			2	
7.30	CARS	3	25	6	3	41	51	31	61	4	15	110	8
1.50			25	0	5		51	51		-			0
	2-axle	1							5		1	4	
	3-axle					2		1	2			2	
	4-axle												l
	5-axle +							1	1			1	
7:45	CARS	10	18	6	8	36	53	17	32	5	19	118	7
	2-axle					3	3		8		2	3	1
						5			Ŭ			5	
	3-axle							1					
	4-axle												
	5-axle +					1		1				1	
	i i												
8:00	CARS	2	12	4	7	30	31	16	42	13	25	139	7
	2-axle	1		1				1	9		1	4	1
	3-axle					1		2			1	2	
	4-axle						-						
	5-axle +							2	1				
8:15	CARS	7	22	9	6	24	27	8	24	4	34	98	35
		· · · ·											
	2-axle						1	2	4	3	2	5	2
	3-axle			1		1		1	1			1	
	4-axle					1		1					
					1				2			2	
	5-axle +				1	1		2	2			3	
8:30	CARS	7	13	2	5	24	22	2	31	6	40	96	21
	2-axle	1	1	1		2	1	3	2	2	2	6	2
	3-axle		1				1	1				3	
	4-axle							1				ļ	
	5-axle +							2				1	
0.45	CARS	2	14	2	9	24	22	8	24	13	29	98	24
0:45		2		2		26	22		26				
	2-axle		1		11	1	3	2	11	1	2	5	1
	3-axle		1						3			1	
	4-axle			1									
				1			1						
	5-axle +											2	i
						MC	VEMENT TO	TALS					
	CARS	40	135	45	56	265	358	123	283	46	207	863	132
	2-axle 3-axle	3	2	2	11 0	7	10 2	8	46 6	13 0	14 1	38 10	9
	4-axle	0	0	1	0	1	0	2	0	0	0	0	0
	5-axle + TOTALS	0 43	0 139	0 49	1 68	2 281	0 370	10 152	6 341	0 59	0 222	12 923	0 141
	101AL3	43 NL	NT	49 NR	00	201	370	1.72	J+1	J7	444	723	141

PM Peak Hr Begii 700 AM

CONTROL: Signa	lized												
	23	74	28	29	170	262	98	185	17	86	459	48	
		0.893			0.784			0.700			0.044		
	-	0.893			0.784			0.708		I	0.944		

cation	: 28th St &	National A	10		Citu		8-4335-006 Diego	Date:	12/3/08		Dave	Wednesday	
cation	LANES:	National A 0	ve 2	0	City: 0	San i 1	Diego 0	Date: 1	2	0	Day:	wednesday 1	0
	LANES.	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
		,		10		54	05	07	100	47			
5:00	CARS	6	20	10	23	56	25	27	123	17	38	83	33
	2-axle								4			5	
	3-axle								1				
ŀ	3-4116												
l l	4-axle												
	5-axle +							1					
				10	10	45			100	45		74	
6:15	CARS	4	23	18	12	45	20	25	122	15	38	74	31
	2-axle		1		1	1	1	1	2			5	
	3-axle												
ŀ	J-divic												
ŀ	4-axle												
	5-axle +						1		1			1	
6:30	CARS	4	19	9	11	39	33	29	124	15	38	73	36
	2-axle					1	2		3	1		4	
	3-axle												
Ī													
ŀ	4-axle												
	5-axle +							1				1	
				<u> </u>	10				110		40		
6:45	CARS	3	27	9	12	55	26	21	112	22	48	66	29
	2-axle		1			1		1	4			2	
	3-axle							1					
-	3-4116												
ŀ	4-axle							1					
	5-axle +							1				1	
7.00	04.00	,	22	10	0	50	24	01	0/	05	40	(7	
7:00	CARS	6	23	10	9	52	24	21	86	25	43	67	44
	2-axle				2				1	1		2	
	3-axle												
Ī													
ŀ	4-axle												
	5-axle +							1					
7:15	CADE	3	20	15	20	40	14	20	105	15	38	74	37
7:15	CARS	3	20	15	20	40	14	20	105	15	30	/4	37
į.	2-axle												
	3-axle	1		1	1			1	2	1	1	1	
Ī													
ŀ	4-axle		-					1	-				
	5-axle +												
7:30	CARS	3	34	16	17	49	11	21	98	19	34	56	35
		5	57	10	.,								
ļ	2-axle					1	1	2	1	1	1	2	1
	3-axle										1		
		-	Γ		Γ				Γ	Γ			
	4-axle												
	5-axle +												
7:45	CARS	4	14	17	10	49	15	22	60	10	46	65	40
[
ŀ	2-axle								2		1	3	
	3-axle								1				
ſ	4 ovis												
ŀ	4-axle												
	5-axle +							1				1	
						MO	VEMENT TO	TALS					
	CARS	33	180	104	114	385	168	186	830	138	323	558	285
	2-axle	0	2	0	3	4	4	4	17	3	2	23	1
	3-axle 4-axle	1	0	1	1	0	0	2	4	1	2	1	0
	5-axle +	0	0	0	0	0	1	5	1	0	0	4	0
ſ	TOTALS	34 NL	182 NT	105 NR	118 <i>SL</i>	389 <i>ST</i>	173 SR	199 <i>EL</i>	852 <i>ET</i>	142 ER	327 WL	586 WT	286 WR

PM Peak Hr Begii 1600 PM

CONTROL: Signal	lized												
Ŭ	17	91	46	59	198	108	109	496	70	162	315	129	
		0.837			0.877			0.975			0.953		

							<i>le Count</i> 18-4335-007						
ocatio	n: 28th St &	Boston Av			City:	San	Diego	Date:	12/2/08			Tuesday	
	LANES:	1 NL	2 NT	1 NR	1 SL	1.5 ST	0.5 SR	0 EL	1 ET	0 ER	1 WL	1 WT	0 WR
7:00	CARS	1	123	29	28	172	9	4	12	1	1	6	26
	2-axle	•	5	27	20	1	4		1		2	1	20
	3-axle	1	1										
	4-axle												
	5-axle +			1		4							
7.15	CARS	2	103	10	32	146	7	6	9	4	5	0	22
.15	2-axle	2	4	10	52	1	3	0	2		5	1	
	3-axle		2			1	5	1	1				
	4-axle		2			1			1				
	5-axle +		3	2		5							
1.20	CARS	3	94	18	32	134	6	2	13	3	0	3	17
/:30		3	3	1	32	134	0	2	1	3	0	3	17
	2-axle		3			4			1				
	3-axle			1		4							
	4-axle					4	1						
	5-axle +						1						
7:45	CARS	1	71	21	24	125	4	6	6	4	1	6	13
	2-axle		1	3		2		1	1	2		1	
	3-axle		2			2							
	4-axle												
	5-axle +			1		7		1	1				
3:00	CARS	2	75	16	31	101	1	5	8	1	1	6	9
	2-axle		1	2		3	3	1	2				
	3-axle		3		1								
	4-axle		1										
	5-axle +					8	1						
8:15	CARS	1	63	11	24	104	2	2	8	1	5	1	10
	2-axle					4	2		3				
	3-axle		1		1	2		2	1				
	4-axle												
	5-axle +		4	1		3							
8:30	CARS	2	63	16	32	118	0	0	8	0	2	2	5
	2-axle		4			3	4	3	3				
	3-axle		2			3	1						
	4-axle		1										
	5-axle +		1	1		2		1					
3:45	CARS	1	81	11	35	116	10	7	8	4	0	3	5
	2-axle	1	1	2	1	2		2	4				
	3-axle	1	2	1		1			1				
	4-axle						ļ						
	5-axle +		1	1	1	3							
	0.15						OVEMENT TO					8° 800	
	CARS 2-axle	13 1	673 19	132 8	238 1	1016 16	39 16	32 7	72 17	18 2	15 2	27 3	107 0
	3-axle	2	13	2	2	12	1	3	4	0	0	0	0

	MOVEMENT TOTALS														
CARS	13	673	132	238	1016	39	32	72	18	15	27	107			
2-axle	1	19	8	1	16	16	7	17	2	2	3	0			
3-axle	2	13	2	2	12	1	3	4	0	0	0	0			
4-axle	0	2	0	0	1	0	0	1	0	0	0	0			
5-axle +	0	9	7	1	36	2	2	1	0	0	0	0			
TOTALS	16	716	149	242	1081	58	44	95	20	17	30	107			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR			

PM Peak Hr Begii 700 AM

CONTROL: Signa	lized												
	8	412	87	116	608	34	21	49	14	9	18	78	L
		0.787			0.869			0.875			0.729		

						AX Project # 0	<i>le Count</i> 8-4335-007						
ocatior	n: 28th St &				City:	San	Diego	Date:	12/2/08			Tuesday	
	LANES:	1 NL	2 NT	1 NR	1 SL	1.5 ST	0.5 SR	0 EL	1 ET	0 ER	1 WL	1 WT	0 WR
(00	04.00												
	CARS	2	132	47	69	122	1	9	39	2	0	5	8
	2-axle		1				1		3		1		
	3-axle			3			2						
	4-axle												
	5-axle +	1	_	4		1	3	2	1				
6:15	CARS	0	133	60	64	157	7	8	22	4	2	2	11
	2-axle			2		2			3				
	3-axle			2									
	4-axle												
	5-axle +		3	1									
(00		1			(2)	140		14	20	-	-	1	10
	CARS	1	116	62	62	148	4	14	39	5	1	1	12
	2-axle					1	3	1					
	3-axle			2	-	2		ł – –					
	4-axle												
	5-axle +		3	1		1	2						
16:45	CARS	0	113	49	57	156	5	6	22	3	1	3	7
	2-axle												
	3-axle			2		1				1			
	4-axle												
	5-axle +			1									
7.00	CARS	2	120	55	57	140	4	7	39	2	1	5	3
7.00	2-axle	2	120	55	57	140		,	1		1	5	5
											1		
	3-axle						1		2				
	4-axle		1										
	5-axle +		2	1									
7:15	CARS	0	107	52	50	155	11	7	27	3	1	1	7
	2-axle		1	1		1	1		1				
	3-axle								1				
	4-axle												
	5-axle +		2	2		1							
7:30	CARS	1	133	46	41	144	6	6	17	8	2	1	7
	2-axle					2	3						
						-							
	3-axle			1									
	4-axle												
	5-axle +		1	1									
7:45	CARS	1	91	30	51	176	5	8	22	8	3	3	4
	2-axle			<u> </u>		1	2						1
	3-axle				<u> </u>								
	4-axle										ļ		
	5-axle +			1		1							
-							VEMENT TC						
	CARS 2-axle	7 0	945 2	401 3	451 0	1198 7	43 10	65 1	227 8	35 0	11 2	21 0	59 0
			-						2		. ~		0

2-axle Ω 0 0 3-axle 4-axle 425 *NR* 451 *SL* 1212 *ST* 61 *SR* 36 ER 59 WR 5-axle -EL WL WT TOTALS NL NT ΕT

PM Peak Hr Begii 1600 PM

CONTROL: Signa	lized											
5	4	501	236	252	591	28	40	129	15	5	11	38
		0.922			0.947			0.780			0.900	

						Axi Project # 0	<i>le Count</i>						
Locatio	n: 28th St 8	Boston Av	e		City:		o-4335-007 Diego	Date:	12/3/08		Day:	Wednesday	
	LANES:	1	2	1	1	1.5	0.5	0	1 ET	0	1	1 WT	0 WR
		NL	NT	NR	SL	ST	SR	EL		ER	WL		
7:00	CARS	1	83	32	20	157	5	4	8	0	1	2	8
	2-axle		2			2							
	3-axle		2		1	3							
	4-axle												
	5-axle +		1	3		6						1	
7:15	CARS	0	72	17	36	180	6	6	20	2	3	4	10
	2-axle		1	1		4	1		2				
	3-axle												
	4-axle												
	5-axle +			2	1	3							
7.30	CARS	1	89	19	35	152	5	6	9	0	0	1	22
7.50	2-axle		3	1	1	3		3	, í	0	0		22
			5				1						
	3-axle					1	1	1					
	4-axle												
	5-axle +	1		2		4		1					
7:45	CARS	6	85	12	32	115	6	2	8	4	1	8	9
	2-axle		1	1	1	3	1		3				
	3-axle		3			1	2						
	4-axle				1								
	5-axle +			2		4			1		1		
8:00	CARS	1	56	16	29	93	6	6	15	1	2	1	11
	2-axle		3	1	2	2	2		1				
	3-axle		1										
	4-axle		2	2		3	1		1				
	5-axle +		2										
0.45	CARS	2	70	1/	21	10/	2	_	10	2	1	2	0
8:15		2	78	16	31	106	3	5	12	3	1	3	8
	2-axle				1	6	2	1	2				
	3-axle			1		1	1		2		2		
	4-axle					1							
	5-axle +			5		7							
8:30	CARS	0	61	13	40	134	3	1	3	2	3	2	12
	2-axle		4	4		3		3	2				
	3-axle			2		1	1		2				
	4-axle												
	5-axle +		4	4					1				
8:45	CARS	1	61	19	30	118	7	3	11	6	1	4	14
	2-axle		2			2	1		2		3		
	3-axle		3		1	3		1				1	
	4-axle		5	1									
			2	2	1	3							
	5-axle +		2	2	1		L	L	1	l		1	
	CARS	12	585	144	253	MC 1055	VEMENT TC 41	TALS 33	86	18	12	25	94
	2-axle 3-axle	0	16 9	8 3	5 2	25 10	7 5	7	12 4	0	3	0 1	0
	4-axle	0	2	2	1	4	1	0	1	0	0	0	0

					IVIO	VENIENTIC	/IAL3					
CARS	12	585	144	253	1055	41	33	86	18	12	25	94
2-axle	0	16	8	5	25	7	7	12	0	3	0	0
3-axle	0	9	3	2	10	5	2	4	0	2	1	0
4-axle	0	2	2	1	4	1	0	1	0	0	0	0
5-axle +	1	7	20	2	27	0	1	2	0	1	1	0
TOTALS	13	619	177	263	1121	54	43	105	18	18	27	94
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR

PM Peak Hr Begii 700 AM

JOINTROL. SIGNA	9	342	92	128	638	27	23	51	6	6	16	49	I
		0.893			0.858			0.667			0.772		l

							<i>le Count</i> 8-4335-007						
ocatio	n: 28th St &			1	City:		Diego	Date:	12/3/08	0		Wednesday	0
	LANES:	1 NL	2 NT	1 NR	1 SL	1.5 ST	0.5 SR	0 EL	1 ET	0 ER	1 WL	1 WT	0 WR
6:00	CARS	1	134	49	61	182	6	10	40	3	1	5	13
	2-axle		2	1	1	1	2		1		1	-	
	3-axle		2			3	1						
	4-axle						1						
	5-axle +		1	2		1							
		2			(0		7	10	24	7		2	0
0:15	CARS	2	146	37	60	188	7	12	26	7	4	3	9
	2-axle				2	3							
	3-axle					1			1				
	4-axle												
	5-axle +		2	2		1		1	1				
6:30	CARS	0	133	40	54	195	7	12	36	2	1	3	13
	2-axle	1	4		1	1	1						
	3-axle					2			1				
	4-axle												
	5-axle +					1			1				
6:45	CARS	5	106	38	59	212	1	8	24	2	1	2	12
	2-axle		1			1	2						
	3-axle					1			1				
	4-axle					1							
	5-axle +		1	1		1					1		
7:00	CARS	5	126	40	59	194	8	14	34	3	5	4	7
	2-axle		2										
	3-axle												
	4-axle												
	5-axle +			2			1		1				
7.15	CARS	1	103	51	49	151	1	4	27	4	2	2	8
	2-axle	I	103	51	47	131	1	4	3	4	2	2	0
									3				
	3-axle						1						
	4-axle												
	5-axle +			1		1							
7:30	CARS	1	124	34	55	153	2	13	23	1	2	3	13
	2-axle						4		1				
	3-axle												
	4-axle												
	5-axle +		2	2		1	1		1				
7:45	CARS	2	75	36	55	140	6	8	20	2	1	1	5
	2-axle												
	3-axle												
	4-axle												
	5-axle +		1	2		1			1				
	0450	47	0.17	0.15	1=0		VEMENT TO		000	<u>.</u>	4-		
	CARS 2-axle	17 1	947 9	325 1	452 4	1415 6	38 9	81 0	230 5	24 0	17 1	23 0	80 0
	3-axle	0	0	0	0	7	2	0	3	0	0	0	0

					INIO	VENIENTIC	TALS					
CARS	17	947	325	452	1415	38	81	230	24	17	23	80
2-axle	1	9	1	4	6	9	0	5	0	1	0	0
3-axle	0	0	0	0	7	2	0	3	0	0	0	0
4-axle	0	0	0	0	1	0	0	0	0	0	0	0
5-axle +	0	7	12	0	7	2	1	5	0	1	0	0
TOTALS	18	963	338	456	1436	51	82	243	24	19	23	80
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR

PM Peak Hr Begii 1600 PM

CONTROL: Signa	lized											
	9	530	170	238	795	27	43	132	14	9	13	47
		0.933			0.953			0.875			0.863	

NDS

National Data & Surveying Services

TMC Summary of 28th St/Main St

SOUTHBOUND APPROACH LANES Ν 1 2 1 28th St 1052 TOTAL 505 137 294 487 PA 79 NOON 0 0 0 565 211 AM 58 Main St Main St Ū, WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON TOTAL AM PM AM NOON PM 232 147 238 1 174 0 385 58 0 1 1 448 121 88 245 1 0 360 0 366 49 0 78 127 1 43 24 0 19 1 140 607 23 ₽ NOON 0 0 0 TURNING MOVEMENT COUNT 163 19 37 AΜ 28th St / Main St (Intersection Name) TOTAL 770 177 42 28th St 2 1 1 Wednesday 6/11/08 Date Day NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	630 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	300 PM

Project #: 08-4148-035

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	28th St				DATE:	06/11/2	2008		LOC	OCATION: City of San Die			go
E-W STREET:	Main St	:			DAY:	WEDNE	SDAY		PRO	JECT#	08-41	148-035	
	NC	ORTHBO	UND	SC	DUTHBO	JND	E	ASTBOU	ND	N	/ESTBOL	JND	
LANES:	NL	NT 2	NR	SL 1	ST	SR 1	EL 1	ET 1	ER 1	WL	WT	WR	TOTAL
LANES	1	2	1	1	2	1	I	I	1	1	1	1	
6:00 AM	2	28	10	32	86	19	17	26	6	17	84	16	343
6:15 AM	5	30	17	16	89	20	23	37	19	20	81	18	375
6:30 AM	7	34	11	67	155	17	16	26	4	15	90	27	469
6:45 AM	4	33	2	55	123	13	14	29	8	14	53	42	390
7:00 AM	2	56	14	48	157	7	12	14	8	11	51	44	424
7:15 AM	6	40	10	41	130	21	16	19	4	9	51	34	381
7:30 AM	6	46	9	35	114	20	15	13	6	15	67	44	390
7:45 AM	5	42	7	35	126	16	18	20	3	8	41	38	359
8:00 AM	2	48	7	27	98	13	25	21	10	9	41	30	331
8:15 AM	7	35	3	23	77	16	18	27	5	9	44	33	297
8:30 AM	12	39	13	43	103	17	25	34	6	11	40	27	370
8:45 AM	8	66	12	39	91	14	18	32	4	6	26	35	351
9:00 AM													
9:15 AM 9:30 AM													
9:30 AM 9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:35 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
11.45 AM													
TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	66	497	115	461	1349	193	217	298	83	144	669	388	4480
	I												
AM Pe	eak Hr Be	gins at:	630	AM									
PEAK													
VOLUMES =	19	163	37	211	565	58	58	88	24	49	245	147	1664
VOLUNILJ -	17	105	57	~ 1 1	505	50	50	00	24	77	240	14/	1004
PEAK HR.													
FACTOR:		0.760			0.872			0.833			0.835		0.887
	1	0.700			0.072		8	0.000		8	0.000		0.007
CONTROL:	Signaliz	ed											

National Data & Surveying Services

N-S STREET:	28th S	t			DATE:	06/11/2	1/2008 LOC			OCATION: City of San Dieg			go
E-W STREET:	Main S	t			DAY:	WEDNE	ESDAY		PRO.	JECT#	08-41	148-035	
	N	ORTHBO	UND	SC	OUTHBOI	UND	E	ASTBOU	ND	W	/ESTBOI	JND	
			0.12			0.12							
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
1:00 PM 1:15 PM 1:30 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:15 PM 6:30 PM	6 7 6 4 8 6 8 5 4 7 4 5	144 170 140 153 139 101 108 104 106 81 86 82	33 53 20 34 21 22 23 19 14 14 9 15	57 67 90 80 77 60 56 43 53 39 36 36	104 138 139 106 98 104 68 87 74 75 61 46	18 23 21 17 11 10 8 8 7 9 12 15	52 40 49 33 29 24 41 20 38 26 11 21	118 101 77 64 75 52 49 49 49 49 39 32 27	3 2 5 9 6 1 6 2 4 4 4 4 4	20 27 20 11 13 10 5 9 2 5 4 2 5 4 2	32 43 28 18 22 22 19 15 12 24 15 18	60 61 58 59 66 51 42 37 47 47 28 43	647 732 653 588 565 463 433 398 410 370 302 314
TOTAL VOLUMES =	NL 70	NT 1414	NR 277	SL 694	ST 1100	SR 159	EL 384	ET 732	ER 50	WL 128	WT 268	WR 599	TOTAL 5875
PM Pe	Peak Hr Begins at: 300 PM												
PEAK Volumes =	23	607	140	294	487	79	174	360	19	78	121	238	2620
PEAK HR. FACTOR:		0.837		0.860			0.799		0.834			0.895	
CONTROL:	Signali	zed											

National Data & Surveying Services

N

TMC Summary of 28th St/Harbor Dr



AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	300 PM

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	28th St				DATE:	06/11/2	LOCATION: City of San Diego					jo	
E-W STREET:	Harbor	Dr			DAY:	WEDNE	SDAY		PRO.	JECT#	08-41	148-036	
	NC	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBOl	JND	
LANES:	NL 0	NT 0	NR 0	SL 1	ST 1	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:45 AM	0 0 0 0 0 0 0 0 1 1 1 0	1 7 6 1 2 1 0 2 2 0 1 1	0 0 0 0 0 1 0 0 1 1 0	29 65 102 75 97 96 63 77 73 42 47 54	6 4 2 6 3 1 5 2 1 3 2	0 11 18 12 5 3 9 5 9 4 4 5	7 29 27 3 22 12 13 9 11 6 14 15	22 69 59 43 58 63 65 39 27 43 42 36	0 0 0 1 1 0 0 0 1 3 1	1 0 1 2 6 3 2 0 1 0	36 39 41 73 74 78 108 112 52 50 76 38	40 35 25 30 32 28 25 30 25 26 33 48	142 259 281 240 299 287 291 282 203 175 226 200
TOTAL VOLUMES =	NL 2	NT 24	NR 3	SL 820	ST 37	SR 85	EL 168	ET 566	ER 7	WL 19	WT 777	WR 377	TOTAL 2885
AM Pe	eak Hr Be	egins at:	700	AM									
PEAK Volumes =	0	5	1	333	15	22	56	225	2	13	372	115	1159
PEAK HR. FACTOR:		0.750		0.856		0.873			0.862		0.969		
CONTROL:	Signaliz	red											

National Data & Surveying Services

N-S STREET:	28th S	t			DATE:	06/11/	2008		LOC	ATION:	City of	San Dieg	Jo
E-W STREET:	Harboi	r Dr			DAY:	WEDN	ESDAY		PRO.	JECT#	08-41	48-036	
	N	ORTHBO	JND	SO	UTHBO	UND	E	ASTBOU	ND	W	/ESTBOl	JND	
LANES:	NL 0	NT O	NR 0	SL 1	ST 1	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM	0 0 1 0 1 1 0	52 50 12 19 14 7 5	0 0 0 0 1 1 1 0	130 121 140 89 142 98 50	0 3 8 1 1 1 1	4 6 1 2 2 5 6	35 53 31 37 37 17 28	137 119 142 145 165 187 214	0 0 0 1 0 0 0	5 2 1 0 1 3 1	44 54 49 55 26 38 33	84 65 36 36 47 45 57	491 473 421 385 437 403 395
4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM	0 3 1 0 1	5 7 6 0 3	0 0 2 0	50 58 52 66 58	1 3 1 1	8 3 14 7	20 22 20 21 13	214 240 209 218 135	0 0 0 0	0 0 0 2	33 37 32 33 18	33 26 24 36	393 409 352 379 274
5:45 PM 6:00 PM 6:15 PM 6:30 PM 6:45 PM	0	1	1	45	2	4	12	111	0	1	34	28	239
TOTAL VOLUMES =	NL 8	NT 176	NR 5	SL 1049	ST 23	SR 62	EL 326	ET 2022	ER 1	WL 16	WT 453	WR 517	TOTAL 4658
PM Pe	eak Hr B	egins at:	300	PM									
PEAK VOLUMES =	1	133	0	480	12	13	156	543	1	8	202	221	1770
PEAK HR. FACTOR:		0.644 0.847					0.956				0.810		0.901
CONTROL:	Signali	zed											

CONTROL: Signalized

	n: 29th St/I- LANES:	0	1	0	City: 0	San 0	0	2	1	0	0	Tuesday 1	1
	[NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WF
:00	CARS	0	5	0				41	9	1	0	14	7
	2-axle							1					
	3-axle							1					
	4-axle							1					
	5-axle +							3					3
7:15	CARS	0	1	0				51	5	3	1	9	6
	2-axle							2					1
	3-axle							3					2
	4-axle							1					
	5-axle +							2					
												47	10
	CARS	1	6	3				35	8	4	1	17	10
	2-axle							4					2
	3-axle							2					
	4-axle		1					1					
	5-axle +		1					5					
7:45	CARS	1	1	1				39	5	1	3	13	6
	2-axle		1					2	2			2	
	3-axle							2				3	
								2	1			5	
	4-axle								1				
	5-axle +							2					
ſ	CARS	0	0	1				55	10	2	1	13	4
	2-axle							6				2	1
	3-axle												
	4-axle												
	5-axle +							3					
8:15	CARS	0	2	3				50	6	2	1	5	7
	2-axle							4	1				
	3-axle							1					
	4-axle							1					
	5-axle +							1					
8:30	CARS	2	4	1				45	6	0	1	9	7
	2-axle		1					3		1		1	
	3-axle							1					1
	4-axle												
	5-axle +							1					
8:45	CARS	2	1	1				49	4	1	0	5	5
									4		U	0	
	2-axle	1		1	-			7				1	1
	3-axle			}				2	ł			1	1
	4-axle												
	5-axle +							2					
1	CARS	2	20	10	0		OVEMENT TO		ED	14	0	OF	F.0
	CARS 2-axle	6 1	20 2	10 1	0	0	0	365 29	53 3	14 1	8	85 5	52 5
	3-axle 4-axle	0	0 1	0	0	0	0 0	12 4	0 1	0	0	3 0	4
	4-axie 5-axle +	0	1	0	0	0	0	4	0	0	0	0	3
	TOTALS	7	24	11	0	0	0	429	57	15	8	93	64

 11 KOL: 3-Way Stop (N/2/W)
 2
 11
 5
 0
 0
 215
 31
 10
 6
 59
 32

 0.375
 0.000
 0.842
 0.808

catior	LANES:	5 SB On-Ra 0	amp & Bosto 1	n ave 0	City: 0	San 0	Diego 0	Date: 2	12/2/08 1	0	Day: 0	Tuesday	1
	LAINES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	1 WT	WF
16:00	CARS	3	13	1				145	11	4	1	11	18
	2-axle			2				3					
	3-axle							3					
	4-axle												
	5-axle +							5				ļ!	
16:15	CARS	1	10	3				129	14	2	1	14	7
	2-axle							5					1
	3-axle	1						1					1
	4-axle												
	5-axle +							1					
16:30	CARS	1	19	3				126	19	4	1	6	13
		1	17	3					17	4		0	
	2-axle							3				ļ	1
	3-axle							2					
	4-axle												
l l	5-axle +							1					
	5-axie +							1					
16:45	CARS	1	8	3				98	13	6	2	11	13
	2-axle							2					
	3-axle												
												łł	
	4-axle											ļ	
	5-axle +		1					1				<u> </u>	
17:00	CARS	0	18	6				120	22	5	1	8	20
								1					
	2-axle												
	3-axle							1	1			ļ!	
	4-axle											ļ	
	5-axle +		1					2					
									10		<u>^</u>	10	
17:15	CARS	0	8	1				138	12	1	2	10	16
	2-axle									1			1
	3-axle							2					
	4-axle												
	5-axle +							1				'	
17:30	CARS	3	9	4				114	14	1	0	18	18
	2-axle												
								1					
	3-axle							1					
	4-axle									1		ļ!	
	5-axle +							1					
17:45	CARS	0	5	1				101	13	2	0	8	16
Ī													
	2-axle						1	ł		1		ł – – –	
	3-axle							 				├ ────	
	4-axle												
	5-axle +							1					
L			1										
Г	CARS	9	90	22	0	0 MC	OVEMENT TO 0	971	118	25	8	86	12
	2-axle	0	0	2	0	0	0	14	0	2	0	0	3
	3-axle 4-axle	1	0	0	0	0	0	10 0	1	0 1	0	0	1
	5-axle +	0	2	0	0	0	0	13	0	0	0	0	0
	TOTALS	10	92	24	0	0	0	1008	119	28	8	86	12

PM Peak Hr Begii 1600 PM

CONTROL: 3-Wa	y Stop (N/E	/W)											
	7	51	12	0	0	0	525	57	16	5	42	54	i
		0.761			0.000			0.874			0.842		

Satio	n: 29th St/I- LANES:	0	1	0	City: 0	0	Diego 0	Date: 2	12/3/08 1	0	0	Wednesday	1
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
:00	CARS	2	4	0				48	6	1	1	10	6
		-										10	
	2-axle		1			1		2	[1
	3-axle							1					
	4-axle		2										
	5-axle +							3					
:15	CARS	1	4	0				65	12	0	3	9	15
		•											
	2-axle							6				1	1
	3-axle												
	4-axle							1					
	5-axle +		1					3					
:30	CARS	1	4	0				45	10	2	1	20	6
		·		Ū						2		20	
	2-axle		1					2	2				2
	3-axle		1					2					1
	4-axle							1					
	5-axle +		3					2					
·45	CARS	1	3	3				37	10	1	1	11	11
		·		5					10				
	2-axle		1					4				1	
	3-axle							1					
	4-axle							1	1				
	5-axle +		1					3					
B:00	CARS	2	9	2				51	10	1	1	12	10
Ī		-											
	2-axle							3	3			1	1
	3-axle												1
	4-axle												
	5-axle +		1					5					
:15	CARS	1	3	0				44	6	4	0	9	4
-								3				1	
	2-axle											1	
	3-axle							5					
	4-axle											1	
	5-axle +							5				1	
:30	CARS	2	3	0				48	6	2	0	11	8
	2-axle		1					6				1	
	3-axle							4				1	
	4-axle							2					
	5-axle +		2					5					
:45	CARS	1	4	0				56	3	1	2	14	5
	2-axle							3				1	
								3					
	3-axle			ł		<u> </u>	1	ł	}			2	
	4-axle												
	5-axle +		1					2					
						M	OVEMENT TO	DTALS					
	CARS	11	34	5	0	0	0	394	63	12	9	96	65
	2-axle 3-axle	0	4	0	0	0	0	29 13	5 0	0	0	6	5
	4-axle	0	2	0	0	0	0	5	1	0	0	1	0
	5-axle +	0	9	0	0	0	0	28	0	0	0	1	0
	TOTALS	11	50	5	0	0	0	469	69	12	9	107	72 WR
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	

CONTROL: 3-Way Stop (N/E/W) 5 29 5 0 0 0 232 48 4 6 55 48 0.696 0.000 0.816 0.908

	n: 29th St/I- LANES:	0	. 1	0	City: 0	0	Diego 0	2	1	0	0	Wednesday 1	1
	2.1120	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WF
6:00	CARS	0	10	1				130	19	1	0	16	20
	2-axle		1					3	1			1	1
	3-axle												
	4-axle												
	5-axle +							1					
16:15	Ĩ	1	11	2					1/	2	2	10	17
		1	11	2				100	16	2	2	10	17
	2-axle							2	1				
	3-axle							2					
	4-axle												
	5-axle +							3					
16:30	CARS	0	8	7				120	12	4	1	10	13
	2-axle	2	1					4					
	3-axle												
	4-axle												
	5-axle +							2					
16:45	CARS	2	14	3				92	12	5	1	13	11
	2-axle							3					
	3-axle							2					
	4-axle												
	5-axle +		1					1					
		0	6	3				113	16	0	2	12	9
17:00		0	0	3				113	10	0	2	12	9
	2-axle												
	3-axle							1					
	4-axle							1					
	5-axle +		1					4					
17:15	CARS	1	5	0				113	12	1	2	11	13
	2-axle							3					1
	3-axle							2					
	4-axle												
	5-axle +			1				1					
17:30	CARS	2	5	2				87	17	3	0	15	15
	2-axle							3					
	3-axle							4					
	4-axle		1					1					1
	5-axle +		1					3					
17:45		1	3	1				81	12	4	1	5	13
	2-axle							2					13
	3-axle							2				†	
								-					
	4-axle	1						2					
	5-axle +	1	I			<u> </u>		3		I			
I	CARS	7	62	19	0	0 M	OVEMENT TO 0	TALS 836	116	20	9	92	111
	2-axle 3-axle	2	2 0	0	0	0	0	20 13	2 0	0	0	1 0	2
	4-axle	0	1	0	0	0	0	2	0	0	0	0	1
	5-axle + TOTALS	1 10	3 68	1 20	0	0	0	18 889	0 118	0 20	0	0 93	0

CONTROL: 3-Way Stop (N/E/W)

ONTROL. J-Wa	y 5top (11/L/1	v)											
	5	46	13	0	0	0	465	61	12	4	50	62	l
		0.000			0.000			0.0/0			0.7/0		
		0.800			0.000			0.868			0.763		1

NDS

National Data & Surveying Services

TMC Summary of 32nd St/Main St

SOUTHBOUND APPROACH LANES Ν 0 1 1 32nd St TOTAL 162 39 144 123 Μ 27 61 NOON 0 0 0 AM 12 39 83 Main St Main St J) WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON AM TOTAL AM PM NOON PM 74 0 33 9 24 0 98 172 0 1 2 2 241 565 317 558 103 0 462 0 314 0 207 521 1 294 158 0 136 1 183 307 112 ₽ NOON 0 0 0 TURNING MOVEMENT COUNT 110 26 AΜ 50 32nd St / Main St (Intersection Name) TOTAL 32nd St 293 162 333 1 1 1 Thursday 6/12/08 Date Day NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	645 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	300 PM

Project #: 08-4148-038

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	32nd St	t			DATE:	06/12/2	2008		LOC	ATION:	City of	San Die	Jo
E-W STREET:	Main St				DAY:	THURS	DAY		PRO	JECT#	08-41	48-038	
	NC	RTHBO	JND	SC	OUTHBO	UND	E	ASTBOU	IND	V	/ESTBOL	IND	
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 0	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:15 AM	14 20 34 33 18 29 30 24 27 20 17 14	8 11 6 12 11 13 14 8 9 10 10 14	5 6 5 7 8 4 7 16 10 21 18 23	5 8 11 12 5 10 11 16 16 16 18	17 14 13 27 23 19 14 12 11 11 9 11	3 0 1 2 3 6 2 6 1 1 3	1 0 3 0 3 4 0 1 1 2	23 28 24 30 31 19 23 26 32 31 30 27	30 36 39 44 46 33 35 30 18 36 18 16	42 63 64 78 75 90 71 39 53 53 69 70	85 109 91 72 86 88 66 62 58 42 54	11 18 11 14 21 18 21 16 15 18 11 12	244 314 299 332 319 322 322 254 259 276 242 264
TOTAL VOLUMES =	NL 280	NT 126	NR 130	SL 140	ST 181	SR 29	EL 19	ET 324	ER 381	WL 767	WT 884	WR 186	TOTAL 3447
AM Pe	eak Hr Be	gins at:	645	AM									
PEAK Volumes =	110	50	26	39	83	12	9	103	158	314	317	74	1295
PEAK HR. FACTOR:		0.894			0.838			0.877			0.909		0.975
CONTROL:	Signaliz	ed											

National Data & Surveying Services

N-S STREET:	32nd S	t			DATE:	06/12/2	2008		LOC	ATION:	City of	San Dieę	Jo
E-W STREET:	Main S	t			DAY:	THURS	DAY		PRO	JECT#	08-41	48-038	
	NC	ORTHBO		SC	OUTHBO		F	ASTBOU		M	/ESTBOL	IND	
	N.C.		UND	50		OND	L						
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL O	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:30 PM 6:30 PM	42 56 39 46 48 26 23 34 25 36 30 20	32 30 28 22 33 32 13 15 13 23 21 10	79 83 72 73 99 78 79 77 77 70 59 51	33 35 23 32 29 36 26 37 29 24 24 24 17	11 18 18 14 12 16 10 15 7 15 14 9	4 6 7 10 3 6 4 9 3 3 5	3 9 3 9 6 7 6 7 11 8 4 3	122 143 96 101 114 99 102 80 70 65 38 48	36 31 30 39 49 41 46 28 30 19 42 30	58 53 57 39 42 53 69 46 36 42 38 48	64 71 69 37 43 39 35 36 27 27 38 28	26 20 27 25 16 26 18 25 25 17 11 13	510 555 469 447 494 459 433 404 359 349 322 282
TOTAL VOLUMES =	NL 425	NT 272	NR 897	SL 345	ST 159	SR 66	EL 76	ET 1078	ER 421	WL 581	WT 514	WR 249	TOTAL 5083
PM Pe	1 Peak Hr Begins at: 300 PM										•		
PEAK Volumes =	183	112	307	123	61	27	24	462	136	207	241	98	1981
PEAK HR. FACTOR:	0.891				0.894			0.850			0.892		0.892
CONTROL:	Signaliz	zed											

Project # 08-4335-009 Location: 32nd St & Norman Scott Rd San Diego 12/3/08 Day: Wednesday City: Date: LANES: 1.5 0.5 0.5 0.5 NL NT NR SL ST SR EL ΕT ER WL WT WR 7:00 CARS 2-axle 3-axle 4-axle 5-axle + 7:15 CARS 2-axle 3-axle 4-axle 5-axle + 7:30 CARS 2-axle 3-axle 4-axle 5-axle + 7:45 CARS 2-axle 3-axle 4-axle 5-axle + 8:00 CARS 2-axle 3-axle 4-axle 5-axle + 8:15 CARS 2-axle 3-axle 4-axle

	5-axle +												
8:30	CARS	24	41	43	32	42	1	13	2	1	40	6	13
	2-axle		4	2	1	1	2		2	2			7
	3-axle			1									
	4-axle						1						
	5-axle +		1										
8:45	CARS	22	43	26	22	34	3	17	3	4	48	7	18
	2-axle		2	5	4	3	1		1	6	3		2
	3-axle												
	4-axle												
	5-axle +												
						MC	VEMENT TO					I.	
	CARS	160	331	344	289	288	21	88	43	42	464	32	175
	2-axle	2	15	21	9	18	3	2	3	8	15	1	14
	3-axle	0	5	1	0	6	0	0	0	0	0	0	0
	4-axle	0	0	0	0	0	1	0	0	0	3	1	0
	5-axle +	0	1	0	2	5	0	0	0	0	0	0	0
	TOTALS	162	352	366	300	317	25	90	46	50	482	34	189
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
M Pea	ak Hr Begir	700	AM										
ONTE	ROL: Signali	zed											
		78	164	216	191	161	12	36	29	24	244	11	112
		0.895				0.791			0.927			0.850	

Project # 08-4335-009 San Diego Location: 32nd St & Norman Scott Rd 12/3/08 Day: Wednesday City: Date: LANES: 1.5 0.5 0.5 0.5 NL NT NR SL ST SR EL ΕT ER WL WT WR 16:00 CARS 2-axle 3-axle 4-axle 5-axle + 16:15 CARS 2-axle 3-axle 4-axle 5-axle + 16:30 CARS 2-axle 3-axle 4-axle 5-axle + 16:45 CARS 2-axle 3-axle 4-axle 5-axle + 17:00 CARS 2-axle 3-axle 4-axle 5-axle + 17:15 CARS 2-axle 3-axle 4-axle

	5-axle +												
17:30		20	48	41	53	35	5	21	10	9	18	7	41
	2-axle		1										
	3-axle					1							
	4-axle												
	5-axle +												
17:45	CARS	24	36	33	37	45	6	26	9	1	26	3	33
	2-axle				1	1							
	3-axle												
	4-axle												
	5-axle +					1							
						МС	VEMENT TO	TALS					
	CARS	213	481	346	451	405	44	138	72	64	209	63	254
	2-axle	0	2	0	5	8	2	3	0	2	1	0	2
	3-axle	0	0	0	0	1	0	0	0	0	0	0	0
	4-axle	0	0	0	0	0	0	0	0	0	0	0	0
	5-axle +	0	0	0	0	1	0	0	0	0	0	0	0
	TOTALS	213 NL	483 NT	346 NR	456 <i>SL</i>	415 <i>ST</i>	46 SR	141 <i>EL</i>	72 ET	66 ER	210 WL	63 WT	256 WR
		IVL	/v /	NR	SL	51	SR	EL	EI	ER	VVL	VV I	WR
PM Pea	ak Hr Begir	1600	PM										
CONTR	ROL: Signa	lized											
	5	112	291	204	242	231	29	63	41	37	120	41	127
			0.872			0.872			0.904			0.828	
		-			-			-			-		-

See leg	ends at the	e bottom of	the page		Proj	ect # 08-43	35-009 5th	Leg					
Locatio			lvd & Norma				Diego		12/3/08			Wednesday	
	LANES:	1	3	0	0	2	0	1	0.5	0.5	0	1	1
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00	CARS	2	11		4	131	9	1	6	1	0	0	4
	2-axle		2		3								1
	3-axle												
	4-axle												
	5-axle +		1										
7:15	CARS	0	14		1	119	3	3	5	1	0	0	2
	2-axle					2	2			1			
	3-axle												
	4-axle												1
	5-axle +	1											
7:30	CARS	0	18		0	96	4	2	4	1	0	1	10
	2-axle		2										1
	3-axle												
	4-axle					1			1				1
	5-axle +		1										
7:45	CARS	1	16		4	71	5	3	3	0	0	1	26
	2-axle					3							1
	3-axle												
	4-axle					1							
	5-axle +												
8:00	CARS	0	18		1	53	1	2	2	2	0	0	8
	2-axle		5			4							
	3-axle					1							
	4-axle		1						1				1
	5-axle +		1		2								
8:15	CARS	1	22		0	56	1	6	1	1	0	2	15
	2-axle					2		1	1				1
	3-axle												
	5-axle +		1										

8:30	CARS	1	20	1	11	8	2	3	0	0	2	11
	2-axle		5		3		1					1
	3-axle		1		3							
	4-axle				1							
	5-axle +		1									
8:45		0	12	0	50	4	4	3	3	0	1	10
	2-axle		2	4			1					2
	3-axle		1	1								
	4-axle											
	5-axle +		1									

MOVEMENT TOTALS

CARS	5	131	0	11	587	35	23	27	9	0	7	86
2-axle	0	16	0	7	14	2	3	1	1	0	0	7
3-axle	0	2	0	1	4	0	0	0	0	0	0	0
4-axle	0	1	0	0	3	0	0	2	0	0	0	3
5-axle +	1	6	0	2	0	0	0	0	0	0	0	0
TOTALS	6	156	0	21	608	37	26	30	10	0	7	96
-	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR

PM Peak Hr Begi 700 AM

CONTROL: Signalized

oon in toel orgina	11200											
	4	65	0	12	424	23	9	19	4	0	2	47
		0.821			0.781			0.800			0.438	
		0.821			0.781			0.800			0.438	

LEGENDS: NL = Cars going from 32nd St NB making u-turn onto 32nd St SB

NT = Cars going from 32nd St NB onto Wabash Blvd NB

SL = Cars going from Wabash Blvd SB turning left onto Norman Scott Rd WB

ST = Cars going from Wabash Blvd SB onto 32nd St SB

SR = Cars going from Wabash Blvd SB turning right onto Norman Scott Rd EB

EL = Cars going from Norman Scott Rd EB turning left onto Wabash Blvd NB

ET = Cars going from 32nd St SB making hard left turn onto Wabash Blvd NB

ER = Cars going from Wabash Blvd SB making u-turn onto Wabash Blvd NB

WL = Cars going from Norman Scott Rd WB making u-turn onto Norman Scott Rd EB

WT = Cars going from Wabash Blvd SB making hard right turn onto 32nd St NB

WR = Cars going from Norman Scott Rd WB turning right onto Wabash Blvd NB

See leg	ends at the	e bottom of	the page		Proj	ject # 08-43	35-009 5th	Leg					
Location				in Scott Rd			Diego		12/3/08		-	Wednesday	
	LANES:	1	3	0	0	2	0	1	0.5	0.5	0	1	1
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
16:00	CARS	1	119		0	9	0	8	7	1	0	11	43
	2-axle					1		2	1			2	4
	3-axle												
	4-axle							1					1
	5-axle +												
16:15	CARS	1	104		0	19	6	24	4	1	2	12	42
	2-axle		2					3		1		1	5
	3-axle												
	4-axle								1				2
	5-axle +												
16:30	CARS	0	108		1	29	10	9	4	6	0	6	38
	2-axle						1	3	2			2	3
	3-axle												
	4-axle												1
	5-axle +												
16:45	CARS	2	87		1	27	9	19	4	1	1	13	29
	2-axle							2	1				3
	3-axle												
	4-axle											1	1
	5-axle +												
17:00	CARS	2	73		0	34	18	16	5	1	0	10	33
	2-axle		1					3	1			1	3
	3-axle												
	4-axle		1										2
	5-axle +												
17:15	CARS	0	70		0	37	8	6	5	3	0	16	27
	2-axle		2					3	2			2	4
	3-axle												
	4-axle								1				
	5-axle +												

17:30	CARS	0	78		0	70	6	7	3	1	2	5	22
	2-axle						1	2	1			1	2
	3-axle												
	4-axle								1				
	5-axle +												
17:45		1	51		0	74	13	11	3	1	0	13	21
	2-axle							1	1			2	3
	3-axle												
	4-axle												1
	5-axle +												
		•			•	MC	VEMENT TO	TALS					
	CARS	7	690	0	2	299	70	100	35	15	5	86	255
	2-axle	0	5	0	0	1	2	19	9	1	0	11	27
	3-axle	0	0	0	0	0	0	0	0	0	0	0	0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
TOTALS	7	696	0	2	300	72	120	47	16	5	98	290
5-axle +	0	0	0	0	0	0	0	0	0	0	0	0
4-axle	0	1	0	0	0	0	1	3	0	0	1	8
3-axle	0	0	0	0	0	0	0	0	0	0	0	0
2-axle	0	5	0	0		2	19	9	1	0	11	27

PM Peak Hr Begi 1600 PM

CONTROL: Signalized

mzcu											
4	420	0	2	85	26	71	24	10	3	48	172
	0.883			0.689			0.772			0.871	
	4	4 420	4 420 0	4 420 0 2	4 420 0 2 85	4 420 0 2 85 26	4 420 0 2 85 26 71	4 420 0 2 85 26 71 24	4 420 0 2 85 26 71 24 10	4 420 0 2 85 26 71 24 10 3	4 420 0 2 85 26 71 24 10 3 48

LEGENDS: NL = Cars going from 32nd St NB making u-turn onto 32nd St SB

NT = Cars going from 32nd St NB onto Wabash Blvd NB

SL = Cars going from Wabash Blvd SB turning left onto Norman Scott Rd WB

ST = Cars going from Wabash Blvd SB onto 32nd St SB

SR = Cars going from Wabash Blvd SB turning right onto Norman Scott Rd EB

EL = Cars going from Norman Scott Rd EB turning left onto Wabash Blvd NB

ET = Cars going from 32nd St SB making hard left turn onto Wabash Blvd NB

ER = Cars going from Wabash Blvd SB making u-turn onto Wabash Blvd NB

WL = Cars going from Norman Scott Rd WB making u-turn onto Norman Scott Rd EB

WT = Cars going from Wabash Blvd SB making hard right turn onto 32nd St NB

 $\mathsf{WR} = \mathsf{Cars} \ \mathsf{going} \ \mathsf{from} \ \mathsf{Norman} \ \mathsf{Scott} \ \mathsf{Rd} \ \mathsf{WB} \ \mathsf{turning} \ \mathsf{right} \ \mathsf{onto} \ \mathsf{Wabash} \ \mathsf{Blvd} \ \mathsf{NB}$

Project # 08-4335-009 Location: 32nd St & Norman Scott Rd San Diego 12/4/08 Day: Thursday City: Date: LANES: 1.5 0.5 0.5 0.5 NL NT NR SL ST SR EL ΕT ER WL WT WR 7:00 CARS 2-axle 3-axle 4-axle 5-axle + 7:15 CARS 2-axle 3-axle 4-axle 5-axle + 7:30 CARS 2-axle 3-axle 4-axle 5-axle + 7:45 CARS 2-axle 3-axle 4-axle 5-axle + 8:00 CARS 2-axle 3-axle 4-axle 5-axle + 8:15 CARS 2-axle 3-axle 4-axle

	5-axle +												
B:30	CARS	13	42	39	14	34	3	9	9	13	31	8	11
	2-axle			2		3					2		1
	2 avia												
	3-axle												
	4-axle												
	5-axle +												
45	CARS	17	50	44	21	30	4	14	5	15	36	8	18
45	CARS	17	50	44	21	30	4	14	5	10	30	0	10
	2-axle			1									
	3-axle					3							
	4 avia												
	4-axle												
	5-axle +			1		1							
			•										
							VEMENT TO				-		
	CARS	90	306	400	246	264	21	80	61	115	295	52	170
	2-axle	0	19	6	0	10	0	1	1	0	5	0	1
	3-axle	0	1	0	0	5	0	0	0	0	0	0	1
	4-axle 5-axle +	0	3	0	0	2	0	0	0	0	0	0	1 0
	TOTALS	90	330	407	246	282	21	81	62	115	300	53	173
	. 917/20	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Ρ.													
Pea	ak Hr Begir	700	AM										
NTF	ROL: Signali				_			_			_		
		37	153	245	176	154	10	31	42	65	157	24	99
			0.938			0.810			0.885			0.921	
	I		0.750		8	0.010		8	0.000			0.721	

Project # 08-4335-009 San Diego Location: 32nd St & Norman Scott Rd 12/4/08 Day: Thursday City: Date: LANES: 1.5 0.5 0.5 0.5 NL NT NR SL ST SR EL ΕT ER WL WT WR 16:00 CARS 2-axle 3-axle 4-axle 5-axle + 16:15 CARS 2-axle 3-axle 4-axle 5-axle + 16:30 CARS 2-axle 3-axle 4-axle 5-axle + 16:45 CARS 2-axle 3-axle 4-axle 5-axle + 17:00 CARS 2-axle 3-axle 4-axle 5-axle + 17:15 CARS 2-axle 3-axle 4-axle
	5-axle +												
17:30		19	39	36	32	36	10	24	24	15	22	8	37
17.00		,	0,	00	02	00	10	1	21	10		0	07
	2-axle												
	3-axle												
	4-axle												
	5-axle +												
17:45	CARS	27	42	47	52	48	8	18	28	15	28	6	38
	2-axle			1									
	3-axle												
	4-axle												
	5-axle +												
						MC	VEMENT TO	TALS					
	CARS	206	429	350	311	416	49	150	110	145	178	49	263
	2-axle	1	3	1	0	3	0	0	0	0	0	0	0
	3-axle	0	2	0	0	0	0	0	0	0	0	0	0
	4-axle	0	0	0	0	0	0	0	0	0	0	0	0
	5-axle +	0	5	0	0	0	1	0	0	0	1	0	0
	TOTALS	207	439	351	311	419	50	150	110	145	179	49	263
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
PM Pea	ak Hr Begir	1600	PM										
CONTR	ROL: Signal	lized											
	. 31.4	98	264	190	147	237	20	70	37	71	90	26	134
			0.914			0.835			0.824			0.822	

		e bottom of				ect # 08-43	35-009 5th	Leg					
Locatio			lvd & Norma				Diego		12/4/08			Thursday	
	LANES:	1	3	0	0	2	0	1	0.5	0.5	0	1	1
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00	CARS	1	14		0	126	15	0	6	3	0	1	5
	2-axle					1		1					1
	3-axle												
	4-axle								1				1
	5-axle +		1			1							
7:15	CARS	0	10		2	121	16	2	4	2	1	0	2
	2-axle					3		2					1
	3-axle												
	4-axle								1				
	5-axle +												
7:30	CARS	0	23		1	94	14	2	5	3	0	2	6
	2-axle					3			1				2
	3-axle					1							
	4-axle												
	5-axle +												
7:45	CARS	1	15		0	67	12	2	1	1	0	1	12
	2-axle					2			1				4
	3-axle					1							
	4-axle					1							1
	5-axle +												
8:00	CARS	2	19		2	65	8	2	1	1	0	0	11
	2-axle							1					3
	3-axle												
	4-axle								1				
	5-axle +												
8:15	CARS	2	21		2	56	9	4	1	2	0	2	12
	2-axle					1		2					2
	3-axle		1			1					1		
	4-axle								1				2
	5-axle +		1										

NATIONAL DATA AND SURVEYING SERVICES Axle Count

8:30	CARS	1	22		0	47	7	1	1	0	0	3	5		
	2-axle		3			4	1	1					1		
	3-axle					1									
	4-axle								1				2		
									I				Ζ		
	5-axle +														
8:45	CARS	0	18		2	15	11	3	2	2	0	2	9		
	2-axle					4		1				1			
	3-axle					2									
	4-axle												2		
						2							2		
	5-axle +					3									
	MOVEMENT TOTALS CARS 7 142 0 9 591 92 16 21 14 1 11 62														
	CARS 7 142 0 9 591 92 16 21 14 1 11 62														
	2-axle	0	3	0	0	18	1	8	2	0	0	1	14		
	3-axle	0	1	0	0	6	0	0	0	0	1	0	0		
	4-axle	0	0	0	0	1	0	0	5	0	0	0	8		
	5-axle +	0	2	0	0	4	0	0	0	0	0	0	0		
	TOTALS	7 NL	148 <i>NT</i>	0 NR	9 SL	620 ST	93 SR	24 <i>EL</i>	28 <i>ET</i>	14 <i>ER</i>	2 WL	12 WT	84 WR		
			IV 1	NR	SL	31	SK	EL	EI	ER	VVL	VV I	WK		
PM Pe	ak Hr Beg	i 700	AM												
CONT	ROL: Sign	alized													
		2	63	0	3	421	57	9	20	9	1	4	35		
			0.707			0.841			0.864			0.556			
LEGEN	IDS:	NT = Cars G $SL = Cars G$ $ST = Cars G$ $SR = Cars G$ $EL = Cars G$ $ET = Cars G$ $WL = Cars G$ $WL = Cars$	going from 32 going from 33 going from W going from W going from W going from M going from M going from M going from M going from M	2nd St NB or abash Blvd S (abash Blvd S (abash Blvd S orman Scott 2nd St SB ma (abash Blvd S lorman Scott Vabash Blvd	nto Wabash SB turning le SB onto 32n SB turning ri Rd EB turnin aking hard le SB making u SB making l	Blvd NB ft onto Norn d St SB ght onto No ng left onto N eft turn onto V turn onto V king u-turn c nard right tu	nan Scott Rd rman Scott F Wabash Blvd Wabash Blv Vabash Blvd onto Norman rn onto 32nd	Rd EB NB d NB NB Scott Rd EB d St NB							

		e bottom of				ject # 08-43		Leg					
Locatio				n Scott Rd	-		Diego		12/4/08			Thursday	
	LANES:	1	3	0	0	2	0	1	0.5	0.5	0	1	1
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
16:00	CARS	3	124		2	22	17	12	4	0	0	13	55
	2-axle					2		2				3	5
	3-axle												
	4-axle												
	5-axle +												
16:15	CARS	0	84		0	23	12	22	4	8	0	25	43
	2-axle		2			3		2				4	3
	3-axle												
	4-axle												
	5-axle +												
16:30	CARS	0	105		0	21	8	12	5	6	0	11	45
	2-axle					3		1				1	4
	3-axle		2										
	4-axle												1
	5-axle +												
16:45	CARS	4	67		2	21	3	27	4	3	0	16	26
	2-axle											2	3
	3-axle					2		1					
	4-axle												1
	5-axle +		1										
17:00	CARS	1	82		0	29	10	28	4	1	0	9	31
	2-axle											1	2
	3-axle					1							
	4-axle					1						1	
	5-axle +												
17:15	CARS	2	69		0	21	13	8	5	6	0	10	35
	2-axle		1			1		1				2	3
	3-axle					1							
	4-axle							1					1
	5-axle +												

NATIONAL DATA AND SURVEYING SERVICES Axle Count

		-					-		-	-		-				
17:30	CARS	1	62		2	33	9	9	4	1	0	2	18			
	2-axle					1		1				1	2			
	3-axle															
	2-9716															
	4-axle												1			
	5-axle +		1			3										
17:45	CARS	1	58		0	25	10	8	5	1	0	12	25			
	2-axle					1		1				1	2			
	3-axle		1													
	4-axle								1				1			
	5-axle +					1										
	MOVEMENT TOTALS															
	CARS	12 651 0 6 195 82 126 35 26 0 98 278														
	2-axle	0	3	0	0	11	0	8	0	0	0	15	24			
	3-axle	0	3	0	0	4	0	1	0	0	0	0	0			
	4-axle	0	0	0	0	1	0	1	1	0	0	1	5			
	5-axle +	0	2	0	0	4	0	0	0	0	0	0	0			
	TOTALS	12	659	0	6	215	82	136	36	26	0	114	307			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR			
PM Pea	ak Hr Begi	i 1600	PM													
CONTE	ROL: Signa	alized			_			_			_		_			
		7	385	0	4	97	40	79	17	17	0	75	186			
			0.772			0.820			0.785			0.859				
LEGEN	IDS:	NT = Cars g $SL = Cars g$ $ST = Cars g$ $SR = Cars g$ $EL = Cars g$ $ET = Cars g$	going from 32 going from 32 going from W going from W going from W going from Na going from 32	2nd St NB or abash Blvd S abash Blvd S abash Blvd S orman Scott 2nd St SB ma	nto Wabash SB turning le SB onto 32nd SB turning ri Rd EB turnir aking hard le	Blvd NB ft onto Norn d St SB ght onto No ng left onto N eft turn onto	nan Scott Rd rman Scott F Wabash Blvd Wabash Blv	Rd EB NB d NB								

ER = Cars going from Wabash Blvd SB making u-turn onto Wabash Blvd NB WL = Cars going from Norman Scott Rd WB making u-turn onto Norman Scott Rd EB WT = Cars going from Wabash Blvd SB making hard right turn onto 32nd St NB WR = Cars going from Norman Scott Rd WB turning right onto Wabash Blvd NB

National Data & Surveying Services

N-S STREET:	32nd S	t			DATE:	06/12/2	2008		LOC	ATION:	City of	San Die	go
E-W STREET:	Harbor	Dr			DAY:	THURS	DAY		PRO	JECT#	08-4	148-040	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	V	VESTBOL	JND	
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:00 AM 11:45 AM	2 10 9 4 5 6 5 7 15 13	7 16 22 24 30 21 30 26 33 44 34 52	3 6 0 6 7 6 3 7 9 3 8	16 61 30 17 25 26 21 33 25 22 35 21	54 156 148 164 180 227 168 127 109 79 77 79	16 34 28 41 22 43 30 22 29 57 36 19	9 32 16 23 20 30 21 22 18 24 11 19	53 53 41 31 32 44 34 41 37 46 43 40	8 19 20 23 24 32 20 21 23 19 16 15	16 38 36 43 53 81 30 27 15 3 6 8	50 71 73 70 78 95 77 44 52 57 31	20 45 52 80 59 72 65 48 45 58 48 57	254 538 481 523 526 667 525 453 390 420 381 362
TOTAL VOLUMES =	NL 87	NT 339	NR 61	SL 332	ST 1568	SR 377	EL 245	ET 495	ER 240	WL 356	WT 771	WR 649	TOTAL 5520
AM Pe	eak Hr Be	egins at:	645	AM									
PEAK Volumes =	20	105	19	89	739	136	94	141	99	207	316	276	2241
PEAK HR. FACTOR:		0.878			0.814			0.788			0.865		0.840
CONTROL	Signali	zed											

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	32nd S	it			DATE:	06/12/	2008		LOC	ATION:	City of	San Dieg	до
E-W STREET:	Harbor	Dr			DAY:	THURS	DAY		PRO.	JECT#	08-4	148-040	
	NC	ORTHBO	UND	SC	OUTHBO	UND	E	ASTBOU	ND	W	/ESTBO	UND	
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
1:00 PM 1:15 PM 1:30 PM 1:45 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:30 PM 6:15 PM	17 11 13 7 19 9 12 15 16 22 12 9	149 123 109 106 125 71 77 81 68 50 51 48	32 23 23 19 29 16 10 15 11 13 13 7	55 61 66 37 52 70 84 53 57 60 72 45	25 61 61 53 59 45 77 40 47 60 54 45	23 63 55 39 34 21 25 14 27 18 15 12	39 77 94 29 62 61 41 44 47 41 29 16	173 255 168 200 167 177 132 196 170 166 148 120	4 10 21 29 12 10 15 11 12 15 17 25	11 5 6 4 2 9 2 3 4 10 2 6	111 68 42 46 35 32 28 28 28 24 36 26 19	97 76 91 57 58 55 55 60 38 65 34 48	736 833 749 626 654 576 558 560 521 556 473 400
TOTAL VOLUMES =	NL 162	NT 1058	NR 211	SL 712	ST 627	SR 346	EL 580	ET 2072	ER 181	WL 64	WT 495	WR 734	TOTAL 7242
PM Pe	300	PM											
PEAK Volumes =	48	487	97	219	200	180	239	796	64	26	267	321	2944
PEAK HR. FACTOR:		0.798			0.809		0.803		0.701		0.884		
CONTROL:													

National Data & Surveying Services

TMC Summary of I-15 Ramps/Main St

SOUTHBOUND APPROACH LANES Ν 1 0 1 I-15 Ramps TOTAL 228 394 126 120 Μ NOON 0 0 0 268 108 AM 0 Main St Main St **[**] WESTBOUND APPROACH LANES EASTBOUND APPROACH LANES TOTAL NOON TOTAL AM PM AM NOON PM 290 107 154 1 254 0 261 36 0 1 2 2 718 390 275 139 579 665 0 0 0 0 0 0 0 0 0 0 0 0 ₽ 0 0 0 NOON 0 0 0 TURNING MOVEMENT COUNT AΜ 0 0 0 I-15 Ramps / Main St (Intersection Name) I-15 Ramps TOTAL 0 0 0 0 0 0 Thursday 6/12/08 Date Day NORTHBOUND APPROACH LANES COUNT PERIODS 6:00 AM 9:00 AM am noon 3:00 PM 6:00 PM pm

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

Project #: 08-4148-041

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	I-15 R	amps			DATE:	06/12/2	2008		LOC	ATION:	City of	San Die	до
E-W STREET:	Main S	t			DAY:	THURSI	DAY		PRO	JECT#	08-4	148-041	
	N	ORTHBO	UND	SC	OUTHBO	UND	E	EASTBOUI	ND	W	/ESTBOl	JND	
LANES:	NL 0	NT 0	NR 0	SL 1	ST 0	SR 1	EL 1	ET 2	ER 0	WL 0	WT 2	WR 1	TOTAL
6:00 AM 6:15 AM 6:30 AM 6:45 AM 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 10:00 AM 10:15 AM 10:30 AM 10:45 AM 11:30 AM 11:45 AM				41 25 24 18 14 13 22 24		71 90 60 47 43 36 41 37	9 9 7 11 12 15 12 15	42 25 36 36 42 50 56 62			106 93 103 88 77 86 92 89	23 24 30 30 28 13 16 18	292 266 260 230 216 213 239 245
TOTAL VOLUMES =	NL O	NT O	NR 0	SL 181	ST 0	SR 425	EL 90	ET 349	ER 0	WL O	WT 734	WR 182	TOTAL 1961
AM Pe	eak Hr B	egins at:	700	AM									
PEAK VOLUMES =	0	0	0	108	0	268	36	139	0	0	390	107	1048
PEAK HR. FACTOR:		0.000			0.817			0.858			0.934		0.897
	Signali	zed											

CONTROL: Signalized

National Data & Surveying Services

N-S STREET:	I-15 R	amps			DATE:	06/12/2	2008		LOC	ATION:	City of	San Die	go
E-W STREET:	Main S	it			DAY:	THURS	DAY		PRO.	JECT#	08-41	148-041	
	Ni	ORTHBO		50	OUTHBO			ASTBOU		١٨	/ESTBOI		
	IN		UND	SC		UND		ASTBOU	ND	V		סאנ	
LANES:	NL 0	NT 0	NR <mark>0</mark>	SL 1	ST 0	SR 1	EL 1	ET 2	ER <mark>0</mark>	WL 0	WT 2	WR 1	TOTAL
1:00 PM 1:15 PM 1:30 PM 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 6:00 PM 6:15 PM 6:30 PM				35 27 26 32 28 24 20 23	0 0 7 0 4 0 0	32 30 34 30 21 26 31 29	68 68 61 57 59 39 41 31	152 160 137 130 117 107 79 78			61 88 54 72 53 56 59 53	54 33 31 36 25 18 29 28	402 406 350 357 303 274 259 242
TOTAL VOLUMES =	NL O	NT O	NR 0	SL 215	ST 11	SR 233	EL 424	ET 960	ER 0	WL O	WT 496	WR 254	TOTAL 2593
PM Pe	eak Hr Be	egins at:	400	PM									
PEAK Volumes =	0	0	0	120	7	126	254	579	0	0	275	154	1515
PEAK HR. FACTOR:		0.000			0.944			0.913			0.886		0.933
CONTROL:	•												

Signalized CONTROL:

13:26:01

PRINT FILE FOR RAMP AADT

11-SD-005 P POST P 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006													
	P 5 DESCRIPTION	1997 ADT	1998 ADT	1999 ADT	2000 ADT	2001 ADT	2002 ADT	2003 ADT	2004 ADT	2005 ADT	2006 ADT		
R 010.754	NB OFF TO 9TH ST./PLAZA BLV			3150			3000			3400	3500		
R 010.776	SB OFF TO CLEVELAND AVE			3250			4150			3450	3850		
R 010.955	SB ON FRM 8TH ST.			3750			4500			4350	4450		
R 010.981	NB ON FRM CIVIC CNTR DRIVE			3500			4550			4200	4100		
R 011.130	SB OFF TO 8TH STREET						9100			8700	8500		
R 011.342	NB ON FRM 7TH & 8TH			9600			11000						
R 011.614	SB ON FRM MAIN ST.			5300			6200			5200	4900		
R 011.708	NB OFF TO NAT'L /DIVISION			5300			5000			5200	5000		
R 011.868	NB ON FRM NAT'L / DIVISION			7600			8100			9100	9600		
R 012.189	SB ON FROM SB RTE 15			22700			34500			34000	32000		
R 012.294	NB OFF TO NB RTE 15			24400			32000			31500	29500		
R 012.373	SB OFF TO MAIN STREET			5300			3850			5600	5900		
R 012.688	SB OFF TO NB RTE 15			5400			6400			8600	9100		
R 012.806	DUM NB ON FR SB RTE 15			6900			8400			12700	13400		
R 013.172	NB OFF TO 28TH AND NAT'L			6600			6800			7000	7000		
R 013.194	SB ON FRM BOSTON @29TH			6700			6100			6500	6500		
R 013.432	NB ON FRM NB 28TH/NAT'L			6700			5500			6000	5900		
R 013.480	SEG SB OFF TO 28TH ST.									7000			
R 013.540	SB OFF TO 28TH / NATIONAL A			10600			9700			11000			
R 013.557	NB ON FRM WB NATIONAL			3150			3450			3850			
R 013.825	NB OFF TO SB RTE. 75			9600			10900			13000			
R 013.904	SB ON FROM BRIDGE (NB 75)			9500			11200			12000			

13:26:01

CALTRANS TRAFFIC VOLUMES

PRINT FILE FOR RAMP AADT

				11.	-SD-005							
	POST P MILE S	DESCRIPTION	1997 ADT	1998 ADT	1999 ADT	2000 ADT	2001 ADT	2002 ADT	2003 ADT	2004 ADT	2005 ADT	2006 ADT
R	013.938	SB ON FROM LOGAN AT 5/75			5000			5100			7800	
R	014.028	NB OFF TO KEARNEY AVE			5600			5900			7600	
R	014.175	SB OFF TO SB RTE 75			21100			19900			21200	
R	014.281	NB ON FROM NB RTE 75			23800			23100			24400	
R	014.341	SB OFF TO BEARDSLEY/LOGAN A			3150			3450			3850	
R	014.591	NB OFF TO J ST & 19TH ST.			8200			7600			7400	
R	014.595	SB ON FROM 17TH & J STREET			4050			3800			4150	
R	014.709	SB OFF TO 17TH & IMPERIAL A			4900			5200			6900	
R	014.723	NB ON FROM 19TH STREET			6500			7000			8400	
R	014.938	NB OFF TO PERSHING & "B" ST			9700			9600				10500
R	014.957	SB ON FRM E ST.			4500			4450				4900
R	015.155	SB ON FRM PERSHING & C ST.			6600			6100			8100	
R	015.156	SB ON FROM C STREET									2950	
R	015.157	SB ON FROM PERSHING DR									4700	
R	015.260	NB ON FROM WB 94 & F ST			19200			19300			33500	
R	015.381	SB ON FROM 163 & PARK			19000			17000			17800	
R	015.530	SEG NB ON FRM B ST									4550	
R	015.535	SEG NB ON FRM PERSHING									8400	
R	015.539	NB ON FROM B & PERSHING			12000			11700			11900	
R	015.638	SB 5 OFF TO EB RTE 94									31000	
R	015.639	SB 5 OFF TO G STREET									2350	
R	015.640	SB 5 OFF TO G ST & EB 94			28000			28000			30500	

13:26:01

PRINT FILE FOR RAMP AADT

			11	-SD-008							
	9 5 DESCRIPTION	1997 ADT	1998 ADT	1999 ADT	2000 ADT	2001 ADT	2002 ADT	2003 ADT	2004 ADT	2005 ADT	2006 ADT
R 073.848	WB ON FRM CARRIZO ROAD	340			710			610			710
R 073.868	EB OFF TO CARRIZO ROAD	650			1050			870			1100
R 074.075	EB ON FRM CARRIZO ROAD	600			850			820			790
R 074.116	WB OFF TO CARRIZO ROAD	460			540			550			450
R 076.550	EB OFF TO TRUCK STOP				500						320
R 076.901	EB ON FROM TRUCK STOP				500						260
R 077.482	EB OFF TO IN KO PAH	55			50			50			55

Volumes for: Tues				City:	San Diego			Project	t #: 08-4149-0	01
ocation: SR-75	Off Ramp SB	 @ National Ave EB WE 	2		PM Period NB		SB	EB	WB	
00:00	0		5		12:00		30	LD	VVD	
00:15	3				12:00		11			
00:30	3				12:30		30			
00:45	2	8		8	12:45		18 89	9		89
01:00	1				13:00		38			
01:15	1				13:15		30			
01:30	2				13:30		21			
01:45	1	5		5	13:45		14 10	3		103
02:00	1				14:00		40			
02:15	0				14:15		30			
02:30	1				14:30		25			
02:45	0	2		2	14:45		29 12	4		124
03:00	0				15:00		37			
03:15	2				15:15		37			
03:30	0				15:30		28			
03:45	0	2		2	15:45		49 15	1		151
04:00	2				16:00		12			-
04:15	0				16:15		32			
04:30	1				16:30		35			
04:45	1	4		4	16:45		60 16	9		169
05:00	0				17:00		47			
05:15	3				17:15		56			
05:30	6				17:30		28			
05:45	15	24		24	17:45		38 16	9		169
06:00	16				18:00		37			
06:15	20				18:15		33			
06:30	19				18:30		41			
06:45	27	82		82	18:45	:	28 13	9		139
07:00	17				19:00	:	25			
07:15	27				19:15		16			
07:30	40				19:30		12			
07:45	61	145		145	19:45		20 73	3		73
08:00	52				20:00		11			
08:15	33				20:15		13			
08:30	34				20:30		4			
08:45	28	147		147	20:45		11 39	7		39
09:00	31				21:00		8			
09:15	25				21:15		13			
09:30	37				21:30		4			
09:45	13	106		106	21:45		10 35	5		35
10:00	9				22:00		8			
10:15	11				22:15		12			
10:30	22				22:30		9			
10:45	13	55		55	22:45		7 36	6		36
11:00	23				23:00		7			
11:15	7				23:15		9			
11:30	25	05		c=	23:30		1			<u> </u>
11:45	30	85		85	23:45		6 23	3		23
otal Vol.		665		665			115	50		1150
			NB	SB	ily Totals EB	WB				
			IND			VVD				
				1815	Combined					
					1815					
		AM							PM	
Split %		100.0%		36.6%			100	.0%		63.4%
eak Hour		07:30		07:30			16:	30		16:30

186

0.76

198

0.83

198

0.83

Volume

P.H.F.

186

0.76

Volumes for: Wedn	nesday, June	11, 2008	City:	San Diego			Project #: 08-4	149-001
Location: SR-75 (
AM Period NB	SB	EB WE	3	PM Period N			EB WB	
00:00 00:15	1 1			12:00 12:15	32 23			
00:30	0			12:30	32			
00:45	3 5		5	12:30	31	118		118
01:00	0			13:00	18			
01:15	0			13:15	24			
01:30	3			13:30	24			
01:45	1 4		4	13:45	22	88		88
02:00	0			14:00	29			
02:15	0			14:15	24			
02:30	1			14:30	27			
02:45	0 1		1	14:45	31	111		111
03:00	2			15:00	37			
03:15	1			15:15	44			
03:30	0			15:30	25			
03:45	0 3		3	15:45	44	150		150
04:00	0			16:00	27			
04:15	0			16:15	44			
04:30	1			16:30	38			
04:45	0 1		1	16:45	60	169		169
05:00	5			17:00	43			
05:15	6			17:15	39			
05:30	9			17:30	50			
05:45	17 37		37	17:45	31	163		163
06:00	14			18:00	40			
06:15	16			18:15	38			
06:30	21		70	18:30	36 34	140		140
06:45	22 73		73	18:45		148		148
07:00	36			19:00	17			
07:15	22 38			19:15	11 24			
07:30 07:45	38 42 138	,	138	19:30 19:45	15	67		67
			150			07		07
08:00 08:15	43 30			20:00 20:15	14 18			
08:30	26			20:15	13			
08:45	33 132	,	132	20:30	12	57		57
09:00	20		102	21:00	10	0,		
09:15	18			21:00	15			
09:30	21			21:30	7			
09:45	25 84		84	21:45	6	38		38
10:00	33			22:00	5			
10:15	17			22:00	9			
10:30	24			22:30	3			
10:45	30 104		104	22:45	6	23		23
11:00	41			23:00	11			
11:15	20			23:15	5			
11:30	40			23:30	4			
11:45	31 132		132	23:45	3	23		23
Total Vol.	714	L	714			1155		1155
	, , ,			ily Totals				
			NB SB		B WB			
			1809	1869				
		AM		1005			PM	
Split %	100.0		38.2%			100.0%		61.8%
Peak Hour	07:3	30	07:30			16:45		16:45
Volume	153		153			192		192
P.H.F.	0.89		0.89			192 0.80		0.80
1.111	0.03		0.07			0.00		0.00

Volumos for: Tuosday June	10_2000		City	San Diogo		Droit	oct #: 00 41-4	2 002
Volumes for: Tuesday, June Location: SR-75 On Ramp		Chavez Pkwy	City: S	San Diego		Proje	ect #: 08-414	9-002
AM Period NB SB	EB	WB		PM Period NB	SB	EB	WB	
00:00	4			12:00		16		
00:15	2			12:15		23		
00:30	5			12:30		30		
00:45	3	14	14	12:45		20	89	89
01:00	0			13:00		27		
01:15	0			13:15		26		
01:30	4			13:30		38		
01:45	1	5	5	13:45		41	132	132
02:00	0			14:00		29		
02:15	0			14:15		29		
02:30	0			14:30		27		
02:45	0	0		14:45		45	130	130
03:00	0			15:00		48		
03:15	0			15:15		31		
03:30	1			15:30		40		
03:45	0	1	1	15:45		45	164	164
04:00	0			16:00		48		
04:15	1			16:15		33		
04:30	2			16:30		40		
04:45	2	5	5	16:45		44	165	165
05:00	2			17:00		61		
05:15	8			17:15		61		
05:30	13			17:30		36		
05:45	14	37	37	17:45		44	202	202
06:00	16			18:00		30		
06:15	18			18:15		20		
06:30	23			18:30		18		
06:45	27	84	84	18:45		15	83	83
07:00	25			19:00		17		
07:15	25			19:15		15		
07:30	33			19:30		18		
07:45	24	107	107	19:45		11	61	61
08:00	21			20:00		12		
08:15	28			20:15		11		
08:30	28			20:30		14		
08:45	23	100	100	20:45		16	53	53
09:00	24			21:00		24		
09:15	19			21:15		15		
09:30	14			21:30		20		
09:45	19	76	76	21:45		20	79	79
10:00	30			22:00		22		
10:15	20			22:15		26		
10:30	19			22:30		25		
10:45	22	91	91	22:45		13	86	86
11:00	30			23:00		8		
11:15	38			23:15		13		
11:30	38			23:30		9		
11:45	28	134	134	23:45		4	34	34
Total Vol.		654	654				1278	1278
				ily Totals			1270	1270
			NB SB	EB	WB			
				Combined 1932				
				1932			DIA	
.		AM		-			PM	
Split %		100.0%	33.9%				100.0%	66.1%
Peak Hour		11:00	11:00				16:30	16:30

134 0.88

Volume

P.H.F

134 0.88

206

0.84

206

0.84

Volumes for: Wednesday, Ju	ne 11, 2008		Citv:	San Diego		Proie	ect #: 08-4149-002	
Location: SR-75 On Ramp								
AM Period NB SB	EB	WB		PM Period NB	SB	EB	WB	
00:00	3			12:00		26		
00:15	2			12:15		42		
00:30	3			12:30		30		
00:45	3 .	11	11	12:45		31	129	129
01:00	2			13:00		26		
01:15	0			13:15		30		
01:30	2			13:30		28		
01:45	0	4	4	13:45		27	111	111
02:00	2			14:00		23		
02:15	0			14:15		25		
02:30	1			14:30		23		
02:45	0	3	3	14:45		36	107	107
03:00	0			15:00		36		
03:15	0			15:15		36		
03:30	1			15:30		48		
03:45	0	1	1	15:45		35	155	155
04:00	1			16:00		33		
04:15	0			16:15		42		
04:30	3			16:30		44		
04:45	2	6	6	16:45		57	176	176
05:00	1			17:00		46		
05:15	7			17:15		44		
05:30	10			17:30		31		
05:45		27	27	17:45		28	149	149
06:00	16			18:00		27		
06:15	19			18:15		33		
06:30	18	70	70	18:30		27 19	10/	10/
06:45		73	73	18:45			106	106
07:00	21			19:00		25		
07:15 07:30	25 27			19:15 19:30		15 13		
07:45		91	91	19:45		23	76	76
08:00	22	/1	71	20:00		19	10	10
08:00	22			20:15		19		
08:30	27			20:30		15		
08:45		94	94	20:45		25	75	75
09:00	19			21:00		23		
09:15	31			21:15		26		
09:30	21			21:30		34		
09:45		01	101	21:45		19	102	102
10:00	15			22:00		27		
10:15	20			22:15		16		
10:30	17			22:30		17		
10:45		30	80	22:45		12	72	72
11:00	26			23:00		9		
11:15	32			23:15		5		
11:30	24			23:30		10		
11:45	33 1	15	115	23:45		3	27	27
Total Vol.	6	06	606				1285	1285
				ily Totals				
		NB	SB	EB	WB			
				Combined 1891				
				1891				
	A	M					PM	
Split %		0.0%	32.0%				100.0%	68.0%

Split %	100.0%	32.0%	100.0%	68.0%
Peak Hour	11:45	11:45	16:30	16:30
Volume	131	131	191	191
P.H.F.	0.78	0.78	0.84	0.84

Prepared	by	NDS/	ATD
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							Flepar	ed by NDS//									
Volumes	for: \	Wedn	esda	y, Feb	ruary 03	3, 2010	City:	San D	iego	NB		Da SB	aily T	otals EB	;	WB	Total
Location:		ar Chi & Lo			betwee	en Kearny	Project:	10-404	5-001	5,028		9,142		0		0	14,170
AM Period			SB		EB	WB		PM Period	NB		SB		EB		WB		
00:00	9		8					12:00	97		128						
00:15	1		9					12:15	84		108						
00:30	4		3					12:30	86		129						
00:45	6	20	5	25			45	12:45	73	340	130	495					835
01:00	1		8					13:00	81		140						
01:15	3		3					13:15	68 0(127						
01:30 01:45	7 5	16	12 10	33			49	13:30 13:45	96 102	347	132 122	521					868
		10	3	33			47			347		JZT					000
02:00 02:15	3 2		3 8					14:00 14:15	84 98		132 158						
02:15	2		4					14:15	131		164						
02:45	3	11	9	24			35	14:45	140	453	180	634					1087
03:00	0		8					15:00	136		130						
03:15	2		14					15:15	133		156						
03:30	3		20					15:30	122		159						
03:45	1	6	21	63			69	15:45	125	516	141	586					1102
04:00	9		26					16:00	110		105						
04:15	3		46					16:15	126		119						
04:30	9		79					16:30	110		104						
04:45	8	29	90	241			270	16:45	101	447	140	468					915
05:00	12		114					17:00	122		108						
05:15	16		138					17:15	115		128						
05:30	14		212					17:30	89		102						
05:45	20	62	174	638			700	17:45	87	413	106	444					857
06:00	26		125					18:00	84		113						
06:15	30		165					18:15	57		119						
06:30	30	101	155	(00			740	18:30	60	0/0	107	100					(00
06:45	48	134	164	609			743	18:45	62	263	90	429					692
07:00	47		140					19:00	38		84						
07:15 07:30	57 59		152 163					19:15 19:30	51 53		63 61						
07:45	59	222	182	637			859	19:30	26	168	66	274					442
08:00	61		181	557			007	20:00	49	100	84	-/ 1					1 12
08:00	58		219					20:00 20:15	49 42		84 73						
08:30	55		196					20:15	29		49						
08:45	62	236	156	752			988	20:45	59	179	52	258					437
09:00	74	_	165					21:00	38		56						
09:15	63		138					21:15	30		65						
09:30	58		138					21:30	32		49						
09:45	61	256	132	573			829	21:45	23	123	50	220					343
10:00	67		116					22:00	26		38						
10:15	55		136					22:15	22		48						
10:30	75		121					22:30	38		39						
10:45	74	271	133	506			777	22:45	16	102	33	158					260
11:00	83		119					23:00	19		29						
11:15	82		122					23:15	22		28						
11:30	74	_	103				_	23:30	18	_	23						
11:45	101	340	117	461			801	23:45	15	74	13	93					167

Total Vol.	1603	4562	6165		3425	4580			8005
					NB	SB	EB	WB	Total
				Daily Totals :	5,028	9,142	0	0	14,170
			AM				PM		
Split %	26.0%	74.0%	43.5%	-	42.8%	57.2%			56.5%
AM				PM					
Peak Hr.	11:45	07:45	07:45	Peak Hr.	14:30	14:00			14:30
Volume	368	778	1011	Volume	540	634			1170
P.H.F.	0.911	0.888	0.912	P.H.F.	0.964	0.881			0.914
7 - 9 Vol.	458	1389	1847	4 - 6 Vol.	860	912			1772
Peak Hr.	07:30	07:45	07:45	Peak Hr.	16:15	16:30			16:15
Volume	237	778	1011	Volume	459	480			930
P.H.F.	0.971	0.888	0.912	P.H.F.	0.911	0.857			0.949

Day: Wednesday Date: 06/11/08

Classification Report / Prepared by: National Data & Surveying Services

Location: Cesar Chavez btwn National Ave & Newton Ave

City: San Diego Project #: 08-4149-003N

North Bound

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	67	9	0	0	0	C	1	0	0	0	0	0	77
01:00	0	34	1	0	3	0	0	0	0	0	0	0	0	38
02:00	0	25	7	0	0	0	0	0	1	0	0	0	0	33
03:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
04:00	0	33	4	0	2	0	0	0	0	0	0	0	0	39
05:00	0	77	11	1	6	1	0	1	0	0	0	0	0	97
06:00	1	166	21	3	19	1	0	2	0	0	0	0	0	213
07:00	2	179	27	4	13	2	1	5	3	0	2	0	0	238
08:00	0	190	37	3	27	2	1	12	6	0	2	0	0	280
09:00	1	200	51	3	21	8	0	10	3	0	3	0	0	300
10:00	0	201	47	2	19	1	1	13	3	0	3	0	0	290
11:00	4	273	49	5	24	5	1	19	4	0	3	0	0	387
12:00 PM	2	286	59	5	22	4	0	21	9	0	8	0	0	416
13:00	7	292	64	3	20	6	1	9	3	0	5	0	0	410
14:00	5	325	70	5	11	6	3	30	27	0	18	0	0	500
15:00	2	430	69	2	13	4	0	33	13	0	8	0	0	574
16:00	4	456	45	0	10	2	1	30	11	0	6	0	0	565
17:00	3	368	35	4	13	2	0	19	8	0	11	0	0	463
18:00	2	228	29	2	6	5	0	13	3	0	0	0	0	288
19:00	0	187	15	1	2	1	1	5	2	0	2	0	0	216
20:00	3	180	14	0	10	0	0	8	0	0	0	0	0	215
21:00	1	322	28	6	5	2	0	26	19	0	7	0	0	416
22:00	0	243	13	2	2	5	C	12	1	0	6	0	0	284
23:00	0	129	17	0	1	1	0	3	0	0	0	0	0	151
Totals	37	4904	723	51	249	58	10	272	116		84			6504
% of Totals	1%	75%	11%	1%	4%	1%	0%	4%	2%		1%			100%
	8	1458	265	21	134	20	4	63	20	0	13	0	0	2006
% AM	0%	22%	4%	0%	2%	0%	0%	1%	0%		0%			31%
AM Peak Hour	11:00	11:00	09:00	11:00	08:00	09:00	07:00	11:00	08:00		09:00			11:00
Volume	4	273	51	5	27	8	1	19	6		3			387
	29	3446	458	30	115	38	6	209	96	0	71	0	0	4498
% PM	0%	53%	7%	0%	2%	1%	0%	3%	1%		1%			69%
PM Peak Hour	13:00	16:00	14:00	21:00	12:00	13:00	14:00	15:00	14:00		14:00			15:00
Volume	7	456	70	6	22	6	3	33	27		18			574
Directional Pea	k Periods	\$		AM 7-9		N	OON 12-2			PM 4-6		Off F	Peak Volum	nes
All Classes			Volume		%	Volume		%	Volume		%	Volume		%
			518	\longleftrightarrow	8%	826	←→	13%	1028	\longleftrightarrow	16%	4132	\longleftrightarrow	64%

Day: Wednesday Date: 06/11/08

Classification Report / Prepared by: National Data & Surveying Services

Location: Cesar Chavez btwn National Ave & Newton Ave

City: San Diego Project #: 08-4149-003S

South Bound

Time	#1	#2	#3	#4	#5	#6	#7	″ #8	#9	#10	#11	#12	#13	Tota
00:00 AM	0	21	2	0	1	0	C) 0	1	0	0	0	0	25
01:00	0	21	1	0	3	0	C) 0	0	0	0	0	0	25
02:00	0	21	3	0	0	0	C) 0	0	0	0	0	0	24
03:00	0	44	6	0	2	0	C) 0	2	0	0	0	0	54
04:00	0	145	23	0	1	0	C) 4	2	0	1	0	0	176
05:00	2	374	64	0	19	1	C) 22	1	0	4	0	0	48
06:00	4	367	47	4	18	3	C) 28	5	0	9	0	0	485
07:00	1	376	54	4	17	1	C) 28	7	0	12	0	0	500
08:00	3	345	40	1	13	4	C) 23	5	0	9	0	0	443
09:00	4	255	42	1	12	4	C) 17	3	0	3	0	0	341
10:00	2	201	35	2	16	4	C) 12	5	0	5	0	0	282
11:00	2	253	31	4	18	1	C) 17	8	0	4	0	0	338
12:00 PM	3	208	43	1	24	4	C) 17	4	0	6	0	0	310
13:00	4	244	40	4	18	3	C) 10	4	0	8	0	0	335
14:00	2	253	49	4	14	3	C) 11	2	0	4	0	0	342
15:00	2	284	35	1	9	2	C) 17	2	0	5	0	0	35
16:00	3	269	23	2	12	0	C) 14	1	0	3	0	0	32
17:00	3	211	16	2	11	2	C) 9	1	0	4	0	0	259
18:00	4	239	25	0	6	2	C) 17	2	0	4	0	0	299
19:00	0	133	7	1	4	0	C) 5	0	0	0	0	0	150
20:00	1	90	8	0	2	0	C) 1	2	0	2	0	0	100
21:00	2	100	6	1	2	0	C) 3	1	0	2	0	0	11
22:00	1	77	2	0	0	0	C) 1	0	0	0	0	0	8
23:00	0	66	6	0	1	1	C) 0	0	0	0	0	0	74
Totals	43	4597	608	32	223	35		256	58		85			5937
% of Totals	1%	77%	10%	1%	4%	1%		4%	1%		1%			100%
	18	2423	348	16	120	18	() 151	39	0	47	0	0	3180
% AM	0%	41%	6%	0%	2%	0%		3%	1%		1%			54%
AM Peak Hour	06:00	07:00	05:00	06:00	05:00	08:00		06:00	11:00		07:00			07:00
Volume	4	376	64	4	19	4		28	8		12			500
	25	2174	260	16	103	17	() 105	19	0	38	0	0	275
% PM	0%	37%	4%	0%	2%	0%		2%	0%		1%			46%
PM Peak Hour	13:00	15:00	14:00	13:00	12:00	12:00		12:00	12:00		13:00			15:00
Volume	4	284	49	4	24	4		17	4		8			357
Directional Peal	k Periods	6		AM 7-9		N	DON 12-2			PM 4-6		Off F	Peak Volum	nes
Il Classes			Volume 943		% 6%	Volume	←→	% 11%	Volume 586		% 0%	Volume 3763	←→	% 63%

Day: Wednesday

Date: 6/11/08

Classification Report / Prepared by: National Data & Surveying Services

Location: Cesar Chavez btwn National Ave & Newton Ave

City: San Diego Project #: 08-4149-003

SUMMARY

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	88	11	0	1	0	0	1	1	0	0	0	0	102
01:00	0	55	2	0	6	0	0	0	0	0	0	0	0	63
02:00	0	46	10	0	0	0	0	0	1	0	0	0	0	57
03:00	0	57	7	0	2	0	0	0	2	0	0	0	0	68
04:00	0	178	27	0	3	0	0	4	2	0	1	0	0	215
05:00	2	451	75	1	25	2	0	23	1	0	4	0	0	584
06:00	5	533	68	7	37	4	0	30	5	0	9	0	0	698
07:00	3	555	81	8	30	3	1	33	10	0	14	0	0	738
08:00	3	535	77	4	40	6	1	35	11	0	11	0	0	723
09:00	5	455	93	4	33	12	0	27	6	0	6	0	0	641
10:00	2	402	82	4	35	5	1	25	8	0	8	0	0	572
11:00	6	526	80	9	42	6	1	36	12	0	7	0	0	725
12:00 PM	5	494	102	6	46	8	0	38	13	0	14	0	0	726
13:00	11	536	104	7	38	9	1	19	7	0	13	0	0	745
14:00	7	578	119	9	25	9	3	41	29	0	22	0	0	842
15:00	4	714	104	3	22	6	0	50	15	0	13	0	0	931
16:00	7	725	68	2	22	2	1	44	12	0	9	0	0	892
17:00	6	579	51	6	24	4	0	28	9	0	15	0	0	722
18:00	6	467	54	2	12	7	0	30	5	0	4	0	0	587
19:00	0	320	22	2	6	1	1	10	2	0	2	0	0	366
20:00	4	270	22	0	12	0	0	9	2	0	2	0	0	321
21:00	3	422	34	7	7	2	0	29	20	0	9	0	0	533
22:00	1	320	15	2	2	5	0	13	1	0	6	0	0	365
23:00	0	195	23	0	2	2	0	3	0	0	0	0	0	225
Totals	80	9501	1331	83	472	93	10	528	174		169			12441
% of Totals	1%	76%	11%	1%	4%	1%	0%	4%	1%		1%			100%
	26	3881	613	37	254	38	4	214	59	0	60	0	0	5186
% AM	0%	31%	5%	0%	2%	0%	0%	2%	0%		0%			42%
AM Peak Hour	11:00	07:00	09:00	11:00	11:00	09:00	07:00	11:00	11:00		07:00			07:00
Volume	6	555	93	9	42	12	1	36	12		14			738
	54	5620	718	46	218	55	6	314	115	0	109	0	0	7255
% PM	0%	45%	6%	0%	2%	0%	0%	3%	1%		1%			58%
PM Peak Hour	13:00	16:00	14:00	14:00	12:00	13:00	14:00	15:00	14:00		14:00			15:00
Volume	11	725	119	9	46	9	3	50	29		22			931
Peak Period To	tals			AM 7-9		N	OON 12-2			PM 4-6		Off F	Peak Volum	nes
			Volume 1461	←→ ′	% 12%	Volume 1471		% 12%	Volume 1614	←→	% 13%	Volume 7895	←→	% 63%

Day: Thursday Date: 06/12/08 Classification Report / Prepared by: National Data & Surveying Services

Location: Cesar Chavez btwn National Ave & Newton Ave

City: San Diego Project #: 08-4149-003N

North Bound

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	74	4	0	0	0	0	0	0	0	0	0	0	78
01:00	0	25	5	0	0	0	0	0	0	0	0	0	0	30
02:00	0	19	4	0	0	0	0	1	0	0	0	0	0	24
03:00	0	17	0	0	0	0	0	0	0	0	0	0	0	17
04:00	1	41	5	0	1	0	0	0	0	0	0	0	0	48
05:00	1	75	7	1	6	0	0	0	1	0	0	0	0	91
06:00	1	154	21	5	13	0	2	5	1	0	0	0	0	202
07:00	3	169	35	4	20	4	0	9	2	0	1	0	0	247
08:00	1	185	42	6	27	3	1	9	5	0	0	0	0	279
09:00	2	173	43	5	19	4	1	16	8	0	5	0	0	276
10:00	1	204	48	3	21	5	0	10	4	0	3	0	0	299
11:00	2	258	47	4	24	3	0	14	10	0	4	0	0	366
12:00 PM	5	266	68	4	24	2	0	17	9	0	3	0	0	398
13:00	4	330	36	7	17	5	0	25	13	0	9	0	0	446
14:00	2	425	84	2	14	8	1	42	24	0	14	0	0	616
15:00	5	400	72	4	13	9	0	67	71	0	32	0	0	673
16:00	3	436	52	5	14	7	0	44	32	0	18	0	0	611
17:00	4	367	43	4	14	4	0	28	10	0	6	0	0	480
18:00	3	245	25	5	5	4	0	16	4	0	4	0	0	311
19:00	3	168	20	1	4	0	1	5	2	0	0	0	0	204
20:00	0	197	17	2	6	0	0	4	0	0	3	0	0	229
21:00	1	159	19	1	5	1	0	3	0	0	1	0	0	190
22:00	0	201	21	0	1	0	1	12	1	0	0	0	0	237
23:00	0	135	10	0	1	0	0		1	0	1	0	0	151
Totals	42	4723	728	63	249	59	7	330	198		104			6503
% of Totals	1%	73%	11%	1%	4%	1%	0%	5%	3%		2%			100%
	12	1394	261	28	131	19	4	64	31	0	13	0	0	1957
% AM	0%	21%	4%	0%	2%	0%	0%	1%	0%		0%			30%
AM Peak Hour	07:00	11:00	10:00	08:00	08:00	10:00	06:00	09:00	11:00		09:00			11:00
Volume	3	258	48	6	27	5	2	16	10		5			366
	30	3329	467	35	118	40	3		167	0	91	0	0	4546
% PM	0%	51%	7%	1%	2%	1%	0%	4%	3%		1%			70%
PM Peak Hour	12:00	16:00	14:00	13:00	12:00	15:00	14:00	15:00	15:00		15:00			15:00
Volume	5	436	84	7	24	9	1	67	71		32			673
Directional Pea	k Periods	5		AM 7-9		N	OON 12-2			PM 4-6		Off F	Peak Volun	nes
All Classes			Volume		%	Volume		%	Volume		%	Volume		%
			526	↔ 8	3%	844	\longleftrightarrow	13%	1091	↔ 1	17%	4042	\longleftrightarrow	62%

Day: Thursday Date: 06/12/08

Classification Report / Prepared by: National Data & Surveying Services

Location: Cesar Chavez btwn National Ave & Newton Ave

City: San Diego Project #: 08-4149-003S

South Bound

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Tota
00:00 AM	0	23	1	0	0	0	0	0	1	0	0	0	0	25
01:00	0	17	1	0	1	0	0	0	0	0	0	0	0	19
02:00	0	20	2	0	1	0	0	0	0	0	0	0	0	23
03:00	0	44	4	0	0	0	0	0	0	0	0	0	0	48
04:00	1	142	17	0	4	0	0	0	1	0	0	0	0	16
05:00	2	373	68	0	14	1	0	33	1	0	8	0	0	500
06:00	3	353	66	3	18	2	0	40	7	0	10	0	0	502
07:00	4	325	55	2	24	3	0	49	4	0	15	0	0	481
08:00	3	293	36	6	13	4	0	24	14	0	16	0	0	409
09:00	2	256	39	1	21	2	0	18	4	0	3	0	0	346
10:00	4	240	45	2	24	5	0	19	5	0	5	0	0	349
11:00	5	278	46	2	19	4	0	30	8	0	8	0	0	400
12:00 PM	3	304	55	5	15	0	0	30	9	0	15	0	0	436
13:00	1	266	50	4	10	0	0	17	2	0	7	0	0	35
14:00	4	245	56	5	33	5	0	12	3	0	4	0	0	36
15:00	3	228	47	2	25	2	0	13	3	0	10	0	0	333
16:00	0	254	43	3	30	0	0	8	2	0	1	0	0	34
17:00	4	209	31	3	24	0	0	6	0	0	1	0	0	278
18:00	2	124	19	0	9	0	0	3	0	0	0	0	0	15
19:00	2	97	18	1	6	1	0	4	0	0	0	0	0	129
20:00	2	90	12	0	8	0	0	3	2	0	1	0	0	118
21:00	0	96	9	1	2	0	0	2	0	0	0	0	0	11(
22:00	0	78	9	0	4	0	0	1	0	0	0	0	0	92
23:00	0	49	7	0	3	0	0	0	0	0	0	0	0	59
Totals	45	4404	736	40	308	29		312	66		104			6044
% of Totals	1%	73%	12%	1%	5%	0%		5%	1%		2%			100%
	24	2364	380	16	139	21	0	213	45	0	65	0	0	326
% AM	0%	39%	6%	0%	2%	0%		4%	1%		1%			54%
AM Peak Hour	11:00	05:00	05:00	08:00	07:00	10:00		07:00	08:00		08:00			06:00
Volume	5	373	68	6	24	5		49	14		16			502
	21	2040	356	24	169	8	0	99	21	0	39	0	0	277
% PM	0%	34%	6%	0%	3%	0%		2%	0%		1%			46%
PM Peak Hour	14:00	12:00	14:00	12:00	14:00	14:00		12:00	12:00		12:00			12:00
Volume	4	304	56	5	33	5		30	9		15			436
Directional Peal	k Periods	6		AM 7-9		N	DON 12-2			PM 4-6		Off F	Peak Volun	nes
All Classes			Volume		%	Volume		%	Volume		%	Volume		%
			890	←→ 1	5%	793	\longleftrightarrow	13%	619	←→ 1	0%	3742	←→	62%

Day: Thursday Date: 06/12/08

Classification Report / Prepared by: National Data & Surveying Services

Location: Cesar Chavez btwn National Ave & Newton Ave

City: San Diego Project #: 08-4149-003

SUMMARY

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	97	5	0	0	0	0	0	1	0	0	0	0	103
01:00	0	42	6	0	1	0	0	0	0	0	0	0	0	49
02:00	0	39	6	0	1	0	0	1	0	0	0	0	0	47
03:00	0	61	4	0	0	0	0	0	0	0	0	0	0	65
04:00	2	183	22	0	5	0	0	0	1	0	0	0	0	213
05:00	3	448	75	1	20	1	0	33	2	0	8	0	0	591
06:00	4	507	87	8	31	2	2	45	8	0	10	0	0	704
07:00	7	494	90	6	44	7	0	58	6	0	16	0	0	728
08:00	4	478	78	12	40	7	1	33	19	0	16	0	0	688
09:00	4	429	82	6	40	6	1	34	12	0	8	0	0	622
10:00	5	444	93	5	45	10	0	29	9	0	8	0	0	648
11:00	7	536	93	6	43	7	0	44	18	0	12	0	0	766
12:00 PM	8	570	123	9	39	2	0	47	18	0	18	0	0	834
13:00	5	596	86	11	27	5	0	42	15	0	16	0	0	803
14:00	6	670	140	7	47	13	1	54	27	0	18	0	0	983
15:00	8	628	119	6	38	11	0	80	74	0	42	0	0	1006
16:00	3	690	95	8	44	7	0	52	34	0	19	0	0	952
17:00	8	576	74	7	38	4	0	34	10	0	7	0	0	758
18:00	5	369	44	5	14	4	0	19	4	0	4	0	0	468
19:00	5	265	38	2	10	1	1	9	2	0	0	0	0	333
20:00	2	287	29	2	14	0	0	7	2	0	4	0	0	347
21:00	1	255	28	2	7	1	0	5	0	0	1	0	0	300
22:00	0	279	30	0	5	0	1	13	1	0	0	0	0	329
23:00	0	184	17	0	4	0	0	3	1	0	1	0	0	210
Totals	87	9127	1464	103	557	88	7	642	264		208			12547
% of Totals	1%	73%	12%	1%	4%	1%	0%	5%	2%		2%			100%
	36	3758	641	44	270	40	4	277	76	0	78	0	0	5224
% AM	0%	30%	5%	0%	2%	0%	0%	2%	1%		1%			42%
AM Peak Hour	07:00	11:00	10:00	08:00	10:00	10:00	06:00	07:00	08:00		07:00			11:00
Volume	7	536	93	12	45	10	2	58	19		16			766
	51	5369	823	59	287	48	3	365	188	0	130	0	0	7323
% PM	0%	43%	7%	0%	2%	0%	0%	3%	1%		1%			58%
PM Peak Hour	12:00	16:00	14:00	13:00	14:00	14:00	14:00	15:00	15:00		15:00			15:00
Volume	8	690	140	11	47	13	1	80	74		42			1006
Peak Period To	tals			AM 7-9		N	DON 12-2			PM 4-6		Off F	Peak Volum	nes
			Volume 1416		% 11%	Volume 1637		% 13%	Volume 1710		% 14%	Volume 7784	←→	% 62%

Prepared	by	NDS/	ATD
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	_						Prepare	ed by NDS//		_							
Volumes	for:	Wedn	esda	y, Feb	ruary 0	3, 2010	City:	San Di	iego	NB		Da SB	aily T	otals EB	;	WB	Total
Location:		ar Cha & Ma			betwe	en Newton	Project:	10-404	5-002	6,129		5,683		0		0	11,812
AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB		WB		
00:00	14		1					12:00	81		58						
00:15	8		6					12:15	113		74						
00:30	15		2					12:30	97		78						
00:45	18	55	2	11			66	12:45	85	376	82	292					668
01:00	7		4					13:00	87		72						
01:15	3		2					13:15	85 115		67 70						
01:30 01:45	8 4	22	4 1	11			33	13:30 13:45	115 127	414	78 108	325					739
		22		11			55			414	96	325					737
02:00 02:15	6 5		1 1					14:00 14:15	106 135		96 105						
02:15	3		3					14:15	225		105						
02:30	1	15	5	10			25	14:45	204	670	93	400					1070
03:00	4	10	3				20	15:00	142	0.0	81	100					1070
03:00	2		9					15:00	142		95						
03:30	1		, 14					15:30	174		113						
03:45	1	8	16	42			50	15:45	136	609	81	370					979
04:00	4		19					16:00	145		42						
04:00	2		42					16:15	102		76						
04:30	6		61					16:30	142		72						
04:45	7	19	74	196			215	16:45	136	525	103	293					818
05:00	22		104					17:00	150		73						
05:00	30		134					17:15	117		62						
05:30	23		191					17:30	124		53						
05:45	38	113	177	606			719	17:45	112	503	54	242					745
06:00	34		116					18:00	91		36						
06:15	53		119					18:15	59		34						
06:30	59		112					18:30	67		22						
06:45	53	199	131	478			677	18:45	66	283	35	127					410
07:00	55		102					19:00	48		16						
07:15	52		116					19:15	50		17						
07:30	77		149					19:30	57		21						
07:45	67	251	125	492			743	19:45	48	203	26	80					283
08:00	50		121					20:00	45		18						
08:15	73		110					20:15	40		26						
08:30	51		132					20:30	42		18						
08:45	66	240	86	449			689	20:45	39	166	21	83					249
09:00	65		89					21:00	60		22						
09:15	59		79					21:15	68		30						
09:30	64		73					21:30	49		16						
09:45	63	251	99	340			591	21:45	44	221	27	95					316
10:00	69		64					22:00	56		25						
10:15	67		69					22:15	38		30						
10:30	63		66					22:30	77		24						
10:45	67	266	88	287			553	22:45	35	206	23	102					308
11:00	81		54					23:00	45		17						
11:15	68		79					23:15	40		18						
11:30	77		77					23:30	65		16						
11:45	114	340	80	290			630	23:45	24	174	11	62					236

Total Vol.	1779	3212	4991		4350	2471			6821
					NB	SB	EB	WB	Total
				Daily Totals :	6,129	5,683	0	0	11,812
			AM				PM		
Split %	35.6%	64.4%	42.3%		63.8%	36.2%			57.7%
AM				PM					
Peak Hr.	11:45	05:15	07:30	Peak Hr.	14:30	13:45			14:30
Volume	405	618	772	Volume	728	415			1103
P.H.F.	0.888	0.809	0.854	P.H.F.	0.809	0.961			0.833
7 - 9 Vol.	491	941	1432	4 - 6 Vol.	1028	535			1563
Peak Hr.	07:30	07:15	07:30	Peak Hr.	16:30	16:15			16:30
Volume	267	511	772	Volume	545	324			855
P.H.F.	0.867	0.857	0.854	P.H.F.	0.908	0.786			0.894

Volumes fo	or: Tu	esdav	June	e 10, 2008	3		Citv:	San Diego					Project	#: 08-41	49-004
					۔ ۱ Main St & F	larbor Di		our broge					ejeet		
AM Period			SB	EE				PM Period	NB		SB		EB	WB	
00:00	24		7					12:00	65		49				
00:15	16		6					12:15	61		48				
00:30 00:45	16 11	67	4 3	20			87	12:30 12:45	88 59	273	54 69	220			493
01:00	10	07	8	20			07	13:00	75	273	65	220			475
01:00	5		3					13:00	83		64				
01:30	6		4					13:30	90		64				
01:45	7	28	8	23			51	13:45	82	330	80	273			603
02:00	5		6					14:00	85		75				
02:15	5		1					14:15	102		79				
02:30	3		2					14:30	195		94				
02:45	1	14	8	17			31	14:45	150	532	75	323			855
03:00	2		6					15:00	201		60				
03:15	3		10					15:15	118		59				
03:30	6		7					15:30	118		83				
03:45	1	12	12	35			47	15:45	130	567	98	300			867
04:00	3		21					16:00	118		86				
04:15	2		25					16:15	97 100		81				
04:30	7 11	22	38 55	130			160	16:30 16:45	122 156	102	74 73	21/			807
04:45		23		139			162	16:45	156	493	73	314			807
05:00	15		61					17:00	137		76 72				
05:15 05:30	21 27		84 124					17:15 17:30	146 102		73 53				
05:30	27	92	124	423			515	17:30	102	499	58	260			759
06:00	29	72	112	425			515	18:00	84	777	78	200			137
06:00	29 35		112					18:00	66		67				
06:30	50		117					18:30	64		65				
06:45	48	162	116	460			622	18:45	44	258	73	283			541
07:00	42		105					19:00	41		34				
07:15	57		119					19:15	47		36				
07:30	67		122					19:30	62		21				
07:45	36	202	119	465			667	19:45	37	187	20	111			298
08:00	46		105					20:00	27		19				
08:15	43		79					20:15	37		20				
08:30	33		77					20:30	43		19				
08:45	55	177	79	340			517	20:45	43	150	17	75			225
09:00	36		78					21:00	54		13				
09:15	48		57					21:15	53		27				
09:30	37		64					21:30	66		14				
09:45	51	172	57	256			428	21:45	79	252	27	81			333
10:00	43		44					22:00	131		22				
10:15	38 41		36 52					22:15	112 140		21				
10:30 10:45	41 53	175	53 40	173			348	22:30 22:45	169 125	537	28 18	89			626
		170		173			340			557		07			020
11:00 11:15	79 74		51 44					23:00 23:15	84 50		12 8				
11:30	74 90		44 70					23:15	44		0 11				
11:45	88	331	70	235			566	23:45	24	202	18	49			251
							4041								
Fotal Vol.		1455		2586				uly Toto		4280		2378			6658
						ND		aily Tota							
						NB	SB	O and bit of	EB	WB					
						5735	4964	Combined							
					AM			10699					P	M	
Split %		36.0%		64.0%			37.8%			64.3%		35.7%			62.2%
eak Hour		11:00		05:30			06:45			14:30		15:30			14:15
Peak Hour Volume		11:00 331		05:30 505			06:45 676			14:30 664		15:30 348			14:15 956

Volumes fo	or: We	dnesc	lav. Ji	ine 1	1. 2008		Citv	: San Diego					Project #	[∉] : 08-4149-0	04
					btwn Main St &	Harbor Dr		. our brogo					i reject "		
AM Period			SB	<i>,</i>	EB W			PM Period	NB		SB		EB	WB	
00:00	11		9					12:00	65		67				
00:15	14		5					12:15	80		63				
00:30 00:45	18 21	64	4 10	28			92	12:30 12:45	100 73	318	58 64	252			570
01:00	13	04	4	20			72	13:00	58	510	55	232			570
01:00	5		4 7					13:00	90		65				
01:30	6		6					13:30	83		63				
01:45	9	33	6	23			56	13:45	82	313	61	244			557
02:00	7		3					14:00	91		62				
02:15	5		3					14:15	114		57				
02:30 02:45	5 3	20	5 9	20			40	14:30 14:45	196 128	529	85 65	269			798
	3 1	20	7	20			40		120	529	45	209			/90
03:00 03:15	5		7 13					15:00 15:15	100		45 66				
03:30	8		11					15:30	124		87				
03:45	3	17	17	48			65	15:45	92	483	70	268			751
04:00	1		17					16:00	96		63				
04:15	5		20					16:15	108		66				
04:30	7		35					16:30	119		58				
04:45	4	17		127			144	16:45	136	459	67	254			713
05:00	12		71					17:00	102		66				
05:15	17 21		76 125					17:15	109		42				
05:30 05:45	21 25	75	125 136	408			483	17:30 17:45	80 70	361	69 57	234			595
06:00	27	75	111	400			403	18:00	66	301	57	234			575
06:00	27 41		126					18:00	66		70				
06:30	42		113					18:30	59		74				
06:45	51	161	133	483			644	18:45	39	230	68	269			499
07:00	43		120					19:00	57		38				
07:15	40		130					19:15	45		24				
07:30	40		113					19:30	41		34				
07:45	41	164		474			638	19:45	41	184	24	120			304
08:00	36		82					20:00	42		20				
08:15	36 55		88 70					20:15	37 54		22 20				
08:30 08:45	55 35	162	70 60	300			462	20:30 20:45	54 73	206	20 18	80			286
09:00	46	102	52	000			102	21:00	89	200	19	00			200
09:00	40 54		49					21:00	105		21				
09:30	38		67					21:30	101		23				
09:45	50	188	61	229			417	21:45	94	389	31	94			483
10:00	36		43					22:00	83		20				
10:15	51		47					22:15	80		13				
10:30	49	000	51	100			261	22:30	78	001	23	70			o
10:45	67	203		193			396	22:45	50	291	17	73			364
11:00	68 60		43 75					23:00	47 20		12 14				
11:15 11:30	60 70		75 69					23:15 23:30	20 46		14 15				
11:45	81	279		234			513	23:30	40 26	139	13	54			193
Total Vol.		1383		2567			3950 D	aily Tota	<u>اد</u>	3902		2211			6113
						NB	SB	any iota	EB	WB					
						5285	<u>эр</u> 4778	Combined	LD	VVD					
						5265	4//0	10063							
					AM			_					P٨	Λ	
Split %		35.0%		65.0%	6		39.3%			63.8%		36.2%			60.7%
Peak Hour		11:45		05:30)		06:30			14:15		15:15			14:15
Volume		326		498			672			604		286			856
P.H.F.		0.82		0.92			0.91			0.72		0.82			0.76

Volumes fo	or: Tu	esday,	, Jun	e 10, 2	2008		City:	San Diego					Project #	⊭: 08-4149	-005
		pson S		twn I-5	5 & National A										
AM Period			SB		EB V	VB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	31		27				
00:15 00:30	2 4		9 0					12:15 12:30	18 28		23 21				
00:30	4 1	7	2	11			18	12:30	20 31	108	21 16	87			195
01:00	0	,	0				10	13:00	17	100	25	07			170
01:15	0		0					13:15	27		22				
01:30	0		0					13:30	33		35				
01:45	1	1	0	0			1	13:45	37	114	27	109			223
02:00	3		0					14:00	33		31				
02:15	0		0					14:15	40		25				
02:30	2		2					14:30	71		31				
02:45	0	5	2	4			9	14:45	74	218	25	112			330
03:00	0		1					15:00	61		31				
03:15	0		0					15:15	38		22				
03:30	1	2	0	2			-	15:30	41	177	17	0.4			071
03:45	2	3	1	2			5	15:45	37	177	24	94			271
04:00	0 5		1 7					16:00	38 30		22 17				
04:15 04:30	5 6		7 12					16:15 16:30	30 38		33				
04:30	5	16	12	31			47	16:30	30 39	145	33 25	97			242
05:00	1		17					17:00	25		27				
05:15	5		27					17:15	29		22				
05:30	8		30					17:30	31		15				
05:45	13	27	34	108			135	17:45	31	116	15	79			195
06:00	17		18					18:00	26		14				
06:15	12		27					18:15	16		15				
06:30	18		18					18:30	10		14				
06:45	17	64	26	89			153	18:45	18	70	13	56			126
07:00	13		16					19:00	32		9				
07:15	17		17					19:15	22		10				
07:30	27		27					19:30	16		4				
07:45	25	82	26	86			168	19:45	10	80	3	26			106
08:00	23		18					20:00	13		12				
08:15 08:30	14 18		23 14					20:15 20:30	14 6		11 0				
08:30	17	72	14	71			143	20:30	8	41	8	31			72
09:00	20	12	18	/1			145	21:00	7	71	3	51			12
09:00	20		10					21:00	, 10		3				
09:30	18		16					21:30	6		9				
09:45	24	83	17	61			144	21:45	3	26	11	26			52
10:00	24		16					22:00	3		2				
10:15	38		20					22:15	6		8				
10:30	21		24					22:30	6		0				
10:45	30	113	25	85			198	22:45	2	17	2	12			29
11:00	29		26					23:00	7		0				
11:15	20		31					23:15	2		3				
11:30	33 26	100	20 26	102			011	23:30 22:45	6	17	0	С			20
11:45	26	108	26	103			211	23:45	2	17	0	3			
Total Vol.		581		651			1232			1129		732			1861
								aily Tota							
						NB	SB		EB	WB					
						1710	1383	Combined							
								3093							
Split 0/		47.004		F2 00/	AM		20.004	-		60 70/		20.204	PN	Л	40.00/
Split %		47.2%		52.8%			39.8%			60.7%		39.3%			60.2%
Peak Hour		10:15		05:15			10:45			14:15		13:30			14:15
Volume		118		109			214			246		118			358
P.H.F.		0.78		0.80			0.97			0.88		0.84			0.88

Volumes fo	r: We	ednesd	ay, J	une 1	1, 2008		С	City: San D)iego					Project	#: 08	8-4149-0	05
Location:		oson S		wn I-§								<u>CD</u>		50	14	(D	
AM Period			SB		EB	WB		PM Pe		<u>IB</u>		SB		EB	N	/B	
00:00 00:15	2 5		5 2					12: 12:				20 18					
00:30	1		1					12:		0		23					
00:45	2	10	2	10			2	0 12:	45 2	4	85	21	82				167
01:00	2		1					13:	00 1	9		27					
01:15	0		0					13:				16					
01:30	1		0				_	13:				29					
01:45	1	4	0	1			5				94	42	114				208
02:00	0		0					14:				27					
02:15	0		0 5					14:		2		24 20					
02:30 02:45	1 1	2	э 3	8			1	14: 0 14:			257	20 21	92				349
03:00	0	2	0	0				15:			207	30	12				547
03:00	1		0					15.				22					
03:30	0		1					15:				23					
03:45	0	1	0	1			2	2 15:			204	28	103				307
04:00	1		6					16:				20					
04:15	4		7					16:				22					
04:30	1		10					16:				19					
04:45	11	17	12	35			5	2 16:	45 5	2 1	161	26	87				248
05:00	1		13					17:				25					
05:15	5		24					17:				16					
05:30	9		42	10/				17:		2		15	77				101
05:45	13	28	27	106			13				118	20	76				194
06:00	21		18					18:				18					
06:15 06:30	13 14		21 19					18: 18:				17 15					
06:30	14	61	19 19	77			13				79	16	66				145
07:00	16	01	18	,,				19:0 19:0			,,	13	00				110
07:00	15		20					19.0				16					
07:30	25		22					19:				10					
07:45	20	76	18	78			15				50	16	55				105
08:00	18		20					20:0	00 7	7		12					
08:15	21		19					20:	15 4	4		11					
08:30	21		13					20:	30 7	7		8					
08:45	14	74	19	71			14	45 20:4	45 1	1 :	29	9	40				69
09:00	17		14					21:0				6					
09:15	15		17					21:				2					
09:30	22	00	14	(0)				21:			01	4	17				20
09:45	28	82	17	62			14				21	5	17				38
10:00	30		30					22:				4					
10:15 10:30	20 22		27 15					22: 22:				5 6					
10:30	22 27	99	15 20	92			19				25	0	15				40
11:00	23		28					23:0			_•	4					10
11:15	23 27		20 20					23:				4 1					
11:30	22		17					23:				0					
11:45	24	96	26	91			18				20	1	6				26
Total Vol.		550		632			11	82		1	143		753				1896
								Daily 1	Fotals		-						
						N	IB S	B			WB						
						16											
							10	307									
					AM									Р	M		
Split %	-	46.5%		53.5%			38.	4%		60	0.3%		39.7%				61.6%
Peak Hour		09:30		05:15			10	:00		1	4:30		13:30				14:30
Peak Hour Volume		09:30 100		05:15 111			10 19				4:30 295		13:30 122				14:30 388

Volumes for	or: Tu	esday	, Jun	e 10, 200)8		City	: San Diego					Project 7	⊭: 08-4149- 0	006
		pson S			onal Ave & Harl	bor Dr									
AM Period			SB	E	B WB			PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	28		21				
00:15 00:30	1 8		3 2					12:15 12:30	15 20		17 21				
00:45	1	10	1	6			16	12:45	14	77	17	76			153
01:00	0		2					13:00	16		21				
01:15	0		1					13:15	16		22				
01:30	0		0					13:30	18		33				
01:45	0	0	0	3			3	13:45	22	72	19	95			167
02:00	1		0					14:00	33		25				
02:15 02:30	0 1		1 1					14:15 14:30	50 87		26 36				
02:45	0	2	4	6			8	14:45	73	243	20	107			350
03:00	0		0	-			-	15:00	57		19				
03:15	1		2					15:15	40		23				
03:30	1		2					15:30	38		19				
03:45	0	2	7	11			13	15:45	16	151	14	75			226
04:00	0		10					16:00	36		10				
04:15	2		17 24					16:15	20 21		13				
04:30 04:45	1 2	5	26 19	72			77	16:30 16:45	31 20	107	8 9	40			147
05:00	3	Ū	37	, 2			.,	17:00	23	107	8	10			
05:15	10		46					17:15	20		13				
05:30	9		61					17:30	16		12				
05:45	17	39	53	197			236	17:45	25	84	8	41			125
06:00	27		47					18:00	17		2				
06:15	20		42					18:15	10		5				
06:30	22	00	38 25	140			244	18:30	6	40	4	15			FF
06:45	13	82	35	162			244	18:45	7	40	4	15			55
07:00 07:15	12 10		22 17					19:00 19:15	5 2		6 6				
07:30	15		23					19:30	7		2				
07:45	11	48	23	85			133	19:45	3	17	2	16			33
08:00	16		19					20:00	1		4				
08:15	17		18					20:15	6		1				
08:30	13		24	75			107	20:30	3		1	-			10
08:45	16	62	14	75			137	20:45	1	11	1	7			18
09:00 09:15	12 11		12 12					21:00 21:15	1 2		2 3				
09:30	14		18					21:30	3		7				
09:45	16	53	17	59			112	21:45	2	8	4	16			24
10:00	13		23					22:00	0		2				
10:15	13		13					22:15	4		8				
10:30	16		20					22:30	2		2				
10:45	15	57	13	69			126	22:45	1	7	0	12			19
11:00	19 12		16 10					23:00	2		1				
11:15 11:30	12 21		10 19					23:15 23:30	1 5		1 3				
11:45	23	75	22	67			142	23:45	3	11	3	8			19
Total Vol.		435		812			1247			828		508			1336
TULAT VUL		400		012				aily Tota	<u>اد</u>	o∠ŏ		508			1330
						NB	SB		EB	WB					
						1263	1320	Combined	-20						
						1205	1520	2583							
					AM			2000					PI	A	
Split %		34.9%		65.1%	7.111		48.3%			62.0%		38.0%			51.7%
Peak Hour				05:15			05:30					14:00			14:15
		11:30								14:15					
Volume P.H.F.		87 0.78		207 0.85			276 0.93			267 0.81		107 0.74			368 0.75
		0.70		0.00			0.70			0.01		0.71			0.70

Volumes fo	or: W	ednes	day, J	lune 11	, 2008		City	San Diego					Project #	±: 08-4149	-006
					ional Ave & F	larbor Dr	2	J					-		
AM Period			SB			/B		PM Period	NB		SB		EB	WB	
00:00	2		2					12:00	11		11				
00:15	2		2 5					12:15	18 15		12 9				
00:30 00:45	1 1	6	5 2	11			17	12:30 12:45	15 18	62	9 17	49			111
01:00	2	Ū	0				.,	13:00	18	02	24	17			
01:15	0		1					13:15	22		22				
01:30	2		0					13:30	27		29				
01:45	1	5	1	2			7	13:45	20	87	31	106			193
02:00	0		1					14:00	37		33				
02:15	0		0					14:15	56		32				
02:30 02:45	0 1	1	3 1	5			6	14:30 14:45	77 83	253	26 29	120			373
03:00	0		0	5			0	15:00	65	200	22	120			373
03:00	0		1					15:15	37		18				
03:30	0		3					15:30	31		21				
03:45	0	0	3	7			7	15:45	21	154	18	79			233
04:00	0		11					16:00	24		12				
04:15	1		18					16:15	21		13				
04:30	1 1	3	17 25	71			74	16:30 16:45	17 12	74	21 10	56			130
04:45	5	3	37	/ 1			74		22	74	9	50			130
05:00 05:15	13		41					17:00 17:15	13		4				
05:30	21		64					17:30	19		9				
05:45	18	57	49	191			248	17:45	10	64	11	33			97
06:00	18		36					18:00	5		8				
06:15	35		32					18:15	8		4				
06:30	26	04	37	404				18:30	5		7				
06:45	12	91	26	131			222	18:45	5	23	4	23			46
07:00 07:15	7 4		18 17					19:00 19:15	2 8		5 3				
07:10	9		22					19:30	5		4				
07:45	10	30	19	76			106	19:45	4	19	5	17			36
08:00	13		18					20:00	1		0				
08:15	18		20					20:15	3		4				
08:30	23		17					20:30	1		1				
08:45	15	69	18	73			142	20:45	4	9	4	9			18
09:00 09:15	19 11		16 12					21:00	4		1 3				
09:15	16		12					21:15 21:30	2 9		3 9				
09:45	12	58	12	57			115	21:45	0	15	3	16			31
10:00	17		13					22:00	2		5				
10:15	14		27					22:15	0		4				
10:30	20	. –	20	-				22:30	4		5				
10:45	14	65	18	78			143	22:45	6	12	1	15			27
11:00	19 14		13					23:00	4		2				
11:15 11:30	14 15		16 19					23:15 23:30	1 4		1 1				
11:45	18	66	22	70			136	23:45	4	13	3	7			20
Total Vol.		451		772			1223			785		530		-	1315
		401		112				aily Tota	Is	100		000			1313
						NB	SB		EB	WB					
						1236	1302	Combined	-20						
								2538							
					AM			2000					PN	Λ	
Split %		36.9%	,	63.1%	7 11 1		48.2%	-		59.7%		40.3%			51.8%
Peak Hour		05:45		05:00			05:30			14:15		13:30			14:15
Volume P.H.F.		97 0.69		191 0.75			273 0.80			281 0.90		125 0.95			390 0.87
		5.07		2.7.5			0.00			0.70		2.70			0.07

CITY OF SAN DIEGO

TRANSPORTATION DEPARTMENT VEHICLE VOLUME SUMMARY

Title1	: 26 ST
Title2	: NEWTON AV (N)
Title3	: NATIONAL AV

Interval					Day:	Tuesday
Begin	AM - BOT	н	PM -	BOTH		
12:00	8 2 3 8	21	44	143		
12:15	2		33			
12:30	3		20			
12:45	8		46			
1:00	8	14	42	136		
1:15	0		32			
1:30	0		26			
1:45	6		36			
2:00	1	20	20	153		
2:15	10 8 1		45			
2:30	8		48			
2:45	1		40			
3:00	1	13	41	284		
3:15	4		67			
3:30	6		102			
3:45	2		74			
4:00	6 2 4	52	55	195		
4:15	9	2022	50			
4:30	19		50			
4:45	20		40			
5:00	19	113	36	129		
5:15	25		48	0.000		
5:30	31		19			
5:45	38		26			
6:00	42	200	14	74		
	68	200	24			
6:15	60		11			
6:30	20		25			
6:45	30	110	10	49		
7:00	22	119	14	49		
7:15	23		14			
7:30	36		11			
7:45	38		14	<i>c</i> 1		
8:00	25	118	12	51		
8:15	28		12			
8:30	35		14			
8:45	30		13	10		
9:00	26	111	12	49		
9:15	17		14			
9:30	42		16			
9:45	26	1.000	16 7 21	* 43		
10:00	28	132	21	* 43		
10:15	27		6			
10:30	48		8			
10:45	29		8			
1:00	26	123	8	18		
11:15	34		3			
11:30	30		3 5 2			
11:45	33		2			
Total	1,036		1,324			5
Peak Hou	5:45		3:15			163-03
Volume	208		298			–
Facto	0.76		0.73			3
DayTotal	2,360					-

.



2815 02/04/03

Site:

Date:

CITY OF SAN DIEGO

TRANSPORTATION DEPARTMENT VEHICLE VOLUME SUMMARY

Title1	: 26 ST	
Title2	: NEWTON AV (N)	
Title3	: NATIONAL AV	

Begin 12:00	AM - BOTH				
		H	PM -	BOTH	
	6	17	42	133	
12:15	4		29		
12:30	6		32		
12:45	1		32 30		
1:00	8	13	38	171	
1:15	2		46		
1:30	8 2 3 4 6 4 2 6		48		
1:45	3		39		
2:00	4	16	36	180	
2:15	6	10	52	100	
	4		52		
2:30	7		40		
2:45	4	20	28	248	
3:00	0	20	28	240	
3:15	4		68		
3:30	2 8		86		
3:45	8	100	66	104	
4:00	10	65	64	196	
4:15	18		41		
4:30	22		43		
4:45	15		48		
5:00	18	106	50	131	
5:15	20		34		
5:30	30		34 24		
5:45	38		23		
6:00	36	188	33	78	
6:15	66		18		
6:30	46		11		
6:45	40		16		
7:00	28	117	16	61	
7:15	34		13		
7:30	25		20		
7:45	30		12		
	30	108	12	48	
8:00	26	108	19 9 10	40	
8:15	28		10		
8:30	30		10		
8:45	24		10	40	
9:00	34	101	12 9	48	
9:15	27		9		
9:30	16		18		
9:45	24	1000	9		
10:00	38	123	10	• 44	
10:15	19		9 10 4		
10:30	32		22 8		
10:45	34		8		
11:00	34	171	4	17	
11:15	52		1		
11:30	42		11		
11:45	43		1		
Total	1,045		1,355		
Peak Hou	6:00		3:15		
Volume	188		284		
Facto	0.71		0.83		
DayTotal	2,400				

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2815 02/05/03

Site:

Date:

					2000		0!	Care Diama					Ductost	// 00 414	0.007
Volumes fo							City	: San Diego					Project	#: 08-414	9-007
AM Period			SB	5 28 UI		VB		PM Period	NB		SB		EB	WB	
00:00	17		14					12:00	154		126		LD	WD .	
00:15	7		22					12:15	149		115				
00:30	36		14					12:30	136		105				
00:45	26	86	13	63			149	12:45	144	583	110	456			1039
01:00	11		11					13:00	138		109				
01:15	9		11					13:15	121		103				
01:30	5	22	11	44			70	13:30	121	500	97 0(405			010
01:45	7	32	8	41			73	13:45	128	508	96	405			913
02:00 02:15	5 3		7 10					14:00 14:15	142 151		103 121				
02:15	6		7					14:15	175		121				
02:45	5	19	14	38			57	14:45	152	620	134	468			1088
03:00	5		11					15:00	215		143				
03:15	8		12					15:15	220		145				
03:30	3		13					15:30	201		150				
03:45	14	30	24	60			90	15:45	174	810	115	553			1363
04:00	9		16					16:00	219		93				
04:15	7		31					16:15	150		102				
04:30	13	40	35	101			174	16:30	162	(()	95	202			10.15
04:45	14	43	49	131			174	16:45	132	663	92	382			1045
05:00	23		76					17:00	140		95				
05:15 05:30	13 35		115 108					17:15 17:30	128 108		113 81				
05:30	63	134	97	396			530	17:30	120	496	105	394			890
06:00	67	101	110	070			000	18:00	86	170	78	071			0,0
06:15	76		95					18:15	86		83				
06:30	83		98					18:30	78		71				
06:45	89	315	79	382			697	18:45	67	317	86	318			635
07:00	95		63					19:00	62		79				
07:15	97		96					19:15	83		5 9				
07:30	122		86					19:30	66		70				
07:45	95	409	81	326			735	19:45	49	260	57	265			525
08:00	85		67					20:00	58		61				
08:15	82 82		83 89					20:15	60 56		63 71				
08:30 08:45	82 115	364	89 73	312			676	20:30 20:45	56 36	210	71 53	248			458
	91	304	94	512			070		51	210	56	240			450
09:00 09:15	143		94 76					21:00 21:15	41		48				
09:30	119		96					21:30	52		54				
09:45	98	451	80	346			797	21:45	45	189	58	216			405
10:00	124		66					22:00	45		54				
10:15	109		92					22:15	31		35				
10:30	149		103					22:30	33		36				
10:45	131	513	92	353			866	22:45	21	130	22	147			277
11:00	168		97					23:00	23		27				
11:15	154		110					23:15	16		18				
11:30	154 126	610	107 107	101			1000	23:30	17 16	70	19 22	07			159
11:45	136	612	107	421			1033	23:45	16	72	23	87			
Fotal Vol.		3008		2869			5877			4858		3939			8797
								aily Tota							
						NB	SB	_	EB	WB					
						7866	6808	Combined							
								14674							
					AM								P	Μ	
Split %		51.2%		48.8%			40.1%)		55.2%		44.8%			59.9%
				11.00											15.00

11:15

1048 0.94 15:15

814 0.87 14:45

572 0.95 15:00

1363 0.93

Peak Hour

Volume

P.H.F.

11:00

612

0.91

11:30

455 0.90

Volumes fo	or: <u>Th</u>	ursdav	y, <u>Jur</u>	ne <u>12, 2</u> (008 800		City	: San Diego					Pr <u>oject</u>	#: 08-4149-	-007
ocation:		-						- 5					J		
M Period			SB		EB W	/B		PM Period	NB		SB		EB	WB	
00:00	14		24					12:00	158		126				
00:15	11		15					12:15	140		101				
00:30	39		19					12:30	136		108				
00:45	17	81	12	70			151	12:45	132	566	112	447			1013
01:00	9		11					13:00	147		106				
01:15	8		7					13:15	145		93				
01:30	7		11					13:30	131		100				
01:45	8	32	5	34			66	13:45	135	558	92	391			949
02:00	7		8					14:00	145		105				
02:15	7		17					14:15	142		103				
02:30	11		16					14:30	170		120				
02:45	2	27	12	53			80	14:45	161	618	116	444			1062
03:00	8		17					15:00	170		141				
03:15	5		13					15:15	203		165				
03:30	7		17					15:30	194		148				
03:45	4	24	23	70			94	15:45	167	734	120	574			1308
04:00	8		19					16:00	176		106				
04:15	8		38					16:15	132		102				
04:30	13	10	32	101			170	16:30	146	(10	88				1000
04:45	13	42	42	131			173	16:45	158	612	92	388			1000
05:00	19		74					17:00	117		103				
05:15	32		100					17:15	118		85				
05:30	35		113					17:30	106		96				
05:45	47	133	107	394			527	17:45	112	453	70	354			807
06:00	63		103					18:00	94		71				
06:15	100		81					18:15	82		75				
06:30	100	050	75	050			744	18:30	75		76	0.05			(07
06:45	89	352	100	359			711	18:45	71	322	83	305			627
07:00	86		76					19:00	75		62				
07:15	104		99					19:15	65		62				
07:30	128	200	91 75	241			720	19:30	60	071	85	077			F 40
07:45	80	398	75	341			739	19:45	71	271	68	277			548
08:00	71		66					20:00	64		95				
08:15	109		84					20:15	48		69				
08:30	90 47	337	89 83	322			659	20:30	54 50	214	64 63	291			507
08:45	67	337		322			039	20:45		216		291			507
09:00	99 00		95 95					21:00	44 40		45 57				
09:15 09:30	99 101		85 102					21:15	49 90		57 54				
	101 133	432	102 85	367			799	21:30 21:45	90 68	251	54 58	214			465
09:45	133	432		307			177			201		∠14			400
10:00	118		74					22:00	84 57		64				
10:15 10:20	126 144		99 100					22:15	57 54		44 26				
10:30 10:45	144 130	518	100 103	376			894	22:30 22:45	54 42	237	36 34	178			415
		JIÖ		570			074			231		1/0			413
11:00	163		96 00					23:00	39		28				
11:15 11:30	171 186		99 107					23:15 23:30	34 22		20 25				
11:30 11:45	186	702	107	429			1131	23:30 23:45	22 13	108	25 14	87			195
	.02							20.10	10						8896
otal Vol.		3078		2946			6024 D	aily Tota	ls	4946		3950			8890
						NB	SB		EB	WB					
								Combined							
						8024	6896	Combined							
								14920							
					AM			_						M	
Split %		51.1%		48.9%			40.4%)		55.6%		44.4%			59.6%

Split %	51.1%	48.9%	40.4%	55.6%	44.4%	59.6%
Peak Hou	r 11:00	11:45	11:15	15:15	15:00	15:00
Volume P.H.F.	702 0.94	462 0.91	1156 0.94	740 0.90	574 0.87	1308 0.89

Volumes fo	or: <u>W</u> e	ednes	day, J	lun <u>e 1</u> 1	, 2008		City:	San Diego					Project #	#: 08-414 ⁻	9-008
Location:							,	5							
AM Period			SB			/B		PM Period	NB		SB		EB	WB	
00:00	18		21					12:00	134		174				
00:15	7		22					12:15	138		178				
00:30 00:45	36 27	88	18 17	78			166	12:30 12:45	145 130	547	172 177	701			1248
01:00	11	00	16	70			100	13:00	130	547	165	701			1240
01:00	8		13					13:00	121		147				
01:30	4		13					13:30	123		145				
01:45	7	30	10	52			82	13:45	130	505	158	615			1120
02:00	6		8					14:00	136		163				
02:15	4		14					14:15	150		179				
02:30	5		9	54			74	14:30	192	(0 0	153	(70			1077
02:45	5	20	20	51			71	14:45	220	698	184	679			1377
03:00 03:15	5 9		11 14					15:00 15:15	269 258		203 216				
03:15	9 4		14					15:15	230		210				
03:45	10	28	25	64			92	15:45	240	997	205	848			1845
04:00	7		21					16:00	229		175				
04:15	7		31					16:15	178		174				
04:30	15		43					16:30	194		146				
04:45	11	40	65	160			200	16:45	155	756	150	645			1401
05:00	23		83					17:00	180		129				
05:15	12		150					17:15	149		142				
05:30	35	100	159	FF4			(01	17:30	128	(0)	115	F 1 7			1100
05:45	60	130	159	551			681	17:45	149	606	131	517			1123
06:00	64 68		171 115					18:00 18:15	106 100		103 112				
06:15 06:30	00 76		194					18:15	91		90				
06:45	98	306	172	652			958	18:45	68	365	98	403			768
07:00	90		188					19:00	66		90				
07:15	92		190					19:15	76		85				
07:30	115		162					19:30	64		77				
07:45	97	394	161	701			1095	19:45	48	254	73	325			579
08:00	84		132					20:00	61		71				
08:15	86		144					20:15	55		64				
08:30 08:45	75 113	358	146 141	563			921	20:30 20:45	53 42	211	65 55	255			466
	83	550	127	505			721		47	211	75	200			400
09:00 09:15	83 132		127					21:00 21:15	47 41		75 63				
09:30	116		144					21:30	56		66				
09:45	98	429	146	529			958	21:45	49	193	65	269			462
10:00	125		117					22:00	50		58				
10:15	107		139					22:15	34		41				
10:30	144		169					22:30	30		46				-
10:45	133	509	153	578			1087	22:45	22	136	30	175			311
11:00	163		167					23:00	20		29				
11:15 11:30	155 145		167 164					23:15 23:30	21 18		20 31				
11:45	143	606	164	662			1268	23:30	16	75	24	104			179
	-														
Total Vol.		2938		4641			7579 Da	ily Tota	lc	5343		5536			10879
						NB	SB		EB	WB					
						8281		Combined							
								18458							
0.000					AM					10.10		50.00	PI	N	
Split %		38.8%		61.2%			41.1%			49.1%		50.9%			58.9%
Peak Hour		11:00		06:30			11:00			15:00		15:00			15:00
Volume		606		744			1268			997		848			1845
P.H.F.		0.93		0.96			0.96			0.92		0.95			0.97
EB WB 9 1315															

9 1315															
9 1315															
9 1315															
·															
9 1179															
0 1301															
6 1671															
5 1514															
9 1133															
9 795															
4 745															
1 628															
3 534															
3 626															
2 587															
3 247															
39 11530															
PM															
5% 59.9%															
30 15:15 74 1715															

/olumes fc							City:	San Diego				Р	roject #	: 08-4149-0	009
ocation: AM Period		n Stilk			Harbor [B			DM Deried	ND		SB		B	WB	
00:00	41		<u>SB</u> 13		D	WB		PM Period 12:00	<u>NB</u> 207		<u>30</u> 144		D	VVD	
00:00	35		13					12:00	155		144				
00:30	83		23					12:30	171		131				
00:45	36	195	13	62			257	12:45	166	699	140	560			1259
01:00	14		9					13:00	160		118				
01:15	12		7					13:15	192		126				
01:30	13		5					13:30	187		114				
01:45	9	48	1	22			70	13:45	153	692	126	484			1176
02:00	8		7					14:00	175		129				
02:15	6		14					14:15	198		152				
02:30	11		12					14:30	249		118				
02:45	10	35	10	43			78	14:45	198	820	136	535			1355
03:00	13		13					15:00	253		165				
03:15	8		15					15:15	307		176				
03:30	6		20					15:30	224		198				
03:45	12	39	27	75			114	15:45	227	1011	139	678			1689
04:00	11		26					16:00	147		115				
04:15	16		30					16:15	116		121				
04:30	15		44					16:30	136		83				
04:45	26	68	68	168			236	16:45	121	520	93	412			932
05:00	34		109					17:00	122		74				
05:15	28		155					17:15	94		84				
05:30	41		174					17:30	93		74				
05:45	77	180	203	641			821	17:45	96	405	60	292			697
06:00	46		182					18:00	92		62				
06:15	80		168					18:15	95		72				
06:30	70		204					18:30	95		58				
06:45	54	250	145	699			949	18:45	81	363	41	233			596
07:00	60		156					19:00	83		43				
07:15	61		120					19:15	73		41				
07:30	52		134					19:30	67		30				
07:45	46	219	117	527			746	19:45	72	295	44	158			453
08:00	50		108					20:00	54		41				
08:15	41		104					20:15	54		31				
08:30	66		113					20:30	59		31				
08:45	79	236	108	433			669	20:45	37	204	28	131			335
09:00	109		100					21:00	32		24				
09:15	118		97					21:00	51		34				
09:30	130		104					21:30	45		27				
09:45	148	505	117	418			923	21:45	54	182	30	115			297
10:00	160		82					22:00	41		33				
10:00	161		125					22:00	30		28				
10:30	165		115					22:30	42		19				
10:45	168	654	136	458			1112	22:45	36	149	20	100			249
11:00	193		127		-			23:00	20		14				
11:15	220		123					23:15	22		14				
11:30	201		139					23:30	19		25				
11:45	195	809	137	526			1335	23:45	11	72	17	70			142
otal Vol.		3238		4072			7310			5412		3768			9180
							D	aily Tota							
						NB	SB		EB	WB					
						8650	7840	Combined							
					6 N 4			16490							
plit %		44.3%		55.7%	AM		44.3%	-		59.0%		41.0%	PN		55.7%
ak Hour															
ak Hour		11:15		05:45			11:15			15:00		15:00			15:00

1011 0.82

678

0.86

1689

0.87

1366

0.97

757 0.93

823

0.94

Volume

P.H.F.

Volumes fo	or: Th	ursda	y, Jun	ne 12,	2008			City:	San Diego					Project #	#: 08-4	149-009	
		St k	otwn M	Main S	t & Harbor	Dr											
AM Period			SB		EB	WB			PM Period	NB		SB		EB	WB		
00:00	43		16						12:00	203		133					
00:15	52		15						12:15	183		140					
00:30 00:45	95 43	233	17 10	58			-	291	12:30 12:45	188 175	749	140 131	544				1293
01:00	21	200	7	50			2	. 7 1	13:00	170	747	142	544				1275
01:00	16		, 5						13:00	161		142					
01:30	14		7						13:30	165		135					
01:45	12	63	6	25				88	13:45	143	639	113	518				1157
02:00	10		10						14:00	178		133					
02:15	6		9						14:15	174		119					
02:30	9		8						14:30	263		150					
02:45	5	30	16	43				73	14:45	184	799	132	534				1333
03:00	15		13						15:00	254		166					
03:15	12		19						15:15	259		169					
03:30	8	4.4	16 25	72			-	17	15:30	223	074	182	640				1400
03:45	9	44	25	73				17	15:45	238	974	131	648				1622
04:00 04:15	19 18		27 48						16:00 16:15	157 123		127 110					
04:15	21		40 43						16:15	125		89					
04:30	23	81	43 69	187			2	268	16:45	119	554	91	417				971
05:00	28		97						17:00	96		77					
05:00	35		143						17:15	116		85					
05:30	37		198						17:30	85		77					
05:45	44	144	196	634			7	78	17:45	91	388	54	293				681
06:00	59		186						18:00	94		54					
06:15	68		169						18:15	98		52					
06:30	43		121						18:30	91		50					
06:45	54	224	148	624			8	848	18:45	68	351	46	202				553
07:00	71		136						19:00	69		46					
07:15	63		184						19:15	66		44					
07:30	66 58	258	154 136	610			c	868	19:30	81 67	202	52 39	101				464
07:45		200		010			c	000	19:45		283		181				404
08:00 08:15	55 73		111 101						20:00 20:15	71 70		38 33					
08:15	72		96						20:15	39		25					
08:45	66	266	118	426			e	92	20:45	54	234	31	127				361
09:00	110		104						21:00	54		29					
	107		115						21:15	56		28					
09:30	134		111						21:30	47		29					
09:45	182	533	114	444			ç	977	21:45	55	212	35	121				333
10:00	135		106						22:00	61		46					
	136		130						22:15	31		35					
	145	F.0.2	99 150	40.5				000	22:30	41		27	100				<u></u>
10:45	182	598	159	494			1	092	22:45	33	166	22	130				296
	204		119						23:00	24		15					
11:15 11:30	242 231		160 154						23:15 23:30	23 38		21 14					
11:30 11:45	231	903	154 161	594			1.	497	23:30 23:45	38 21	106	14 16	66				172
									20.10	21		10					
Total Vol.		3377		4212			7!	589	11. 	1	5455		3781				9236
									aily Tota								
								SB		EB	WB						
						88	332 7	993	Combined								
									16825								
					AM				-					PI	M		
Split %		44.5%)	55.5%			45	5.1%	-		59.1%		40.9%		M		54.9%
Split % Peak Hour		<u>44.5%</u> 11:00		55.5% 05:30)			5. 1% 1:15			59.1% 15:00		40.9% 14:45		M		54.9% 15:00
)		1		-						M		

Volumes fo							City:	San Diego				Pr	oject #: 08-	4149-010	
		d St			& Wabash Blv B WE			DM Deried	ND		SB	E	B WE	2	
M Period			SB		<u>B</u> WE	5		PM Period	NB			E	B VVI	5	
00:00 00:15	10 4		8 7					12:00 12:15	113 136		164 154				
00:30	3		, 7					12:30	119		157				
00:45	9	26	3	25			51	12:45	112	480	140	615			1095
01:00	2		4					13:00	98		119				
01:15	3		6					13:15	112		109				
01:30	0		2					13:30	106		104				
01:45	1	6	5	17			23	13:45	124	440	116	448			888
02:00	2		2					14:00	120		130				
02:15	2		1					14:15	109		130				
02:30	1		2					14:30	103		125				
02:45	0	5	3	8			13	14:45	132	464	136	521			985
03:00	1		3					15:00	112		129				
03:15	0		0					15:15	130		135				
03:30	3		4					15:30	127		141				
03:45	1	5	8	15			20	15:45	102	471	154	559			1030
04:00	2		10					16:00	136		110				
04:15	4		13					16:15	124		89				
04:30	5		18					16:30	102		104				
04:45	4	15	22	63			78	16:45	119	481	103	406			887
05:00	9		27					17:00	138		97				
05:15	6		40					17:15	141		73				
05:30	16		59					17:30	154		80				
05:45	21	52	62	188			240	17:45	151	584	74	324			908
06:00	33		85					18:00	105		82				
06:15	31		139					18:15	87		78				
06:30	36		137					18:30	74		75				
06:45	40	140	148	509			649	18:45	75	341	82	317			658
07:00	45		154					19:00	85		78				
07:15	42		123					19:15	61		109				
07:30	40		108					19:30	56		96				
07:45	47	174	85	470			644	19:45	59	261	84	367			628
08:00	55		74					20:00	42		64				
08:15	65		95					20:15	48		66				
08:30	60		109					20:30	34		49				
08:45	62	242	104	382			624	20:45	59	183	44	223			406
09:00	88		97					21:00	49		46				
09:15	96		101					21:15	36		41				
09:30	102		103					21:30	38		46				
09:45	112	398	98	399			797	21:45	28	151	38	171			322
10:00	100		99					22:00	19		21				
10:15	115		89					22:15	13		19				
10:30	125		104					22:30	13		25				
10:45	148	488	107	399			887	22:45	14	59	25	90			149
11:00	166		129					23:00	18		18				
11:15	151		151					23:15	11		12				
11:30	131		161					23:30	5		7				
11:45	148	596	145	586			1182	23:45	12	46	7	44			90
otal Vol.		2147		3061			5208			3961		4085			8046
								aily Tota							
						NB	SB		EB	WB					
						6108	7146	Combined							
					AM			13254					PM		
Split %		41.2%)	58.8%			39.3%			49.2%		50.8%			60.7%
eak Hour		10:45		11:30			11:00			17:00		12:00			12:00
		50/		101			1100								

584 0.95

615

0.94

1095

0.94

1182

0.98

624 0.95

5**9**6

0.90

Volume

P.H.F.

	r. T-	urada		12-28	0.0		<u><u>o</u>u</u>	Con Diana					Droient	<i>#.</i> 00 414	0.010
Volumes fo						L	City	: San Diego					Project #	#: 08-414	9-010
AM Period		ม่อเม	SB		& Wabash Blvc B WB	1		PM Period	NB		SB		EB	WB	
00:00	7		6	E				12:00	134		150				
00:15	7		11					12:15	126		154				
00:30	9		9					12:30	106		125				
00:45	3	26	6	32			58	12:45	103	469	145	574			1043
01:00	8		9					13:00	123		124				
01:15	4		3					13:15	122		127				
01:30	3		4					13:30	130		124				
01:45	0	15	3	19			34	13:45	111	486	110	485			971
02:00	3		7					14:00	126		110				
02:15	7		4					14:15	120		124				
02:30	3		4					14:30	103		107				
02:45	2	15	2	17			32	14:45	115	464	131	472			936
03:00	1		3					15:00	137		154				
03:15	3		3					15:15	118		147				
03:30	2		5					15:30	128		166				
03:45	1	7	5	16			23	15:45	134	517	132	599			1116
04:00	4		6					16:00	163		128				
04:15	1		9					16:15	136		118				
04:30	8		13					16:30	124		104				
04:45	4	17	21	49			66	16:45	98	521	92	442			963
05:00	8		30					17:00	103		88				
05:15	7		43					17:15	118		94				
05:30	14		46					17:30	88		91				
05:45	22	51	60	179			230	17:45	100	409	85	358			767
06:00	24		76					18:00	89		96				
06:15	26		106					18:15	86		69				
06:30	33		112					18:30	71		97				
06:45	33	116	127	421			537	18:45	64	310	74	336			646
07:00	43		162					19:00	57		85				
07:15	60		119					19:15	72		87				
07:30	54		104					19:30	43		73				
07:45	48	205	96	481			686	19:45	60	232	71	316			548
08:00	46		75					20:00	52		70				
08:15	54		84					20:00	42		69				
08:30	46		81					20:30	46		53				
08:45	64	210	93	333			543	20:45	51	191	52	244			435
09:00	92		71					21:00	46		51				
09:00	92 94		90					21:00	40 29		43				
09:15	74 106		101					21:15	29		43 50				
09:45	92	384	113	375			759	21:45	23	124	29	173			297
	95		102				,	22:00	23		26				2/1
10:00 10:15	95 160		102 104					22:00 22:15	23 19		26 36				
10:15	126		104 95					22:15	19		30 19				
10:30	141	522	⁹³ 107	408			930	22:30	13	73	27	108			181
			105				,			, 5					101
11:00 11:15	155 136		105 156					23:00 23:15	16 19		14 24				
	136		156 163					23:15 23:30	19 15		24 19				
	143	591	149	573			1164	23:30	7	57	11	68			125
	. 15		/					20.10	,						
Total Vol.		2159		2903			5062			3853		4175	<u></u>		8028
								aily Tota							
						NB	SB		EB	WB					
						6012	7078	Combined							
					AM			13090					PI		
Split %		42.7%		57.3%	AIVI		38.7%	_		48.0%		52.0%	PI	VI	61.3%
Peak Hour							11:15			15:30					15:00
		11:00		11:15			11:15			15:30		15:00			15:00

561 0.90

599

0.90

1116

0.95

1188

0.93

Volume

P.H.F.

591

0.94

618

Volumes fo							City:	San Diego					Project #	±: 08-4149-0	011
		d St			Blvd & F EB	Harbor Dr WB		DM Deried	ND		SB		EB		
M Period			SB		EB	VV B		PM Period	NB				EB	WB	
00:00 00:15	15 23		4 10					12:00 12:15	190 212		173 178				
00:15	23 27		4					12:15	212		188				
00:30	16	81	4 5	23			104	12:30	163	772	149	688			1460
01:00	9	01	7	20			101	13:00	164	,,,,	160	000			1100
01:00	9 5		7					13:00	164 164		160				
01:30	3		, 9					13:30	197		151				
01:45	2	19	4	27			46	13:45	206	731	194	672			1403
02:00	3		2					14:00	255		180				
02:15	10		1					14:15	246		127				
02:30	1		1					14:30	255		168				
02:45	5	19	7	11			30	14:45	271	1027	149	624			1651
03:00	2		7					15:00	263		177				
03:15	3		10					15:15	283		176				
03:30	4		23					15:30	206		147				
03:45	9	18	31	71			89	15:45	254	1006	147	647			1653
04:00	10		43					16:00	177		114				
04:15	12		45					16:15	200		126				
04:30	19		62					16:30	155		120				
04:45	17	58	105	255			313	16:45	149	681	117	477			1158
05:00	20		117					17:00	148		102				
05:15	37		190					17:15	133		133				
05:30	66		230					17:30	116		112				
05:45	61	184	226	763			947	17:45	117	514	96	443			957
06:00	63		220					18:00	86		95				
06:15	89		314					18:15	76		67				
06:30	117		223					18:30	72		88				
06:45	114	383	276	1033			1416	18:45	54	288	60	310			598
07:00	130		299					19:00	62		66				
07:15	96		189					19:15	55		73				
07:30	98		171					19:30	48		68				
07:45	96	420	168	827			1247	19:45	60	225	81	288			513
08:00	132		171					20:00	53		55				
08:15	121		141					20:15	44		44				
08:30	166		132					20:30	43		51				
08:45	166	585	126	570			1155	20:45	54	194	65	215			409
09:00	162		159					21:00	34		48				
09:15	146		130					21:15	40		44				
09:30	166		116	500				21:30	69	0.07	51	10/			000
09:45	141	615	127	532			1147	21:45	64	207	43	186			393
10:00	158		111					22:00	48		28				
10:15	208		150					22:15	31		29 26				
10:30	192 221	700	158 219	627			1404	22:30	26 20	105	26 24	107			222
10:45	231	789	218	637			1426	22:45	20	125	24	107			232
11:00	246		153					23:00	17 12		21 17				
11:15 11:30	231 211		175 168					23:15 23:30	13 15		17 16				
11:30 11:45	211	901	209	705			1606	23:30 23:45	15 14	59	10	66			125
	-10		207					20.10							
otal Vol.		4072		5454			9526			5829		4723			10552
								aily Tota							
						NB	SB		EB	WB					
						9901	10177	Combined							
								20078							
					AM								P۱	Λ	
plit %		42.7%	,	57.3%			47.4%	-		55.2%		44.8%			52.6%
eak Hour		10:45		06:15			10:45			14:30		13:15			14:30
Volume		919		1112			1633			1072		692			1742
P.H.F.		0.93		0.89			0.91			0.97		0.89			0.95

0.97

0.91

0.89

0.95

P.H.F.

0.93

Volumes fo	or: Th	ursda	y, Jur	ne 12, 2	2008			City:	San Diego					Project	#: 08-	4149-01	1
Location:		l St I		Wabas			Dr										
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00:00	17		9						12:00	165		164					
00:15 00:30	24 16		7 5						12:15 12:30	191 141		185 174					
00:30	10	68	6	27				95	12:30	181	678	169	692				1370
01:00	6	00	6					,,,	13:00	199	0,0	160	072				1070
01:15	10		3						13:15	188		156					
01:30	9		4						13:30	146		129					
01:45	3	28	5	18				46	13:45	237	770	149	594				1364
02:00	11		7						14:00	220		172					
02:15	7		4						14:15	246		127					
02:30	2		6						14:30	253		145					
02:45	4	24	6	23				47	14:45	308	1027	155	5 99				1626
03:00	4		7						15:00	254		166					
03:15	5		10						15:15	253		157					
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03:45	8	25	24	54				79	15:45	233	959	153	620				1579
04:00	8 10		38 41						16:00	190 176		136					
04:15 04:30	10 13		41 49						16:15 16:30	176 171		122 112					
04:30	21	52	49 93	221				273	16:30	129	666	157	527				1193
05:00	26	02	136					270	17:00	165		143	027				1170
05:00	20 49		173						17:00	117		122					
05:30	68		243						17:30	125		139					
05:45	63	206	242	794				1000	17:45	92	499	100	504				1003
06:00	88		266						18:00	80		61					
06:15	93		214						18:15	68		58					
06:30	125		244						18:30	79		73					
06:45	105	411	284	1008				1419	18:45	69	296	64	256				552
07:00	121		271						19:00	58		94					
07:15	105		195						19:15	65		56					
07:30	93		174						19:30	60		64					
07:45	88	407	168	808				1215	19:45	82	265	58	272				537
08:00	120		161						20:00	50		53					
08:15	97		127						20:15	62		55					
08:30	143	474	110	500				077	20:30	37	107	37	101				270
08:45	114	474	105	503				977	20:45	38	187	46	191				378
09:00	129		128						21:00	27		33					
09:15 09:30	119 148		122 114						21:15 21:30	34 47		49 33					
09:45	183	579	105	469				1048	21:30	31	139	40	155				294
10:00	220	0,,	162	107				1010	22:00	21	107	32	100				271
10:00	220 198		147						22:00	25		32 18					
10:30	202		145						22:30	28		33					
10:45	213	833	161	615				1448	22:45	23	97	27	110				207
11:00	206		166						23:00	18		16					
11:15	221		236						23:15	27		12					
11:30	204		186						23:30	14		9					
11:45	205	836	189	777				1613	23:45	16	75	16	53				128
Total Vol.		3943		5317				9260			5658		4573				10231
									aily Tota	ls							
							NB	SB		EB	WB						
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Split %		42.6%		57.4%				47.5%	-		55.3%		44.7%				52.5%
Peak Hour		10:45		06:15				11:00			14:30		12:00				14:30
Volume		844		1013 0.89				1613 0.88			1068 0.87		692				1691
P.H.F.		0.95											0.94				0.91

Daily Totals NB SB EB WB 964 796 Combined 1760 PM PM Split % 46.5% 53.5% 36.2% 59.5% 40.5% 63.8% Peak Hour 08:00 06:45 07:30 14:15 16:30 16:30 Volume 68 74 131 100 74 158	Volumes fo	or: W	ednes	day, .	June 1	1, 2008		City	: San Diego					Project #	⊭: 08-4149	-012
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D2 s01011430327700103413403 00271113413403 30111111103 1511271530238803 3015333127153023803 4315127153023151104 150-11000160021171504 45375111816452293125904 501141-170016001504 501141-173017151205 001141-173017151206 501141-173017151206 501141-173017151206 50512111071414141407 701014-1815151908 4551218167148607 151014-2100131207 151014-2200013121609 1613 <t< td=""><td>02:00</td><td>4</td><td></td><td>1</td><td></td><td></td><td></td><td></td><td>14:00</td><td>15</td><td></td><td>8</td><td></td><td></td><td></td><td></td></t<>	02:00	4		1					14:00	15		8				
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Daily Totals NB SB EB WB 949 737 Combined 1686 1686 1686 Split % 46.3% 53.7% 35.9% 61.9% 38.1% 64.1% Peak Hour 10:15 06:45 11:15 14:15 15:45 16:00 Volume 65 68 100 105 59 152			60		38			98			20		3			23
Daily Totals NB SB EB WB 949 737 Combined 1686 1686 1686 Split % 46.3% 53.7% 35.9% 61.9% 38.1% 64.1% Peak Hour 10:15 06:45 11:15 14:15 15:45 16:00 Volume 65 68 100 105 59 152	Total Vol		280		325			605			669	Δ	12			1081
NB SB EB WB 949 737 Combined 1686 1686 Split % 46.3% 53.7% 35.9% 61.9% 38.1% 64.1% Peak Hour 10:15 06:45 11:15 14:15 15:45 16:00 Volume 65 68 100 105 59 152			200						ailv Tota	S						
949 737 Combined 1686 1686 Split % 46.3% 53.7% 35.9% 61.9% 38.1% 64.1% Peak Hour 10:15 06:45 11:15 14:15 15:45 16:00 Volume 65 68 100 105 59 152							NB				WB					
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AM PM Split % 46.3% 53.7% 35.9% 61.9% 38.1% 64.1% Peak Hour 10:15 06:45 11:15 14:15 15:45 16:00 Volume 65 68 100 105 59 152																
Peak Hour 10:15 06:45 11:15 14:15 15:45 16:00 Volume 65 68 100 105 59 152						AM			_					PM		
Volume 65 68 100 105 59 152	Split %		46.3%	, 5	53.7%			35.9%			61.9%	38	3.1%			64.1%
	Peak Hour		10:15		06:45			11:15			14:15	1	5:45			16:00
P.H.F. 0.81 0.81 0.86 0.88 0.87 0.90																
	P.H.F.		0.81		0.81			0.86			0.88	(0.87			0.90

		TA ST	•	BERGIA ST - MAI	N ST)	[3355]	• • -		65		ADT: 4900	
AM Period			SB			PM Period	NB		SB			
00:00	2		4			12:00	26		30			
00:15	4		7			12:15	36		25 25			
00:30	4 2	10	2 1	14	26	12:30	29 22	100	25 26	106		229
00:45		12		14	20	12:45	32	123		100		229
01:00	1		1			13:00	32		33			
01:15	2		2			13:15	23		30 22			
01:30	1 2	6	2 3	8	14	13:30 13:45	22 40	117	33 31	127		244
01:45		0		0	14			117		127		244
02:00	0 0		5 8			14:00	32 42		29 31			
02:15 02:30	2		о 6			14:15 14:30	42 42		30 30			
02:30	2	3	2	21	24	14:30	42 57	173	29	119		292
03:00	0	5	4	21	24	15:00	58	175	46	117		272
03:00	1		4			15:00	76		40 47			
03:30	2		, 7			15:15	62		22			
03:45	6	9	6	24	33	15:45	64	260	38	153		413
04:00	2		10	2.		16:00	106	200	53			
04:00	4		9			16:15	100		32			
04:30	3		, 7			16:30	101		41			
04:45	6	15	8	34	49	16:45	84	395	50	176		571
05:00	8		10			17:00	69		44			
05:15	10		18			17:15	86		49			
05:30	15		20			17:30	76		45			
05:45	22	55	27	75	130	17:45	76	307	45	183		490
06:00	28		31			18:00	66		42			
06:15	27		45			18:15	36		34			
06:30	32		21			18:30	28		31			
06:45	32	119	31	128	247	18:45	22	152	20	127		279
07:00	35		60			19:00	25		31			
07:15	34		54			19:15	27		28			
07:30	42		64			19:30	20		25			
07:45	34	145	62	240	385	19:45	27	99	17	101		200
08:00	46		80			20:00	23		18			
08:15	33		70			20:15	19		12			
08:30	28		60			20:30	23		16			
08:45	19	126	40	250	376	20:45	21	86	10	56		142
09:00	22		20			21:00	27		8			
09:15	18		15			21:15	19		14			
09:30	21		10			21:30	20		17			
09:45	20	81	15	60	141	21:45	17	83	12	51		134
10:00	18		18			22:00	12		12			
10:15	18		20			22:15	13		3			
10:30	19		21			22:30	16		6			
10:45	21	76	30	89	165	22:45	8	49	1	22		71
11:00	20		30			23:00	8		4			
11:15	20		25			23:15	5		4			
11:30	28	~~	26	100		23:30	5	05	6			
11:45	30	98	27	108	206	23:45	7	25	0	14		39
Total Vol.		745		1051	1796			1869		1235		3104
								NB		SB	Daily Totals	Combined
				AM				2614		2286	PM	4900
Split %		41.5%		58.5%	36.7%			60.2%		39.8%		63.3%
Peak Hour		07:15		07:30	07:30			16:00		16:45		16:00
Volume		156		276	431			395		188		571
P.H.F.		0.85		0.86	0.86			0.97				071

Transportation Studies, Inc.

1350 Reynolds Avenue, Ste 115

Irvine, CA. 92614

Location	: LOGAN	I AVENUE	
Segment	: B/T 167	TH ST & SIGSBEE ST	
Client	: WILSO	N CO	
Interval		SB	
Begin	AM	PM	

Site:	SAN DIEGO
Date:	12/04/07

Interval		— SB			-	- NB				— Combi	ned —		Day:	Tuesday
Begin	AM		PM		AM		PM		AM		PM			
12:00	0	5	54	163	4	11	40	131	4	16	94	294		
12:15	2		33		2		26		4		59			
12:30	I		45		4		34		5		79			
12:45	2		31		I		31		3		62			
01:00	. 0	4	36	149	0	6	32	120	0	10	68	269		
01:15	2		34	112	2	Ű	28	120	4	10	62	202		
01:30	1		34		õ		32		1		66			
01:45			45		4		28		5		73			
	1	1		122	4	3		1.47	0	4		276		
02:00	0	1	32	133		د	31	143		4	63	270		
02:15	0		34		0		34		0		68			
02:30	0		29		0		38		0		67			
02:45	1		38		3		40		4		78			
03:00	1	4	38	183	3	6	59	152	4	10	97	335		
03:15	0		50		1		33		1		83			
03:30	1		50		2		34		3		84			
03:45	2		45		0		26		2		71			
04:00	2	15	58	170	2	17	30	134	4	32	88	304		
04:15	3		31		4		28		7		59			
04:30	2		43		5		40		7		83			
04:45	8		38		6		36		14		74			
05:00	6	67	48	127	4	38	40	107	10	105	88	234		
05:15	9	• •	24		10	•••	27		19		51			
05:30	18		34		10		22		28		56			
05:45	34		21		10		18		48		39			
06:00	26	100	26	68	14	67	20	62	38	167	46	130		
		100		00		07	14	0.4	45	107	31	1.50		
06:15	30		17		15									
06:30	22		11		22		16		44		27			
06:45	22		14		18		12		40	0.40	26			
07:00	22	109	14	34	24	131	7	41	46	240	21	75		
07:15	19		6		33		12		52		18			
07:30	26		10		40		14		66		24			
07:45	42		4		34		8		76		12			
08:00	32	111	14	43	31	113	9	43	63	224	23	86		
08:15	22		10		22		8		44		18			
08:30	38		10		26		16		64		26			
08:45	19		9		34		10		53		19			
09:00	28	123	6	25	36	121	2	12	64	244	8	37		
09:15	30		7		23		1		53		8			
09:30	33		8		36		5		69		13			
09:45	32		4		26		4		58		8			
10:00	32	131	4	16	26	116	Ó	7	58	247	4	23		
10:15	42		5		34		4		76		9	-		
10:30	22		3		28		3		50		6			
10:30	35		4		28		Ő		63		4			
	22	140		25	28 19	122	3	10	50	262	7	35		
11:00	31	140	4	25		122		10	50	202		00		
11:15	35		12		34		4		69		16			
11:30	32		4		34		3		66		7			
11:45	42		5		35		0		77		5			
Fotals	810		1,136		751		962		1,561		2,098			
Split%	51.9		54.1		48.1		45.9							
Day Totals		1,946				1,713				3,659				
						46.8				2,000				
Day Splits		53.2				40.8								
					*									
Peak Hour	11:00		03:15		07:15		02:15		11:00		02:45			
Volume	140		203		138		171		262		342			
Factor	0.83		0.88		0,86		0.72		0.85		0.88			
	0.00		0.00		0,00		0.72		0.00		0.00			

Volumes for: Tuesday,	, June 10, 2008				City:	San Diego		Proj	ect #:	08-4	1149-013	
ocation: Logan Ave	btwn I-5 SB C	Off-ram	пр & C	Cesar Cha	avez Pkwy	/						
M Period NB	SB EB		WB			PM Period NB	SB	EB		WB		
00:00	12		0			12:00		94		16		
00:15	9		1			12:15		101		26		
00:30	9		0			12:30		130		22		
00:45	8	38	0	1	39	12:45		128	453	24	88	541
01:00	9		1			13:00		116		27		
01:15	8		0			13:15		114		23		
01:30	6		0			13:30		77		17		
01:45	13	36	0	1	37	13:45		107	414	19	86	500
02:00	8		0			14:00		118		20		
02:15	1		0			14:15		106		19		
02:30	9		0			14:30		134		22		
02:45	7	25	0	0	25	14:45		106	464	19	80	544
03:00	11		0			15:00		116		15		
03:15	1		3			15:15		111		13		
03:30	4		2			15:30		120		16		
03:45	13	29	0	5	34	15:45		104	451	14	58	509
04:00	8		0			16:00		140		17		
04:00	12		3			16:15		140		15		
04:30	26		0			16:30		198		18		
04:45	21	67	0	3	70	16:45		164	658	9	59	717
05:00	20		5			17:00		174		7		
05:15	38		8			17:15		156		, 12		
05:30	56		0			17:30		148		13		
05:45	69	183	0	13	196	17:45		162	640	10	42	682
06:00	57		0			18:00		78	010	14		002
06:15	60		6			18:15		58		17		
06:30	76		0			18:30		59		6		
06:45	66	259	0	6	265	18:45		53	248	2	39	287
07:00	76	207	14	Ū	200	19:00		61	2.10	0	0,	207
07:15	83		2			19:00		58		1		
07:30	83		2			19:30		35		0		
07:45	76	318	22	40	358	19:45		35	189	2	3	192
	85	010	22	10	000			48	107	0	0	172
08:00 08:15	85 90		22 28			20:00 20:15		48 39				
08:15	82		28 22			20:15		39 42		6 10		
08:30	02 101	358	22 10	82	440	20:30		42	171	6	22	193
		300		02	440				171	-	22	175
09:00	77		26			21:00		24		2		
09:15	89 74		7			21:15		48		0		
09:30	74	317	14 15	62	379	21:30		60 54	186	0 7	9	195
09:45		317		02	3/9	21:45			180		9	195
10:00	104		16 12			22:00		51		0		
10:15	85		12			22:15		52		0		
10:30	98	274	10 14	FO	104	22:30		77	204	0	0	204
10:45	87	374	14	52	426	22:45		24	204	0	0	204
11:00	118		14			23:00		28		0		
11:15	114		19 12			23:15		33		0		
11:30	103	457	13 12	EQ	515	23:30		18	00	0 0	0	90
11:45	122	457	12	58	515	23:45		11	90	0	0	90
otal Vol.		2461		323	2784				4168		486	4654
					Da	ily Totals						
				NB	SB	EB	WB					
						Combined 6629	809					
							809					
						7438			P • •			
		AM		11.101	07.15	7458			PM		10.10	
Split %		AM 88.4%		11.6%	37.4%	7458			PM 89.6%		10.4%	62.6%

457 0.94

Volume

P.H.F.

94 0.84

523

0.86

692 0.87 99 0.92

741

Volumes for: Wednesd	lay, June 11, 20	08			City:	San Diego			Proj	ect #:	: 08-4	149-013	
Location: Logan Ave)ff-ram		Cesar Cha	avez Pkw						14.0		
AM Period NB	SB EB		WB			PM Period	NB	SB	EB		WB		
00:00	16		0			12:00			94		30		
00:15	6		1			12:15			110		12		
00:30	5	07	0			12:30			106		19		544
00:45	10	37	0	1	38	12:45			114	424	29	90	514
01:00	8		0			13:00			105		19		
01:15	14		0			13:15			102		15		
01:30	5 8	25	0 0	0	25	13:30			108 111	404	16 17	47	493
01:45		35		0	35	13:45				426		67	493
02:00	6		0			14:00			114		20		
02:15 02:30	1		1 1			14:15 14:30			116 120		22 17		
02:45	4	12	0	2	14	14:30			91	441	16	75	516
	7	12	0	2	17				138	111	17	75	510
03:00 03:15	4		2			15:00 15:15			138		17		
03:30	7		0			15:30			123		16		
03:45	, 10	28	0	2	30	15:45			187	583	20	66	649
04:00	12		0	_		16:00			210		17	27	
04:15	12		0			16:00			160		19		
04:30	21		0			16:30			160		16		
04:45	36	83	0	0	83	16:45			150	680	7	59	739
05:00	30		0			17:00			170		11		
05:15	29		4			17:15			159		10		
05:30	65		0			17:30			141		7		
05:45	56	180	0	4	184	17:45			124	594	13	41	635
06:00	48		2			18:00			84		10		
06:15	61		13			18:15			52		14		
06:30	60		17			18:30			64		7		
06:45	67	236	10	42	278	18:45			48	248	5	36	284
07:00	76		17			19:00			50		1		
07:15	62		11			19:15			57		5		
07:30	78		19			19:30			73		0		
07:45	75	291	17	64	355	19:45			48	228	7	13	241
08:00	88		13			20:00			49		4		
08:15	94		16			20:15			26		5		
08:30	94		13			20:30			43		4		
08:45	44	320	12	54	374	20:45			30	148	1	14	162
09:00	56		20			21:00			32		0		
09:15	91		33			21:15			55		0		
09:30	83		17			21:30			141		0		
09:45	83	313	16	86	399	21:45			79	307	5	5	312
10:00	73		17			22:00			46		0		
10:15	114		12			22:15			40		0		
10:30	94	270	15 27	71		22:30			41	140	0	0	140
10:45	92	373	27	71	444	22:45			13	140	0	0	140
11:00	86		18			23:00			34		0		
11:15	119		21 10			23:15			20		0		
11:30 11:45	108 104	417	18 30	87	504	23:30 23:45			27 14	95	0 0	0	95
	104		30			23.40			14		0	0	
Total Vol.		2325		413	2738					4314		466	4780
						aily Tota	ls						
				NB	SB		EB	WB					
						Combined	6639	879					
						7518							
		AM								РM			
Split %		84.9%		15.1%	36.4%	-				90.3%		9.7%	63.6%
Peak Hour		11:15		11:15	11:15					15:45		12:00	15:45
Volume		425		99	524					717		90	789
P.H.F.		0.89		0.83	0.94					0.85		0.75	0.87

/olumes for: ⁻	Tuesday,	June 10	, 2008				City:	San Diego		Pro	oject #	: 08-4	1149-014	
ocation: Lo	gan Ave	btwn B	Evans St	& Sa	mpsoi	n St								
M Period N	В	SB	EB		WB			PM Period NB	S	ib eb		WB		
00:00			3		0			12:00		26		24		
00:15			2		1			12:15		32		20		
00:30			3		1			12:30		25		20		
00:45			1	9	1	3	12	12:45		25	108	31	95	203
01:00			1		1			13:00		26		18		
01:15			0		1			13:15		27		21		
01:30			1		0			13:30		21		23		
01:45			4	6	2	4	10	13:45		22	96	19	81	177
02:00			2		3			14:00		22		28		
02:15			1		0			14:15		26		26		
02:30			2		0			14:30		33		32		
02:45			1	6	0	3	9	14:45		34	115	44	130	245
03:00			1		0			15:00		30		32		
03:00			0		3			15:15		33		21		
03:30			0		1			15:30		40		19		
03:45			3	4	0	4	8	15:45		40	140	26	98	238
			0		0		5			39	. 10	27		200
04:00 04:15			2					16:00 16:15		39 40		27 31		
04:15 04:30			2		4 5			16:15		40 41		31 27		
04:30			3 4	9	4	13	22	16:45		28	148	32	117	265
				7		15	22				140		117	205
05:00			1		4			17:00		31		33		
05:15			7		6			17:15		39 37		17 22		
05:30			6 8	22	10 14	24	E4	17:30		37	120	22 21	93	222
05:45				22		34	56	17:45			129		93	222
06:00			12		16			18:00		23		21		
06:15			14		18			18:15		15		19		
06:30			9	F 4	16	(7	110	18:30		21	70	14	74	1 47
06:45			16	51	17	67	118	18:45		14	73	20	74	147
07:00			16		19			19:00		19		14		
07:15			11		17			19:15		14		11		
07:30			16		20			19:30		14		9	45	100
07:45			18	61	26	82	143	19:45		17	64	11	45	109
08:00			21		28			20:00		15		18		
08:15			24		17			20:15		13		15		
08:30			19		19			20:30		14		17		
08:45			20	84	16	80	164	20:45		12	54	12	62	116
09:00			22		20			21:00		17		10		
09:15			18		18			21:15		14		16		
09:30			17		19			21:30		19		12		
09:45			31	88	17	74	162	21:45		15	65	10	48	113
10:00			21		16			22:00		13		6		
10:15			20		25			22:15		10		4		
10:30			18		15			22:30		4		9		
10:45			19	78	23	79	157	22:45		3	30	2	21	51
11:00			22		17			23:00		5		4		
11:15			23		23			23:15		5		2		
11:30			31		27			23:30		2		7		
11:45			32	108	19	86	194	23:45		2	14	4	17	31
otal Vol.				526		529	1055				1036		881	1917
				J20		JZ7		ally Totale			1030		001	171/
						ND		aily Totals						
						NB	SB	EB	WB					
								Combined 1562	1410					
								2972						
				AM							ΡN			

		1 101		
Split %	49.9% 50.1% 35.5%	54.0%	46.0%	64.5%
Peak Hour	11:30 11:15 11:30	15:45	14:15	15:45
Volume P.H.F.	121 93 211 0.95 0.86 0.91	157 0.96	134 0.76	268 0.94

		00			011					0.0		
Volumes for: Wednese Location: Logan Ave			mnso	n St	City:	San Diego		Proj	ect #:	: 08-4	1149-014	
AM Period NB	SB EB	1 & 34	WB	n St		PM Period NB	SB	EB		WB		
00:00	2		3			12:00		30		25		
00:15	1		2			12:15		29		22		
00:30	1		2			12:30		17		29		
00:45	0	4	2	9	13	12:45		21	97	25	101	198
01:00	3		1			13:00		26		13		
01:15	1		1			13:15		24		20		
01:30	4		0			13:30		26		25		
01:45	2	10	3	5	15	13:45		19	95	24	82	177
02:00	1		3			14:00		30		30		
02:00	0		3 1			14:15		30 29		30 31		
02:30	0		0			14:15		35		37		
02:45	2	3	0	4	7	14:45		30	124	39	137	261
		5		4	1				124		137	201
03:00	0		1			15:00		36		39		
03:15	0		2			15:15		33		26		
03:30	0	4	0	2	4	15:30		39	15/	22	110	240
03:45	1	1	0	3	4	15:45		48	156	25	112	268
04:00	4		1			16:00		40		26		
04:15	1		3			16:15		38		22		
04:30	1		4			16:30		46		18		
04:45	2	8	4	12	20	16:45		32	156	19	85	241
05:00	5		5			17:00		39		20		
05:15	7		7			17:15		28		24		
05:30	3		10			17:30		29		19		
05:45	10	25	14	36	61	17:45		23	119	24	87	206
06:00	9		11			18:00		18		20		
06:15	6		19			18:15		15		24		
06:30	10		15			18:30		18		21		
06:45	16	41	21	66	107	18:45		20	71	17	82	153
07:00	14		16			19:00		13		12		
07:15	15		23			19:15		16		13		
07:30	20		24			19:30		23		12		
07:45	16	65	28	91	156	19:45		17	69	11	48	117
08:00	20		24			20:00		25		9		
08:15	16		19			20:15		18		12		
08:30	16		24			20:30		14		12		
08:45	16	68	19	86	154	20:45		19	76	9	42	118
09:00	19		23			21:00		10		10		
09:15	19		23 10			21:15		10		12		
09:30	22		16			21:30		15		11		
09:30	22	86	24	73	159	21:30		15	49	13	46	95
		50		, ,	107				()		10	,5
10:00	22 20		16 11			22:00		7 5		6		
10:15 10:30	20		11 17			22:15		5		2 8		
10:30	21 19	82	22	66	148	22:30 22:45		4	20	8 3	19	39
		02		00	140				20		19	39
11:00	22		22			23:00		7		8		
11:15	30		18			23:15		5		3		
11:30	23	00	24 22	07	104	23:30		3	17	3	14	2.2
11:45	24	99	23	87	186	23:45		2	17	2	16	33
Total Vol.		492		538	1030				1049		857	1906
						aily Totals						
				NB	SB	EB	WB					
						Combined 1541	1395					
						2936						
		AM							PM			
Split %		47.8%	,	52.2%	35.1%				55.0%)	45.0%	64.9%
Peak Hour		11:15		07:15	11:30				15:45		14:15	14:15
r call riour		11.15		07.15	11.50				13.43		14.15	14.15

172 0.90 146 0.94

276

0.92

107 0.89

99

0.88

200

0.91

Volume

P.H.F.

Title1: NATIONAL AVTitle2: COMMERCIAL STTitle3: 16 ST

NONE
02/25/04

Date: 02/25/04

Site:

Interval						Day:	Wednesday
Begin	AM - EB			PM - EB			
2:00	9	33		21	72		
2:15	8			20			
2:30	8			14			
2:45	8			17	Cir. (525)		
:00	4	14		20	94		
:15	4			18			
:30	3 6 6 5 2 1			26			
:45	3			30			
1:00	6	19		12	92		
:15	6			17			
:30	5			35			
:45	2			28		(+)	
:00:	1	5		30	86		
:15	2			20			
:30	2			20			
3:45	2 2 0			16			
:00	4	11		20	91		
:15	0			17 36			
:30	0 4			36			
:45	3			18			
:00	2	22		22 20 13	67		
:15	4			20			
:30	8			- 13			
:45	8			12			
:00	7	24		14	33		
:15	6			6			
:30	6			7			
:45	5			7 6			
1:00	3 2 4 8 7 6 6 5 10	32		8	21		
:15	6			6			
:30	8			1			
:45	8			6			
:00	10	42		7	23		
3:15	14			4	1073		
:30	8						
3:45	10			5 7 5 2 7			
0:00	18	62		5	20		
:15	15			2	10.000		
:30	13			7			
:45	16			6			
0:00	19	74		5 .	19		
0:15	14			6			
0:30	ii			5 * 6 6 2			
0:45	30			2			
1.00	16	79		6	15		
1:00	10	19		0	1.5		
1:15	24 11			7			
1:30 1:45	28			0 7 2			
otal	417			633			
oui			()	1.00000			5
eak Hou	10:30			2:30			
/olume	81			113			1
acto	0.68			0.81			161-0
DayTotal	1,050						04



Title1 : NATIONAL AV Title2 : COMMERCIAL ST Title3 :16 ST

Interval					Day:	Thursda
Begin	AM - EE		PM - EB		Accessmite//	
12:00	3 2 5 3 0	C 13	18 16	69		
12:15	2		16			
2:30	5		19			
12:45	3		16			
1:00	0	4	22	76		
1:15	3 1		15			
1:30	1		18			
1:45	0		21			
2:00	0 2 0	2	14	88		
2:15	0	-	14 17	00		
2:30	0		33			
2:45	0 0 0		33 24			
2:40	0		24	82	142 142	
3:00	0	1	24 22 22 14 19	82		
3:15	1		22			
3:30	0		22			
3:45	0		14			
4:00	2	7	19	89		
4:15	0 2 1 2 3 2 6 6 4		21			
4:30	2		25			
4:45	2		24 24			
5:00	3	17	24	63		
5:15	2		9			
5:30	6		20			
5:45	6		10			
6:00	4	39	6	21		
6:15	10	37	4	-1		
6.70	11		3			
6:30	11		8			
6:45	14	41	ĉ	17		
7:00	7	41	4	17		
7:15	11		3			
7:30	15		7			
7:45	8		3 3 4			
8:00	14	59	3	16		
8:15	11		4			
8:30	18		4			
8:45	16		5			
9:00	17	51	8	37		
9:15	7		13			
9:30	10		4 5 8 13 8			
9:45	17		8			
10:00	11	78	4	19		
10:15	20	70	4 7 • 5 3	19		
10:30	20 19					
0.30	19		5			
10:45	28					
11:00	10	59	4	12		
11:15	18		4			
11:30	15		4			
1:45	16		0			
Fotal	371		589			
Peak Hou	10:00		2:30			
Volume	78		103			
Facto	0.7		0.78			
Day Tatal	070					
DayTotal	960					

Site: NONE Date:

02/26/04

: NATIONAL AV Title1 : COMMERCIAL ST Title2 Title3 : 16 ST

Site:	NONE
Date:	02/27/04

Interval					Day:	Frida
Begin	AM - EB	-	PM - EB			
2:00		11	14	61		
2:15	5 1 2 3		18			
2:30	2		12			
2:45	3		17			
1:00	1	4	16	48		
1:15	3		10			
1:30	3 0 2 0 1 2 1		14 8			
1:45	0		8			
2:00	2	5	13	66		
2:15	õ		13 9	215.5		
2:30	1		30			
2:45	2		14			
3:00	ĩ	1	14	66		
3:15	ò		23			
3:30	0		23 13			
3.30	0		16			
3:45	0 6 0 2 3 5 2 7 6	11	23	84		
4:00	0	11	18	04		
4:15	0		26			
4:30	2					
4:45	3	20	17	70		
5:00	5	20	27	79		
5:15	2		14			
5:30	7		10			
5:45	6	12.20	20			
5:00	4	29	17	42		
6:15	9 8 8 8		12			
6:30	8		10			
6:45	8		10 3 5 10 2 4 2 4 4 6 9 8	19233		
7:00	8	36	5	21		
7:15	10		10			
7:30	8		2			
7:45	10 8		4			
8:00	8	34	2	16		
8:15	6		4			
8:30	11		4			
8:45	9		6			
9:00	10	56	9	26		
9:15	20		8			
9:30	10		1			
9:45	16		8			
0:00	18	47	8 7 -	11		
0:15	12	875401	3	10815		
0:30	10		3			
0:45	10 7		0			
1:00	17	58		15		
1:15	17 13		5	11-11-12		
1:15	10		3			
11:45	18		6 5 3			
Fotal	312		535			
Peak Hou	9:15		4:15			
/olume	64		88			
acto	0.8		0.81			
DayTotal	847					

Title1	: NATIONAL AV
Title2	: COMMERCIAL ST
Title3	: 16 ST

L

Site: NONE Date:

Interval							Day:	Monda
Begin	AM - I	EB		PM -	EB			
12:00	2 0 2 3 3	7		15		66		
2:15	0			18				
2:30	2			16				
2:45	3			17 18				
1:00	3	7		18		70		
1:15	1			10				
1:30	1			10 22				
1:45				20				
1.00		6		16		79		
2:00	2 0 3 1	0		10		13		
2:15	-3			10 32				
2:30				32				
2:45	2 0 1	1020		21		92721	- F.	
3:00	0	3		40		85		
3:15	1			15				
3:30	2 0 0 1			12 18				
3:45	0			18				
4:00	0	4		20		102		
4:15	1			27				
4:30	2			27 27				
4:45	1			28				
4:43	2 1 6	20		20				
5:00	0	30		20		65		
5:15	4			17				
5:30	7			- 14				
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Transportation Studies, Inc. 1350 Reynolds Avenue, Ste 115 Irvine, CA. 92614

All From Dates 1/1/2003 to 3/5/2008

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STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
19 ST	[COMMERCIAL ST - IMPERIAL AV]	00001 - 00100	2094	NORTH	3834	1/16/2008	0543-07
19 ST	[K ST - SD 005 R-B]	00300 - 00320	2095	NORTH 1-WY	11190	11/16/2005	0689-05
25 ST	[COMMERCIAL ST - IMPERIAL AV]	00001 - 00100	2172	NORTH SOUTH *TOTAL	3718 3340 7060	1/16/2008 1/16/2008	0545-07 0545-07
25 ST	[K ST - J ST]	00300 - 00400	2171	NORTH SOUTH TOTAL	4960 5110 10070	11/10/2005 11/10/2005	0690-05 0690-05
25 ST	[MARKET ST - G ST]	00600 - 00700	2175	NORTH SOUTH +TOTAL	6920 6130 13040	10/17/2006	0427-6 0427-06
25 ST	(E ST - BROADWAY)	00900 - 01000	2170	NORTH SOUTH *TOTAL	5570 7090 12660	10/17/2006 10/17/2006	0426-06 0426-06
25 ST	[BROADWAY - C ST]	01000 - 01100	2173	NORTH SOUTH *TOTAL	5100 5460 10560	11/16/2005 11/16/2005	0691-05 0691-05
26 ST	[NEWTON AV (N) - NATIONAL AV]	011005 - 010005	NONE	BOTH	2380	2/4/2003	0163-03
26 ST	[B ST - A ST]	01200 - 01300	2811	NORTH SOUTH *TOTAL	2640 3160 5800	10/25/2006 10/25/2006	0438-06 0438-06
26 ST RD	(GOLF COURSE DR - CMTO CTRO)	01400 - 01650	2810	BOTH NORTH SOUTH *TOTAL	11870 6660 4990 11650	3/10/2004 3/13/2007 3/13/2007	0213-04 0146-07 0146-07
27 SB ST	(CORONADO SB AV - CMTO SECOYA)	01100 - 01250	4341	NORTH	2120	12/7/2005	0651-05

STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
28 ST	[C ST - B ST]	01100 - 01200	2182	*TOTAL	8930		
28 ST	[MAIN ST - BOSTON AV]	01300S - 01200S	2020	NORTH SOUTH *TOTAL	12380 13640 26020	11/8/2005 11/8/2005	0679-05 0679-05
28 ST	[HARBOR DR - MAIN ST]	01399S - 01300S	2021	NORTH SOUTH *TOTAL	9710 9690 18400	11/8/2005 11/8/2005	0677-05 0677-05
28 ST	(ASH ST - BEECH ST)	01400 - 01500	2183	BOTH NORTH SOUTH *TOTAL	3870 2170 1760 3930	4/23/2003 3/9/2006 3/9/2006	0484-03 0158-06 0158-06
30 ST	[K ST (W) - J ST]	00300 - 00400	2197	NORTH SOUTH *TOTAL	1130 1530 2660	1/16/2008 1/16/2008	0549-07 0549-07
30 ST	[CLAY AV - WEBSTER AV]	00300S - 00200S	2195	NORTH SOUTH 'TOTAL	1630 1320 2940	1/16/2008 1/16/2008	()548-07 0548-07
30 ST	[E ST - BROADWAY]	00900 - 01000	2190	NORTH SOUTH *TOTAL	2170 2290 4460	1/16/2008 1/16/2008	0547-07 0547-07
30 ST	(BROADWAY - C ST)	01000 - 01100	2191	NORTH SOUTH *TOTAL	8190 7820 16010	10/17/2006 10/17/2006	0429-06 0429-06
30 ST	[C ST - B ST]	01100 - 01200	2192	NORTH SOUTH *TOTAL	7550 5830 13380	11/1 7/2005 11/1 7/2 005	0693-05 0693-05
30 ST	(FIR ST - GRAPE ST)	01900 - 02000	2312	BOTH NORTH	3340	3/30/2004 4/4/2007	0288-04 0203-07

CITY OF SAN DIEGO - TRAFFIC ENGINEERING Machine Count Traffic Volumes - City Streets	
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All From Dates 1/1/2003 to 3/5/2008

STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
32 ST	[G ST - F ST]	00700 - 00800	2005	SOUTH *TOTAL	: 4270 : 7030	10/17/2006	0413-06
32 ST	[GREELY AV - MARTIN AV (S)]	00800S - 00710S	2002	NORTH SOUTH *TOTAL	2050 2300 4350	1/16/2008 1/16/2008	0538-07 0538-07
32 ST	[NEWTON AV - NATIONAL AV]	01100S - 01000S	2000	NORTH SOUTH *TOTAL	2670 2680 5350	11/8/2005 11/8/2005	0676-05 0676-05
32 ST	[WABASH BL - UNNAMED 4 RD]	01700S - 01600S	2001	NORTH SOUTH •TOTAL	6430 7590 14020	10/17/2006 10/17/2006	0411-06 0411-06
32 ST	[MCCANDLESS BL - WABASH BL]	01800S - 01700S	2006	NORTH SOUTH *TOTAL	: 10540 : 9810 : 20350	1/16/2008 1/16/2008	0540-07 0540-07
32 ST	[THORN ST - UPAS ST]	03300 - 03400	2330	BOTH NORTH SOUTH *FOTAL	3960 2380 1580 3960	4/6/2004 4/4/2007 4/4/2007	0338-04 0207-07 02/07/07
32 ST	[DWIGHT ST - LANDIS ST]	03600 - 03700	2333	NORTH SOUTH *TOTAL	3070 1970 5040	4/27/2005 4/27/2005	0202-05 0202-05
32 ST	[N PK WY - UNIVERSITY AV]	03800 - 03900	2334	BOTH NORTH SOUTH 'TOTAL	7440 4810 1930 6740	4/6/2004 4/4/2007 4/4/2007	0342-04 0208-07 0208-07
32 ST	(UNIVERSITY AV - LINCOLN AV)	03900 - 04000	2335	NORTH SOUTH *TOTAL	: 1530 : 1720 : 3250	5/4/2006 5/4/2006	0212-06 0212-06

STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
LK MURRAY BL	(BLUE LK DR - JACKSON DR)	08330 - 08380	3514	NORTH SOUTH *TOTAL	6100 6070 12170	5/26/2005 5/26/2005	0262-05 0262-05
LK MURRAY BL	[BEAVER LK DR - SN CARLOS DR]	08550 - 08600	3513	NORTH SOUTH "TOTAL	7510 7250 14760	5/26/2005 5/26/2005	0261-05 0261-05
LOGAN AV	[16 ST - 17 ST]	01600 - 01650	NONE	EAST WEST *TOTAL EAST WFST	1080 1650 2730 1340 2190	3/12/2003 3/12/2003 2/25/2004 2/25/2004	0210-03 0209-03 0163-04 0164-04
LOGAN AV	[SIGSBEE ST - BEARDSLEY ST]	01700 - 01800	2981	•TOTAL EAST WEST *TOTAL	3530 1780 1240 3010	1/17/2008 1/17/2008	0558-07 0558-07
LOGAN AV	[C CHAVEZ PY - SD 005 R-C]	01900 - 02000	2980	EAST WEST *TOTAL	7730 1150 8880	10/19/2006 10/19/2006	0439-06 0439-06
LOGAN AV	[44 ST - ELIZABETH ST]	04400 - 04450	3031	EAST WEST *TOTAL	3680 4290 7970	1/6/2004 1/6/2004	0009-04 0010-04
LOGAN AV	[49 ST - EUCLID AV]	04900 - 05100	3030	EAST WEST 'TOTAL EAST WEST 'TOTAL	5410 4430 9840 5750 5410	1/14/2003 1/14/2003 1/17/2006 1/17/2006	0077-03 0078-03 0005-06 0005-06
LOMALAND DR	CATALINA BL - TEMPLE ST]	03800 - 03850	1075	EAST	2340	6/24/2004	0481-04

CITY OF SAN DIEGO - TRAFFIC ENGINEERING Machine Count Traffic Volumes - City Streets	All From Dates 1/1/2003 to 3/5/2008
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STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
MAIN SB ST	[ALAMITOS AV - HOLLISTER ST]	02200 - 02300	4311	EAST WEST *TOTAL	11260 12270 23530	12/12/2006 12/12/2006	0577-06 0577-06
MAIN ST	(27 ST - 28 ST)	02700 - 02800	2052	EAST WEST *TOTAL	3780 3660 7440	10/17/2006 10/17/2006	0419-06 0419-05
MAIN S'T	[29 ST - 30 ST]	02900 - 03000	2053	EAST WEST *TOTAL	7460 6870 14330	11/16/2005 11/16/2005	0681-05 0681-05
MAIN ST	[RIGEL ST - SIVA ST]	03350 - 03400	3551	WEST EAST EAST WEST *TOTAL	7940 9010 7990 7960 15950	1/7/2003 1/9/2003 1/24/2006 1/24/2006	0056-03 0055-03 0029-06 0029-06
MAIN ST	[VESTA ST - WODEN ST]	03700 - 03740	3650	EAST WEST TOTAL EAST WEST TOTAL	7490 8620 16110 8100 7070 15170	1/6/2004 1/6/2004 1/18/2007 1/18/2007	0005-04 0006-04 0027-07 0027-07
MALLARD ST	[ORIOLE ST - SWAN ST]	06300 - 06400	3727	EAST WEST +TOTAL EAST WEST +TOTAL	3620 4180 7800 3900 3690 7590	2/3/2005 2/3/2005 2/21/2008 2/21/2008	0105-05 0105-05 0028-08 0028-08
MANGO DR	[CALAIS DR - D M HTS RD]	13600 - 13800	5057	NORTH SOUTH	1720	8/26/2004 8/26/2004	0603-04 0603-04

All From Dates 1/1/2003 to 3/5/2008

STREET NAME	SLIMIT	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
NARRAGANSETT AV	[STA BARBARA ST - GUIZOT ST]	04400 - 04500	1090	EAST WEST	1620 1750	6/24/2004 6/24/2004	0492-()4 0492-04
				*TOTAL EAST WEST •TOTAL	3370 1540 1930 3470	6/28/2007 6/28/2007	0323-07 0323-07
NATIONAL AV	[COMMERCIAL ST - 16 ST]	01400 - 01600	NONE	EAST WEST •TOTAL FAST	1090 1280 2370 940	3/12/2003 3/12/2003 2/25/2004	0211-03 0212-03 0161-04
				WEST TOTAL	1520 2460	2/25/2004	0162-04
NATIONAL AV	(BEARDSLEY ST - C CHAVEZ PY)	01800 - 01900	2721	EAST WEST *TOTAL	2810 2490 5300	11/10/2005 11/10/2005	0698-05 0698-05
NATIONAL AV	[EVANS ST - SAMPSON ST]	02100 - 02200	2060	EAST WEST 'TOTAL	1780 1920 3700	11/10/2005 11/10/2005	0683-05 0683-05
NATIONAL AV	[26 ST - 27 ST]	02600 - 02700	2062	EAST WEST •TOTAL	3510 4280 7790	1/16/2008 1/16/2008	0541-07 0541-07
NATIONAL AV	[28 ST - Z9 ST]	02800 - 02900	2059	BOTH	13440	10/17/2006	0420-06
NATIONAL AV	[30 ST - 31 ST]	03000 - 03100	2065	EAST WEST *TOTAL	7530 6880 14410	11/3/2005 11/3/2005	0684-05 068 4- 05
NATIONAL AV	[33 ST - 35 ST]	03300 - 03500	3001	EAST WEST •TOTAL EAST	6730 6740 13470 5930	1/7/2003 1/7/2003 1/17/2006	0060-03 0061-03 0002-06

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STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
SAIPAN DR	[ALLEGHANY ST - POTOMAC ST]	02100 - 02300	NONE	SOUTH TOTAL	1200 2210	2/2/2005	0038-05
			3542	SOUTH SOUTH	1360 1620 7000	2/10/2005 2/10/2005	0104-05 0104-05
				TOTAL SOUTH *TOTAL	2990 1350 1400 2740	2/21/2008 2/21/2008	0042-08 0042-08
SALMON RIVER RD	[CAL ROSAS - ADOLPHIA ST]	12800 - 12900	5270	NORTH SOUTH	1410 1550 2960	3/1/2005 3/1/2005	0137-05 0137-05
				NORTH SOUTH *TOTAL	1280 1410 2690	2/26/2008 2/26/2008	0098-08 0098-08
SALMON RIVER RD	[FAIRGROVE LN - PSO MONTALBAN]	13300 - 13400	5269	BOTH	4770	2/19/2003	0125-03
SAMPSON ST	[NATIONAL. AV - NEWFON AV]	01000 - 01100	2033	NORTH SOUTH *TOTAL	1570 2230 3800	11/15/2005 11/15/2005	0680-05 0680-05
SANDROCK RD	(GREYLING DR - MURRAY RDG RD)	03300 - 03380	6171	NORTH SOUTH TOTAL	4520 5210 9730	9/26/2006 9/26/2006	0357-06 0357-06
SANDROCK RD	[GLENHAVEN ST - HAVETEUR WY]	03450 - 03490	6170	NORTH SOUTH TOTAL	6090 5790 11880	11/3/2005 11/3/2005	0583-05 0583-05
SANTO RD	[FRIARS RD - ADM BAKER RD]	02350 - 02400	8024	SOUTH NORTH NORTH SOUTH	4790 4860 4730 5340	4/17/2003 4/19/2003 5/20/2003 5/20/2003	0468-03 0467-03 0509-03 0510-03

CITY OF SAN DIEGO - TRAFFIC ENGINEERING	Machine Count Traffic Volumes - City Streets	
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STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
VALLEY RD	[CAL ABAJO - REO DR]	05700 - 05900	3094	EAST WEST *TOTAL	3260 3650 6910	3/21/2007 3/21/2007	0160-07 0160-07
VALLEY RD	[REO DR - TONAWANDA DR]	05900 - 05999	3093	EAST WEST *TOTAL EAST WEST *TOTAL	6490 6240 12730 3070 2940 6010	2/1/2005 2/1/2005 2/19/2008 2/19/2008	0029-05 0029-05 0047-08 0047-08
VAN DYKE AV	[ADAMS AV - ALDINE DR]	04700 - 04729	3381	NORTH SOUTH +TOTAL	3460 3360 6820	5/4/2006 5/4/2006	0226-06 0226-06
VANDEVER AV	(RIVERDALE ST - MSS GORGE RD)	04400 - 04500	9231	EAST WEST •TOTAL	4190 2530 7050	5/27/2005 5/27/2005	0367-05 0367-05
VANDEVER AV	[MSS GORGE RD - DECENA DR]	04500 - 04550	NONE	EAST WEST *TOTAL	940 770 1710	5/17/2005 5/17/2005	0368-05 0368-05
VESTA ST	[ACACIA ST - BIRCH ST]	01700 - 01800	3356	BOTH NORTH	5050 2640	1/7/2003 1/24/2006	0057-03 0024-06
VESTA ST	[DALBERGIA ST - MAIN ST]	02000 - 02100	3365	BOTH NORTH SOUTH *TOTAL	4650 2610 2290 4900	2/5/2003 1/24/2006 1/24/2006	0109-03 0023-06 0023-06
VETERANS HOSP DR	fL J VILGE DR - N/O]	00001 - 00009	BNON	NORTH SOUTH TOTAL	10020 9560 19580	11/30/2006 11/30/2006	0592-06 0592-06

olumes for: Tuesc							San Diego		Proj	ect #:	08-4	149-015	
ocation: Nationa M Period NB	I Ave btwr SB	n Beards EB	ley St	& Ces WB	ar Chav	ez Pkwy	PM Period NB	SB	EB		WB		
	50							50			48		
00:00 00:15		2 0		0 0			12:00 12:15		41 34		48 37		
00:30		0		1			12:30		27		32		
00:45		1	3	1	2	5	12:45		22	124	25	142	266
		0	0	0	2	0	13:00		33	121	39	112	200
01:00 01:15		0		1			13:15		33 48		39 49		
01:30		1		2			13:30		24		32		
01:45		0	1	0	3	4	13:45		41	146	42	162	308
02:00		0		0		•	14:00		24		28	102	
02:00		0		1			14:15		24		32		
02:30		0		0			14:30		20		36		
02:45		0	0	1	2	2	14:45		35	114	39	135	249
03:00		2	-	1			15:00		36		39		
03:15		0		0			15:15		43		45		
03:30		0		5			15:30		26		29		
03:45		0	2	4	10	12	15:45		26	131	32	145	276
04:00		0		2			16:00		31		19		
04:15		0		3			16:15		34		27		
04:30		2		4			16:30		47		26		
04:45		10	12	9	18	30	16:45		31	143	33	105	248
05:00		6		5			17:00		69		28		
05:15		10		13			17:15		31		19		
05:30		17		17			17:30		25		28		
05:45		13	46	18	53	99	17:45		22	147	27	102	249
06:00		11		14			18:00		28		28		
06:15		17		14			18:15		26		22		
06:30		20		23			18:30		34		29		
06:45		14	62	20	71	133	18:45		24	112	23	102	214
07:00		12		19			19:00		20		17		
07:15		15		25			19:15		15		14		
07:30		27		33			19:30		5		6		
07:45		19	73	35	112	185	19:45		3	43	13	50	93
08:00		12		44			20:00		2		7		
08:15		12		37			20:15		0		9		
08:30		31		38			20:30		3		7		
08:45		15	70	34	153	223	20:45		2	7	10	33	40
09:00		24		33			21:00		2		5		
09:15		27		32			21:15		1		14		
09:30		26		32			21:30		4		8		
09:45		36	113	37	134	247	21:45		5	12	11	38	50
10:00		21		28			22:00		7		3		
10:15		14		21			22:15		9		7		
10:30		29		32			22:30		5		3		
10:45		33	97	32	113	210	22:45		3	24	4	17	41
11:00		28		35			23:00		1		3		
11:15		20		26			23:15		3		6		
11:30		23		23			23:30		1	_	1		
11:45		42	113	45	129	242	23:45		0	5	3	13	18
otal Vol.			592		800	1392				1008		1044	2052
							aily Totals						
					NB	SB	EB	WB					
							Combined 1600	1844					

	AM	PM		
Split %	42.5% 57.5% 40.4	% 49.1%	50.9%	59.6%
Peak Hour	11:45 11:45 11:4	5 16:15	13:00	13:00
Volume P.H.F.	1441623060.860.840.86	181 0.66	162 0.83	308 0.79

Volumes for: Wednesday	, June 11, 20	08			City:	San Diego		Proj	ect #:	08-4	149-015	
ocation: National Ave	btwn Beards	sley St	& Ces	sar Chav								
M Period NB SI	B EB		WB			PM Period NB	SB	EB		WB		
00:00	3		0			12:00		45		55		
00:15	2		0			12:15		29		36		
00:30	0		2			12:30		26		35		
00:45	1	6	1	3	9	12:45		25	125	17	143	268
01:00	0		1			13:00		37		37		
01:15	2		2			13:15		51		49		
01:30	1		2			13:30		21		36		
01:45	0	3	2	7	10	13:45		40	149	45	167	316
02:00	0		0			14:00		19		28		
02:15	0		2			14:15		28		36		
02:30	0		1			14:30		36		35		
02:45	1	1	0	3	4	14:45		32	115	40	139	254
03:00	1		1			15:00		38		39		
03:15	2		0			15:15		42		47		
03:30	0		6			15:30		28		39		
03:45	0	3	2	9	12	15:45		23	131	29	154	285
04:00	2		1			16:00		28		17		
04:15	1		2			16:15		37		25		
04:30	1		6			16:30		43		30		
04:45	12	16	7	16	32	16:45		33	141	37	109	250
05:00	4		9			17:00		72		34		
05:15	7		16			17:15		33		19		
05:30	22		17			17:30		20		28		
05:45	9	42	19	61	103	17:45		30	155	28	109	264
06:00	13		9			18:00		30		30		
06:15	13		7 17			18:15		30 29		24		
06:30	13		23			18:30		39		30		
06:45	18	61	26	75	136	18:45		23	121	30	114	235
07:00	8	01	24	70	100	19:00		27	121	17		200
07:15	o 19		24 28			19:00		17		18		
07:30	19		20 33			19:15		6		8		
07:45	25	70	33 34	119	189	19:30		5	55	。 13	56	111
		70		117	107				55		50	111
08:00	8		46			20:00		1		7		
08:15	11		37			20:15		1		8		
08:30	35	70	36	150	220	20:30		3	7	9	27	4.4
08:45	16	70	31	150	220	20:45		2	7	13	37	44
09:00	32		29			21:00		1		9		
09:15	24		31			21:15		0		16		
09:30	27		36	101		21:30		6	10	11	40	
09:45	31	114	38	134	248	21:45		5	12	7	43	55
10:00	25		28			22:00		9		1		
10:15	15		15			22:15		7		6		
10:30	30		30		<i></i>	22:30		9		5	4.5	
10:45	31	101	31	104	205	22:45		5	30	7	19	49
11:00	35		36			23:00		0		4		
11:15	27		22			23:15		1		8		
11:30	30		25			23:30		1		1		
11:45	44	136	40	123	259	23:45		0	2	4	17	19
otal Vol.		623		804	1427				1043		1107	2150
						aily Totals						
				NB	SB	EB	WB					
						Combined 1666	1911					
						3577						
		AM				-			PM			
Split %		43.7%		56.3%	39.9%				48.5%)	51.5%	60.1%
eak Hour		11:30		11:45	11:45				16:15		13:00	13:00
Volumo		140		144	210				105		147	214

Volume

P.H.F.

148

0.82

166

0.75

310

0.78

185

0.64

167

0.85

316

Volumes for: Wednesday, May 25, 2005

City: San Diego

Volumes for: Thu	5				5	: San Diego		FILE#:			
Location: NATIO		EVANS		SAMPSC	ON ST)	[2060]	55	ADT:)	
AM Period	EB		WB			PM Period	EB		WB		
00:00	2		6			12:00	18		39		
00:15	0		0			12:15	22		44		
00:30	2 2	6	1 5	12	18	12:30	24 20	84	29 39	151	22E
00:45		0		12	10	12:45		04		101	235
01:00	4		1			13:00	22		31		
01:15	0		1			13:15	32		47		
01:30	2	7	5	7		13:30	24	100	39	4.47	050
01:45	1	7	0	7	14	13:45	25	103	30	147	250
02:00	2		3			14:00	31		38		
02:15	0		0			14:15	32		39		
02:30	1		3			14:30	37		36		
02:45	1	4	0	6	10	14:45	31	131	47	160	291
03:00	0		0			15:00	46		39		
03:15	0		0			15:15	37		26		
03:30	4		0			15:30	34		29		
03:45	1	5	1	1	6	15:45	31	148	29	123	271
04:00	1		0			16:00	29		34		
04:15	2		1			16:15	36		32		
04:30	5		0			16:30	46		34		
04:45	6	14	6	7	21	16:45	32	143	29	129	272
05:00	8		1			17:00	35		39		
05:15	8		5			17:15	29		25		
05:30	17		18			17:30	41		26		
05:45	14	47	14	38	85	17:45	34	139	31	121	260
06:00	14		13			18:00	24		18		
06:15	11		8			18:15	28		26		
06:30	29		34			18:30	19		23		
06:45	19	73	21	76	149	18:45	24	95	29	96	191
07:00	19		13			19:00	17		16		
07:15	16		23			19:15	25		17		
07:30	18		23			19:30	11		9		
07:45	17	70	32	91	161	19:45	13	66	14	56	122
08:00	34		32			20:00	10		9		
08:15	24		52			20:00	23		14		
08:30	32		25			20:15	14		18		
08:45	29	119	22	131	250	20:30	14	61	17	58	119
	41	117		101	230		14	01		50	117
09:00	41 30		46			21:00			17 3		
09:15 09:30	30 31		42			21:15	11 10		3 13		
		150	26 26	150	300	21:30	6	41	13	16	87
09:45	48	150	36	150	300	21:45		41		46	07
10:00	38		42			22:00	17		17		
10:15	34		36			22:15	8		8		
10:30	13 25	110	23	104	224	22:30	4	24	6	27	71
10:45	25	110	23	124	234	22:45	5	34	6	37	71
11:00	26		39			23:00	8		5		
11:15	22		22			23:15	7		6		
11:30	24	104	31	100	224	23:30	6	22	1	17	40
11:45	32	104	40	132	236	23:45	2	23	5	17	40
Total Vol.		709		775	1484			1068		1141	2209
								Da	aily To	tals	
								EB		WB	Combined
								1777		1916	3693
			٨N	Л				, ,	ΡM	.,,,,	5070
Split %		47.8%		52.2%	40.2%	-		48.3%	1 171	51.7%	59.8%
Peak Hour		09:30		11:30	09:00			14:30		14:15	14:15
Volume		151		154	300			151		161	307
P.H.F.		0.79		0.88	0.86			0.82		0.86	0.90

Local tom: National Ave PKM NB SB EB WB AM Parked NB SB EB WB PM Parked NB SB EB WB 00.00 2 6 12.15 72 72 70 100 01.30 2 6 12.15 77 20 71 10 01.30 2 9 9 11 20 78 83 11 01.30 3 4 13.30 73 80 78 83 117 01.41 2 9 0 11 20 13.45 73 80 9 83 02.00 1 2 20 14.43 14.43 14.34 14.3<	for: Tuesday, June 10, 2	2008				Citv:	San Diego		Proi	ect #	08-4	1149 <u>-016</u>	
0000 4 5 1200 78 <th7< th=""><th></th><th></th><th>on St 8</th><th>& 27th</th><th>า St</th><th>ony.</th><th>our blogo</th><th></th><th></th><th></th><th></th><th></th><th></th></th7<>			on St 8	& 27th	า St	ony.	our blogo						
00150 2 0 12150 72 70 70 00150 11 29 2 19 58 12150 73 280 81 319 0150 4 3 3320 73 333 69 67 333 0150 2 9 0 11 20 1345 73 303 60 83 0150 2 9 0 11 20 1345 73 303 60 83 0215 3 4 7 22 36 1415 90 0 60 11 100 90 10 10 100 <th>od NB SB</th> <th>EB</th> <th></th> <th>WB</th> <th></th> <th></th> <th>PM Period NB</th> <th>SB</th> <th>EB</th> <th></th> <th>WB</th> <th></th> <th></th>	od NB SB	EB		WB			PM Period NB	SB	EB		WB		
0030 22 6 19 58 12,49 57 200 73 80 0140 4 4 1360 78 83 117 0145 2 9 0 11 20 13,30 69 67 0145 2 9 0 11 20 13,45 73 90,3 46 0245 2 9 0 11 20 13,45 73 90,3 46 0245 2 9 0 11 20 13,45 73 90,3 46 0245 2 14 7 22 36 14,45 143 47 96 0245 2 14 7 22 36 14,45 111 105 0246 1 9 15,50 111 105 111 105 0343 1 6 14 19 45 15,30 64 43 11 0445 3 7 9 116,15 111 105 10 16 0445 3 7 9 116,15 114 10 10 0445 3 7 <td></td> <td>4</td> <td></td> <td>5</td> <td></td> <td></td> <td>12:00</td> <td></td> <td></td> <td></td> <td>88</td> <td></td> <td></td>		4		5			12:00				88		
00.05 11 39 2 19 58 12.45 57 200 81 317 01.06 3 3 13.20 13.20 73 303 69 83 01.36 3 2 9 0 11 20 13.45 69 67 01.45 2 9 0 11 20 13.45 63 171 303 66 333 02.15 3 4 7 22 36 14.45 79 84 33 02.30 8 9 14.30 155 105 105 33 03.45 1 6 14 7 22 36 14.45 111 105 03.315 1 6 12 15.5 111 105 3 33 33 33 04.45 3 7 97 45 15.45 43 43 43 04.45 1 6 14 7 72 16.45 5 24 53 04.45 3 7 97 45 15.45 43 37 5 55 04.45 13 7 13				6			12:15						
01:00 4 4 12.00 78 83 01:13 0 3 13:15 69 77 01:14 2 0 11 20 13:45 73 303 96 01:15 2 0 0 11 20 13:45 73 303 96 02:15 3 4 14:15 77 84 02:13 3 4 14:15 77 84 02:13 3 4 150 107 89 02:13 1 9 15:15 111 105 02:30 2 1 4 79 83 03:30 2 12 15:3 106 80 03:31 1 9 16:00 84 63 04:45 3 79 1217 224 16:45 04:45 3 79 1217 224 16:45 04:45 3 79 97 1217 24 16:45 04:45 3 79 1217 24 16:45 16:7 04:45 3 79 9 17:15 59 57 04:45		22		6			12:30						
0113 0 3 13.35 69 87 0130 1 2 13.35 73 303 66 383 0130 1 2 14.00 90 73 303 66 383 0245 2 14 7 22 36 14.45 70 8 70 0245 2 14 7 22 36 14.45 110 70 8 0300 2 14 7 72 36 111 70 87 0333 2 14 30 45 15.45 111 70 87 0334 3 49 16.15 72 59 74 71 0440 0 1 54 17.75 56 74 73 0443 3 7 91 217 224 16.45 56 74 73 0500 8 13.3 74 17.0 16.60 84 63 74 0533 16 13.6 17.75 55 50 53 54 0530 25 113 18.00 48 19 70		11	39	2	19	58	12:45		57	280	81	319	599
0130 3 4 1330 30 17 0145 2 9 0 11 20 1345 73 303 6 0210 1 2 1440 9 155 75 84 0210 3 4 1413 77 84 0230 8 9 1430 155 107 84 0245 2 14 7 22 36 1445 113 467 9 0330 2 1 4 9 1500 107 84 31 0330 1 6 14 39 45 1545 86 403 74 351 0440 0 19 1615 72 59 74 351 0433 1 58 1630 64 75 74 374 0445 3 7 127 24 1645 57 75 55 0433 1 58 173 1800 45 75 55 0433 17 78 50 77 5 55 74 0433 10 79 96 173		4		4			13:00		78		83		
11 · 4 · 2 2 · 9 · 0 11 · 20 14.60 70 303 · 96 383 12 · 0 1 2 14.60 97 - 64 02 · 0 8 9 - 14.15 77 63 78 02 · 0 8 9 - 14.15 79 50 105 02 · 0 1 9 - 14.43 105 105 03 · 0 2 14 39 45 15.45 68 403 7 03 · 0 2 12 - 15.35 64 63 - 03 · 0 1 6 14 39 45 15.45 64 63 04 · 0 0 7 71 217 224 16.45 64 77 05 · 0 8 13 7 17.01 55 5 5 05 · 0 8 135 7 71 16 13 77.15 55 5 05 · 0 8 13 7.41 17.45 16.30 64 77 05 · 0 65 110 58 17.30 75 5 5 05 · 0 16 136 </td <td></td> <td>0</td> <td></td> <td>3</td> <td></td> <td></td> <td>13:15</td> <td></td> <td>69</td> <td></td> <td>87</td> <td></td> <td></td>		0		3			13:15		69		87		
D2:00 1 2 14:00 00 96 D2:15 3 4 14:15 79 84 D2:24 2 14 7 22 36 14:45 113 467 96 31 D2:45 2 14 7 22 36 14:45 113 467 99 31 D3:30 2 2 4 15:00 107 89 D3:31 1 9 15:15 111 105 D3:32 2 12 15:30 99 83 D4:40 0 19 16:00 84 63 D4:43 3 7 91 217 224 16:30 64 59 D4:43 3 7 9 83 17:45 56 276 53 234 D5:05 8 135 17:30 75 55 55 55 55 55 69 D6:45 21 78 18:5 17:45 52 21 58 200 D6:45 21 78 18:5 19:15 43 37 63 D6:45 21 78 19:15		3		4			13:30		83		117		
02.15 3 4 -14.15		2	9	0	11	20	13:45		73	303	96	383	686
02-15 3 4 -14-15 79 84 02-26 2 14 7 22 36 1445 143 467 96 381 03:00 2 4 -55:00 111 105 111 105 03:35 1 6 12 55:30 97 86 403 74 03:45 1 6 19 - 16:15 111 105 3 04:40 0 1 7 92 17 224 16:30 64 59 04:40 3 49 - 16:15 64 59 24 04:40 3 49 - 16:15 64 59 24 04:45 3 7 91 217 224 16:45 56 22 51 05:50 65 7 7 17:5 56 47 55 55 55 05:50 16 136 78 83 17:45 52 21 58 20 05:50 25 113 16 166 163 16 164 19 05:51 16 17 17 </td <td></td> <td>1</td> <td></td> <td>2</td> <td></td> <td></td> <td>14:00</td> <td></td> <td>90</td> <td></td> <td>96</td> <td></td> <td></td>		1		2			14:00		90		96		
02.45 2 14 7 22 36 1445 143 467 96 381 03.00 2 4 550 101 107 89 1 03.315 1 6 14 39 15:15 101 107 80 3 03.45 1 6 14 39 45 5:54 86 407 7 351 04:45 3 49 217 24 16:60 84 26 59 04:45 3 7 91 217 24 16:45 64 26 27 53 24 05:50 68 13 7 91 217 24 16:45 64 7 55 56 36		3					14:15		79		84		
03.00 2 4 15.00 107 89 03.15 1 9 15.15 111 105 03.30 2 12 15.30 99 83 03.44 1 6 14 39 45 15.45 86 403 74 351 04.00 0 .10 7 16.15 .72 59 04.15 3 .49 16.15 .72 59 04.45 3 7 91 217 224 16.45 .50 224 05.00 8 135 .717.00 .66 .47 .72 .55 05.45 .30 .79 .98 .504 .583 .717.0 .65 .64 05.30 .25 .135 .17.30 .75 .55 .66.4 .60 .42 06.45 .20 .10 .58 .318 .428 .84.5 .40 .88 .41 .89 06.45 .28 .10 .58 .318 .428 .84.5 .40 .88 .41 .89 07.15 .24 .45 .915 .26 .33 .97 .97 .93		8		9			14:30		155		105		
03.35 1 9 15.15 111 105 03.30 2 12 15.30 99 83 04.00 0 19 15.30 94 63 64 63 04.00 0 19 16.00 84 63 59 04.15 3 49 16.15 56 26 53 234 04.45 3 7 91 217 224 16.45 56 276 53 234 05.00 8 7 91 217 224 16.45 56 276 53 234 05.05 16 136 17.15 52 25 5		2	14	7	22	36	14:45		143	467	96	381	848
03:35 1 9 15:15 111 105 03:30 2 12 15:30 99 83 04:15 3 49 16:40 84 63 04:15 3 49 16:15 72 59 04:30 1 58 16:30 64 59 04:43 3 7 91 217 224 16:40 66 67 53 05:00 8 136 17:15 59 40 50 50 50 05:51 16 136 17:15 52 215 58 200 06:53 25 113 18:00 45 69 06:54 20 79 98 504 583 17:45 52 215 58 06:55 113 18:00 45 69 20 20 20 06:55 28 10 58 318 428 18:45 40 18 11 07:05 28 119 78 28:16 19:30 23 44 07:15 24 45 19:30 27 24 06:30 33 69 <td></td> <td>2</td> <td></td> <td>4</td> <td></td> <td></td> <td>15:00</td> <td></td> <td>107</td> <td></td> <td>89</td> <td></td> <td></td>		2		4			15:00		107		89		
0330 2 12 1530 99 83 03345 1 6 14 39 45 15.45 86 403 74 351 04.00 0 1 5 16.05 72 59 59 04.45 3 79 91 217 224 16.45 56 276 53 234 05.00 8 135 1770 65 47 55 50 50 50 05.15 16 136 177.15 55 50 200 55 55 50 06.00 25 135 173.0 75 55 50 200 66.15 21 78 1815 43 37 06.30 26 11 78 1815 43 37 55 50 200 06.45 21 78 1818 44 189 45 1915 23 11 06.45 28 179 90 218 194 199 23 14 199 06.45 29 1945 2000 23 14 199 24 25 131 07.45 19 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
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00:30		20		9			12:30		71		56		
00:45		14	41	8	30	71	12:45		68	284	90	284	568
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01:15		0		1			13:15		52		98		
01:30		3		4			13:30		74		91		
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02:00		1		2			14:00		70		93		
02:15		4		4			14:15		72		80		
02:30		4		7			14:30		134		102		
02:45		3	12	8	21	33	14:45		113	389	95	370	759
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03:15		0		12			15:15		124		70		
03:30		1		11			15:30		99		90		
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04:15		4		50			16:15		71		59		
04:30		2		65			16:30		65		55		
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05:15		13		128			17:15		56		58		
05:30		19		135			17:30		61		59		
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06:00		15		94			18:00		38		48		
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11:15		41		52			23:15		7		8		
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11:45		47	177	61	240	417	23:45		6	35	14	37	72
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Total Vol.	881	2235 3116		2568	2492	5060						
		Daily Tot	als									
		NB SB	EB WB									
		Combined	3449 4727									
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	AM			PM								
Split %	28.3%	71.7% 38.1%		50.8%	49.2%	61.9%						
Peak Hour	11:45	05:00 05:00		14:30	13:15	14:30						
Volume	263	507 573		524	386	878						
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08:45	2	37	19	83	120	20:45		8	31	11	42	73
09:00	8		16			21:00		7		4		
09:15	15		19			21:15		11		9		
09:30	13		11			21:30		21		4		
09:45	15	51	21	67	118	21:45		11	50	6	23	73
10:00	9		24			22:00		8		7		
10:15	13		19			22:15		5		5		
10:30	15		14			22:30		12		7		
10:45	9	46	21	78	124	22:45		7	32	4	23	55
11:00	13		19			23:00		1		11		
11:15	15		25			23:15		3		4		
11:30	15		25			23:30		9		1		
11:45	20	63	20	89	152	23:45		3	16	2	18	34
otal Vol.		342		597	939				595		855	1450
					Da	aily Totals						
				NB	SB	EB	WB					
							1452					
						2389						
		AM							PM			

	AM	PM		
Split %	36.4% 63.6% 39.39	× 41.0%	59.0%	60.7%
Peak Hour	11:15 07:30 11:1	5 15:00	14:30	14:30
Volume P.H.F.	67 100 153 0.84 0.86 0.96	91 0.73	175 0.83	256 0.85

Volumes for: Wedne	cday luna 11 2	000			City	San Diego		Droi	act #	. 00 /	1/0 017	
Location: Boston A			th St		City:	San Diego		Proje	ect #	: 08-4	149-017	
AM Period NB	SB EF		WB			PM Period NB	SB	EB		WB		
00:00	4		3			12:00		22		11		
00:15	2		1			12:15		24		12		
00:30	- 1		1			12:30		24		23		
00:45	2	9	4	9	18	12:45		15	85	19	65	150
01:00	0		0			13:00		12		13		
01:15	3		2			13:15		23		15		
01:30	0		4			13:30		13		20		
01:45	0	3	2	8	11	13:45		9	57	13	61	118
02:00	0		0			14:00		10		20		
02:15	3		0			14:15		9		18		
02:30	0		0			14:30		8		35		
02:45	0	3	3	3	6	14:45		13	40	51	124	164
03:00	0		0			15:00		17		82		
03:15	5		2			15:15		24		65		
03:30	3		3			15:30		25		36		
03:45	1	9	1	6	15	15:45		17	83	27	210	293
04:00	0		5			16:00		13		45		
04:15	2		2			16:15		15		29		
04:30	3		3			16:30		19		27		
04:45	3	8	5	15	23	16:45		16	63	24	125	188
05:00	2		9			17:00		14		29		
05:15	6		14			17:15		13		20		
05:30	14		16			17:30		15		29		
05:45	20	42	11	50	92	17:45		10	52	16	94	146
06:00	28		13			18:00		13		24		
06:15	23		17			18:15		10		24		
06:30	11		26			18:30		6		19		
06:45	5	67	31	87	154	18:45		3	32	13	80	112
07:00	5		14			19:00		11		15		
07:15	8		16			19:15		10		20		
07:30	10		26			19:30		5		20		
07:45	14	37	20	76	113	19:45		15	41	12	67	108
08:00	9		20			20:00		11		8		
08:15	10		13			20:15		13		10		
08:30	13		21	(0)	440	20:30		14	10	16		05
08:45	18		14	68	118	20:45		11	49	12	46	95
09:00	13		10			21:00		9		7		
09:15	6		21			21:15		6		9		
09:30	8	20	18 24	70	102	21:30		5 5	25	11 15	40	47
09:45	3		24	73	103	21:45			25	15	42	67
10:00	7		23			22:00		9		10 10		
10:15 10:30	8 13		15 17			22:15		6 3		10 5		
10:30	8		21	76	112	22:30 22:45		3	21	5 5	30	51
				70	112				21		30	JI
11:00 11:15	15 27		34 26			23:00 23:15		0 6		3 4		
11:15	17		20 17			23:15		2		4 6		
11:45	23		9	86	168	23:45		2	11	2	15	26
otal Vol.		376		557	933				559		959	1518
		3,5				aily Totals						
				NB	SB	EB	WB					
				ND	50							
						Combined 935	1516					
						2451						

	AM		PM		
Split %	40.3% 59.7% 3	38.1%	36.8%	63.2%	61.9%
Peak Hour	11:45 10:30	11:00	12:00	14:45	14:45
Volume P.H.F.		168 0.79	85 0.89	234 0.71	313 0.79

Volumes for: Tuesday, February 21, 2006

City: San Diego

Project #: 06-4059-009

M Period NB	SB	ar Chavez EB		WB_		P	M Period N	IB	SB	EB		WB		
00:00		3		0			12:00			20		16		
00:00		0		0			12:15			15		13		
00:30	,	2		0			12:30			10		10		
00:45		0	5	3	3	8	12:45			13	58	15	54	112
		0		0			13:00	30		21		10		
01:00		0		0			13:15			8		9		
01:15		1		4			13:30			16		9		02/01
01:30		0	1	3	7	8	13:45			13	58	15	43	101
01:45	Carlos and			0			14:00			17		22		
02:00		0		0			14:15			10		24		
02:15		0 0		2			14:30			13		24		
02:30		0	0	0	2	2	14:45			14	54	16	86	140
02:45			0				15:00			26		16		
03:00		2		0			15:15			28		30		
03:15		0		1			15:30			24		13		
03:30		1	-	0	1	6	15:45			13	91	8	67	158
03:45		2	5	0	1	0			and the second	26		17		
04:00		2		1			16:00			20		22		
04:15		2		3			16:15			25		1		
04:30		0		1	5	10	16:30			27	98	9	49	147
04:45		1	5	0	5	10	16:45			22		8		
05:00		0		4			17:00			22		10		
05:15		1		3			17:15			26		2		
05:30		0		4			17:30			26	96	2	22	118
05:45		5	6	6	17	23	17:45							
06:00		2		1			18:00			19		6		
06:15		2		7			18:15			9		8		
06:30		6		7			18:30			1		3 7	24	57
06:45		4	14	8	23	37	18:45			4	33		24	
07:00		3		10			19:00			6		8		
07:15		13		16			19:15			5		6		
07:30		18		26			19:30			4		4	20	39
07:45		9	43	22	74	117	19:45			4	19	2	20	39
08:00		18		16			20:00			2		7		
08:00		17		32			20:15			0		0		
08:30		19		46			20:30			5		2		10
08:45		16	70	21	115	185	20:45			0	7	0	9	16
		11		9			21:00			4		1		
09:00		16		11			21:15			0		0		
09:15		13		11			21:30			2		1		10127.0
09:30		19	59	6	37	96	21:45			1	7	3	5	12
09:45				9		and a set that a set of	22:00			3		1		
10:00		16		3			22:15			5		2		
10:15		18		3 19			22:30			3		0		
10:30		4	54	19 9	40	94	22:30			0		2	5	16
10:45		16	54		40	51			1	1		2		
11:00		21		8			23:00			4		4		
11:15		12		22			23:15			12		2		
11:30		12	20	10	47	111	23:30 23:45			1			10	28
11:45		19	64	7	47	111	23.43						20.4	944
Total Vol.			326		371	697					550		394	344
Total Vol.												Totals	AND.	Combine
								-	NB	SB	EE	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	WB	Combine
											876		765	1641
			AM									M		
Cullton .			46.8%	6	53.2%	42.5%					58.3	%	41.7%	57.5%
Split %											16:	00	14:00	14:30
Peak Hour			08:00	D	07:45	08:00							86	167
Volume			70		116	185					98 0.9		0.90	0.72
P.H.F.			0.92		0.63	0.71					0.5	68	0.00	

Volumes for: Tuesda						San Diego		Proj	ect #:	: 08-4	4149-018	
ocation: Main St			vy & S WB	ampson	St	DM Davied ND	SB	EB				
M Period NB	<u>SB EB</u>					PM Period NB	30			WB	1	
00:00	1		3 1			12:00		25 14		24 40		
00:15 00:30	0 2		4			12:15 12:30		20		40 23		
00:30	2	6	4	8	14	12:30		33	92	23 23	110	202
		0		0	14				72		110	202
01:00 01:15	0 2		4 0			13:00 13:15		22 26		16 23		
01:30	2		2			13:30		20 18		23 17		
01:45	2	4	2	8	12	13:45		18	84	24	80	164
	0	т	0	0	12			22	04	21	00	104
02:00 02:15	0		0			14:00 14:15		22		21 38		
02:30	2		0			14:30		20		33		
02:45	0	2	0	0	2	14:45		20	98	39	131	229
03:00	0	2	1	0	2	15:00		20	70	25	101	227
03:15	0		0			15:15		20 16		25 26		
03:30	0		1			15:30		30		28		
03:45	2	2	0	2	4	15:45		15	81	18	97	178
04:00	0		0			16:00		20		16		
04:15	5		1			16:15		20		25		
04:30	6		5			16:30		37		14		
04:45	12	23	3	9	32	16:45		21	104	13	68	172
05:00	14		11			17:00		18		24		
05:15	26		5			17:15		10		21		
05:30	27		21			17:30		18		15		
05:45	26	93	27	64	157	17:45		11	64	18	78	142
06:00	22		33			18:00		9		10		
06:15	25		26			18:15		8		9		
06:30	17		38			18:30		6		5		
06:45	23	87	38	135	222	18:45		6	29	4	28	57
07:00	17		22			19:00		5		11		
07:15	13		32			19:15		3		3		
07:30	14		28			19:30		4		8		
07:45	14	58	32	114	172	19:45		7	19	8	30	49
08:00	13		34			20:00		3		4		
08:15	11		26			20:15		6		4		
08:30	16		36			20:30		5		7		
08:45	18	58	25	121	179	20:45		6	20	2	17	37
09:00	14		24			21:00		1		4		
09:15	18		25			21:15		3		5		
09:30	18		22			21:30		3		2		
09:45	20	70	19	90	160	21:45		4	11	3	14	25
10:00	16		25			22:00		2		6		
10:15	14		17			22:15		5		4		
10:30	18		26			22:30		4		3		
10:45	14	62	15	83	145	22:45		3	14	2	15	29
11:00	19		25			23:00		3		3		
11:15	12		22			23:15		4		1		
11:30	21		32			23:30		2		2		
11:45	18	70	25	104	174	23:45		2	11	0	6	17
Total Vol.		535		738	1273				627		674	1301
						aily Totals						
				NB	SB	EB	WB					
						Combined 1162 2574	1412					
		AM							РM			
Split %		42.0%		58.0%	49.5%				48.2%		51.8%	50.5%
eak Hour		05:15		06:00	06:00				16:00		14:15	14:15

Volume

P.H.F.

101

0.94

135

0.89

222

0.91

104

0.70

135

0.87

231

0.85

Volumes for: Wedn	esday, Ju <u>ne 11, 20</u>	08			City:	San Diego		Proj	ect #	: 0 <u>8-</u> 4	4149-018	
Location: Main St			ıy & S	ampson								
AM Period NB	SB EB		WB			PM Period NB	SB	EB		WB		
00:00	2		3			12:00		21		27		
00:15	2		1			12:15		19		26		
00:30	1		1			12:30		17		24		
00:45	1	6	0	5	11	12:45		16	73	26	103	176
01:00	2		1			13:00		25		22		
01:15	0		1			13:15		17		23		
01:30	2		0			13:30		20		27		
01:45	1	5	1	3	8	13:45		20	82	24	96	178
02:00	1		0			14:00		14		22		
02:15	0		0			14:15		18		38		
02:30	0		0			14:30		27		45		
02:45	1	2	0	0	2	14:45		26	85	33	138	223
03:00	0		0			15:00		15		33		
03:15	0		1			15:15		20		23		
03:30	4		0			15:30		24		30		
03:45	1	5	0	1	6	15:45		22	81	25	111	192
04:00	1		2			16:00		22		19		
04:15	6		1			16:15		18		24		
04:30	7		3			16:30		22		18		
04:45	12	26	7	13	39	16:45		21	83	26	87	170
05:00	16		11			17:00		21		18		
05:15	23		14			17:15		17		15		
05:30	32		21			17:30		19		15		
05:45	27	98	28	74	172	17:45		13	70	16	64	134
06:00	17		25			18:00		9		10		
06:15	29		33			18:15		7		12		
06:30	34		46			18:30		8		11		
06:45	23	103	31	135	238	18:45		6	30	7	40	70
07:00	17		22			19:00		3		5		
07:15	13		32			19:15		9		3		
07:30	14		28			19:30		4		6		
07:45	15	59	31	113	172	19:45		9	25	10	24	49
08:00	13		30			20:00		3		9		
08:15	11		28			20:15		6		7		
08:30	16		32			20:30		8		3		
08:45	18	58	21	111	169	20:45		5	22	5	24	46
09:00	12		13			21:00		4		2		
09:15	12		27			21:15		2		6		
09:30	13		14			21:30		4		5		
09:45	22	64	27	81	145	21:45		2	12	7	20	32
10:00	13		25			22:00		3		4		
10:15	13		23			22:00		2		4		
10:30	14		21			22:30		6		8		
10:45	21	62	21	89	151	22:45		1	12	2	15	27
11:00	23		30			23:00		2		1		
11:15	23		30 27			23:00		2		2		
11:15	21		27			23:15		2 4		2		
11:45	18	88	26	110	198	23:45		4	10	0	4	14
								۲		<u> </u>		
Total Vol.		576		735	1311				585		726	1311
						aily Totals						
				NB	SB	EB	WB					
						Combined 1161	1461					
						2622						
		AM				2022			PM			
Split %				56 10/	50.09/	-					55.494	50.09/
Split %		43.9%		50.1%	50.0%				44.6%)	55.4%	50.0%
Peak Hour		05:45		06:00	05:45				14:30		14:15	14:15
Volumo		107		125	220				00		140	225

Volume

P.H.F.

107

0.79

135

0.73

239

0.75

88

0.81

149

0.83

235

0.82

COUNTS UNLIMITED INC 25424 JACLYN AVENUE MORENO VALLEY CA 92557 951-247-6716

CITY OF SAN DIEGO

MAIN STREET B/ 27TH STREET - 28TH STREET

24 HOUR	DIRECTIO	NAL VOLUME COUNT
0	47.0 1.00	

24 HOUR	<u>DIRECTIO</u>	NAL VOLU							AL		7440
Start	17-Oct-06	EASTBO		Hour	Fotals	WESTE	OUND	Hour	Totals	Combine	ed Totals
Time	Tue		Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		8	67	··.ə		7	72				
12:00		10	58			6	52				
12:30		26	54			18	52				
12:30		19	43	63	222	14	43	45	219	108	441
				03	222			45	219	100	441
01:00		13	64			2	57				
01:15		9	44			7	63				
01:30		8	54			8	37				
01:45		7	49	37	211	7	44	24	201	61	412
02:00		6	67			6	43				
02:15		7	68			8	46				
02:30		7	149			7	57				
02:45		8	136	28	420	14	65	35	211	63	631
03:00		4	214	20	720	0	76	00	211	00	001
03:15		3	215			7	64				
03:30		0	121			8	47				
03:45		5	95	12	645	12	41	27	228	39	873
04:00		5	106			10	41				
04:15		10	103			23	29				
04:30		11	123			29	51				
04:45		12	81	38	413	31	32	93	153	131	566
05:00		9	86	00		59	23	00	100		000
05:15		18	71			111	29				
05:30		24	48			130	24				
05:45		28	30	79	235	128	19	428	95	507	330
06:00		29	34			113	18				
06:15		30	25			96	18				
06:30		28	26			92	21				
06:45		20	21	107	106	62	18	363	75	470	181
07:00		38	18	-		72	19		-	_	-
07:15		28	18			68	12				
07:10		25	15			106	16				
				100	62			205	C 4	470	407
07:45		17	12	108	63	119	17	365	64	473	127
08:00		37	18			66	20				
08:15		31	15			80	18				
08:30		32	13			50	15				
08:45		41	11	141	57	34	15	230	68	371	125
09:00		51	14			36	13				
09:15		41	17			34	15				
09:30		33	20			30	15				
09:45		46	10	171	61	47	23	147	66	318	127
				17.1	01			147	00	510	121
10:00		58	7			44	24				
10:15		35	7			49	16				
10:30		42	35			44	24				
10:45		59	3	194	52	55	13	192	77	386	129
11:00		72	15			45	9				
11:15		60	17			48	7				
11:30		70	20			62	9				
11:45		58	9	260	61	56	9	211	34	471	95
Total		1238	2546	1238	2546	2160	1491	2160	1491	3398	4037
Combined				1200	2040			2100	1451	5550	4007
		378	84	37	84	36	51	36	51	74	35
Total		40.45									
AM Peak		10:45				05:15					
Vol.		261				482					
P.H.F.		0.906				0.927					
PM Peak			02:30				02:30				
Vol.			714				262				
P.H.F.			0.830				0.862				
Percentag		20 70/	67 20/			50.20/	10 00/				
e		32.7%	67.3%			59.2%	40.8%				
ADT/AAD											
Т		ADT 7,435	A	ADT 7,435							
•											

 FILE#
 :
 0419-06

 STATION#
 :
 2052

 DATE
 :
 10/17/06

 ADT
 :
 7440

olumes for: Tuesday, Jun					City:	San Diego		Proj	ect #:	08-4	149-019	
ocation: Main St btwn		2nd St						50				
M Period NB SB	EB		WB			PM Period NB	SB	EB		WB		
00:00	19		16			12:00		69		104		
00:15	11		13			12:15		81		114		
00:30	26	70	10	F1	104	12:30		86	210	71	274	(0)
00:45	17	73	12	51	124	12:45		82	318	85	374	692
01:00	9		10			13:00		80		103		
01:15	2		5			13:15		77		98		
01:30	5	22	3	24	47	13:30		83	210	79	277	(05
01:45	6	22	6	24	46	13:45		78	318	97	377	695
02:00	4		5			14:00		98		109		
02:15	5 7		3			14:15		101		76		
02:30	4	20	11 3	22	10	14:30		142 157	100	103 108	396	894
02:45		20		22	42	14:45			498		390	894
03:00	6		5			15:00		141		94		
03:15	3		4			15:15		149 124		106		
03:30	1	11	9 14	32	43	15:30		134 131	555	89 73	362	917
03:45		11		32	40	15:45			000		302	71/
04:00	7		20			16:00		140		94 69		
04:15	11		32			16:15		141		68		
04:30 04:45	12 16	46	53 72	177	223	16:30 16:45		117 117	515	66 71	299	814
		40		177	223				515		277	014
05:00	28		108			17:00		113		73		
05:15	37		147 125			17:15		118 90		69 60		
05:30 05:45	30 40	135	125 154	534	669	17:30 17:45		90 75	396	60 58	260	656
	55	155	114	554	007				370	51	200	030
06:00 06:15	55 66		142			18:00 18:15		53 57		42		
06:30	67		144			18:30		44		40		
06:45	79	267	98	498	765	18:45		49	203	48	181	384
07:00	92	207	117	170		19:00		46	200	49		
07:15	74		103			19:15		52		33		
07:30	61		96			19:30		36		56		
07:45	82	309	124	440	749	19:45		39	173	45	183	356
08:00	60		74			20:00		30		30		
08:15	59		84			20:15		33		32		
08:30	44		65			20:30		25		32		
08:45	66	229	63	286	515	20:45		16	104	30	124	228
09:00	47		68			21:00		27		34		
09:15	56		67			21:15		40		48		
09:30	38		72			21:30		28		36		
09:45	55	196	78	285	481	21:45		27	122	24	142	264
10:00	56	_	64			22:00		33		32		
10:15	51		67			22:15		33		21		
10:30	69		85			22:30		35		23		
10:45	70	246	79	295	541	22:45		20	121	20	96	217
11:00	81		86			23:00		15		18		
11:15	78		84			23:15		15		10		
11:30	88		104			23:30		25		13		
11:45	81	328	97	371	699	23:45		16	71	9	50	121
otal Vol.		1882		3015	4897				3394		2844	6238
						aily Totals						
				NB	SB	EB	WB					
						Combined 5276	5859					
						11135						
		AM							РМ			

	AM	PM		
Split %	38.4% 61.6% 44.0%	54.4%	45.6%	56.0%
Peak Hour	11:00 05:45 06:15	14:30	14:30	14:30
Volume P.H.F.	3285548050.930.900.95	589 0.94	411 0.95	1000 0.94

olumes for: Wedne	sday, June	e 11, 20	08			City:	San Diego			Р	roj	ect #:	08-4	149-019	
ocation: Main St			2nd St												
M Period NB	SB	EB		WB			PM Period	NB	S		EB		WB		
00:00		12		10			12:00				6		91		
00:15		9		9			12:15				5		126		
00:30		16		10	45	100	12:30				34	250	99	201	740
00:45		18	55	16	45	100	12:45				7	352	80	396	748
01:00		10		13			13:00				0		76		
01:15		5		10			13:15				i4		85		
01:30		7 5	27	7 3	33	60	13:30 13:45				32 57	263	97 100	358	621
01:45			21		55	00						203		330	021
02:00		3		3			14:00				94 95		94 95		
02:15 02:30		2 1		6 5			14:15 14:30				'5 24		95 92		
02:45		8	14	8	22	36	14:30				45	458	87	368	826
		8	14		22	50					43 69	400	113	300	020
03:00 03:15		8 7		3 4			15:00 15:15				69 72		113		
03:15		5		4 9			15:15				72 76		118		
03:45		3	23	9 14	30	53	15:30				70 58	675	86	429	1104
04:00		8		20			16:00				59 59	2.0	100		
04:00		8 14		20 29			16:00				33		68		
04:30		14		38			16:30				23		70		
04:45		18	52	59	146	198	16:45				06	521	55	293	814
05:00		21		96			17:00				35		64		
05:15		29		145			17:15				0		78		
05:30		40		139			17:30				7		51		
05:45		51	141	134	514	655	17:45				6	378	71	264	642
06:00		57		121			18:00				57		43		
06:15		82		119			18:15				9		57		
06:30		97		133			18:30				2		51		
06:45		79	315	106	479	794	18:45			5	3	221	44	195	416
07:00		79		102			19:00			4	8		43		
07:15		70		111			19:15				2		37		
07:30		59		111			19:30				6		40		
07:45		73	281	105	429	710	19:45			3	34	180	42	162	342
08:00		55		84			20:00			2	25		52		
08:15		52		90			20:15			3	3		36		
08:30		97		81			20:30			3	2		44		
08:45		90	294	73	328	622	20:45			3	6	126	48	180	306
09:00		56		58			21:00			2	4		28		
09:15		49		87			21:15			2	9		26		
09:30		53		71			21:30				19		30		
09:45		48	206	71	287	493	21:45			3	2	124	25	109	233
10:00		48		68			22:00				26		29		
10:15		53		78			22:15				22		26		
10:30		64		95			22:30				3		17		
10:45		72	237	89	330	567	22:45				27	108	15	87	195
11:00		87		119			23:00				3		13		
11:15		100		92			23:15				4		17		
11:30		84	o	79	101	7.46	23:30				2		13	FF	
11:45		76	347	111	401	748	23:45			1	0	59	12	55	114
otal Vol.			1992		3044	5036						3465		2896	6361
						D	aily Total	S							
					NB	SB		EB	WB						
							Combined		5940						
							11397								
							39/								

	AM		PM		
Split %	39.6% 60.4% 4	4.2%	54.5%	45.5%	55.8%
Peak Hour	11:00 05:15	06:15	15:00	14:45	15:00
Volume P.H.F.		797 0.87	675 0.96	430 0.91	1104 0.95
1.11.1.	0.07 0.75	0.07	0.70	0.71	0.95

CITY OF SAN DIEGO - TRAFFIC ENGINEERING Machine Count Traffic Volumes - City Streets	All From Dates 1/1/2003 to 3/5/2008
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STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
MAIN SB ST	[ALAMITOS AV - HOLLISTER ST]	02200 - 02300	4311	EAST WEST *TOTAL	11260 12270 23530	12/12/2006 12/12/2006	0577-06 0577-06
MAIN ST	(27 ST - 28 ST)	02700 - 02800	2052	EAST WEST *TOTAL	3780 3660 7440	10/17/2006 10/17/2006	0419-06 0419-05
MAIN S'T	[29 ST - 30 ST]	02900 - 03000	2053	EAST WEST *TOTAL	7460 6870 14330	11/16/2005 11/16/2005	0681-05 0681-05
MAIN ST	[RIGEL ST - SIVA ST]	03350 - 03400	3551	WEST EAST EAST WEST *TOTAL	7940 9010 7990 7960 15950	1/7/2003 1/9/2003 1/24/2006 1/24/2006	0056-03 0055-03 0029-06 0029-06
MAIN ST	[VESTA ST - WODEN ST]	03700 - 03740	3650	EAST WEST TOTAL EAST WEST TOTAL	7490 8620 16110 8100 7070 15170	1/6/2004 1/6/2004 1/18/2007 1/18/2007	0005-04 0006-04 0027-07 0027-07
MALLARD ST	[ORIOLE ST - SWAN ST]	06300 - 06400	3727	EAST WEST +TOTAL EAST WEST +TOTAL	3620 4180 7800 3900 3690 7590	2/3/2005 2/3/2005 2/21/2008 2/21/2008	0105-05 0105-05 0028-08 0028-08
MANGO DR	[CALAIS DR - D M HTS RD]	13600 - 13800	5057	NORTH SOUTH	1720	8/26/2004 8/26/2004	0603-04 0603-04

olumes to	r: Tu	iesday	, Jani	uary 24,	2006	City:	San Diego					FILE#: 0029-0	6
Location:	MAIN	N ST (RIGEI	_ ST - SI	VA ST)		[3551]					ADT: 15950	
AM Period	WB		EB				PM Period	WB		EB			
00:00	17		12				12:00	94		121			
00:15	11		16				12:15	126		125			
00:30	30		16				12:30	131		151			
00:45	14	72	16	60		132	12:45	107	458	134	531		989
01:00	7		8				13:00	109		139			
01:15	7		11				13:15	104		109			
01:30	12	07	6			70	13:30	105	400	134	100		001
01:45	11	37	8	33		70	13:45	120	438	101	483		921
02:00	10		5				14:00	106		134			
02:15	7		2				14:15	109		139			
02:30	7 10	24	6 10	22		57	14:30	168 162	F 16	142	561		1107
02:45		34	10	23		57	14:45	163	546	146	561		1107
03:00	1		6				15:00	196		132			
03:15	5		5				15:15	207		120			
03:30	7 12	26	8 22	11		67	15:30	194 240	700	152	525		1272
03:45	13	26	22	41		67	15:45	240	837	131	535		1372
04:00	6		21				16:00	263		142			
04:15	8		22				16:15	265		116			
04:30	4 11	29	39 54	136		165	16:30	263 286	1077	112 106	476		1553
04:45		29		130		COL	16:45		1077		470		1000
05:00	13		82				17:00	266		85			
05:15	26		70				17:15	257		100			
05:30	47 50	144	106	200		F 40	17:30	247	000	76	242		1222
05:45	58	144	140	398		542	17:45	220	990	81	342		1332
06:00	61		122				18:00	183		110			
06:15	74		118				18:15	136		81			
06:30	89 07	211	109	477		700	18:30	92 02	402	82 105	270		071
06:45	87	311	128	477		788	18:45	82	493	105	378		871
07:00	92		138				19:00	87		60			
07:15	79 50		169				19:15	61		58			
07:30	59 58	288	186 154	647		935	19:30	64 61	273	61 62	241		514
07:45		200		047		930	19:45	61	275		241		514
08:00	59		134				20:00	74		65			
08:15	59 55		106				20:15	54		62			
08:30 08:45	55 62	235	112 120	470		707	20:30 20:45	40 52	220	54 51	232		452
		233		472		101			220		232		452
09:00	60		111				21:00	64		49 20			
09:15	67 04		129 115				21:15	64 24		39 29			
09:30	84 09	200		162		770	21:30	34	104		166		240
09:45	98	309	108	463		772	21:45	32	194	49	166		360
10:00	86 05		134				22:00	36		39 27			
10:15	85 74		126				22:15	40		36			
10:30 10:45	74 05	240	115 120	105		025	22:30	36 20	122	32 29	125		267
10:45	95	340	120	495		835	22:45	20	132	28	135		207
11:00	95 104		121				23:00	27		35			
11:15	104		136 144				23:15	30 22		18 10			
11:30 11:45	102 106	407	144 134	535		942	23:30 23:45	23 19	99	18 24	95		194
			104				20.70	17		27			
otal Vol.		2232		3780		6012			5757		4175		9932
												Daily Totals	
									WB		EB		Combined
									7989		7955		15944
					AM							PM	
Split %		37.1%		62.9%		37.7%			58.0%		42.0%		62.3%
eak Hour		11:45		07:00		11:45			16:15		14:00		16:00
		457		647		988			1080		561		1553
Volume				UT1					1000				1000

All From Dates 1/1/2003 to 3/5/2008

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STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
19 ST	[COMMERCIAL ST - IMPERIAL AV]	00001 - 00100	2094	NORTH	3834	1/16/2008	0543-07
19 ST	[K ST - SD 005 R-B]	00300 - 00320	2095	NORTH 1-WY	11190	11/16/2005	0689-05
25 ST	[COMMERCIAL ST - IMPERIAL AV]	00001 - 00100	2172	NORTH SOUTH *TOTAL	3718 3340 7060	1/16/2008 1/16/2008	0545-07 0545-07
25 ST	[K ST - J ST]	00300 - 00400	2171	NORTH SOUTH TOTAL	4960 5110 10070	11/10/2005 11/10/2005	0690-05 0690-05
25 ST	[MARKET ST - G ST]	00600 - 00700	2175	NORTH SOUTH +TOTAL	6920 6130 13040	10/17/2006	0427-6 0427-06
25 ST	(E ST - BROADWAY)	00900 - 01000	2170	NORTH SOUTH *TOTAL	5570 7090 12660	10/17/2006 10/17/2006	0426-06 0426-06
25 ST	[BROADWAY - C ST]	01000 - 01100	2173	NORTH SOUTH *TOTAL	5100 5460 10560	11/16/2005 11/16/2005	0691-05 0691-05
26 ST	[NEWTON AV (N) - NATIONAL AV]	011005 - 010005	NONE	BOTH	2380	2/4/2003	0163-03
26 ST	[B ST - A ST]	01200 - 01300	2811	NORTH SOUTH *TOTAL	2640 3160 5800	10/25/2006 10/25/2006	0438-06 0438-06
26 ST RD	(GOLF COURSE DR - CMTO CTRO)	01400 - 01650	2810	BOTH NORTH SOUTH TOTAL	11870 6660 4990 11650	3/10/2004 3/13/2007 3/13/2007	0213-04 0146-07 0146-07
27 SB ST	(CORONADO SB AV - CMTO SECOYA)	01100 - 01250	4341	NORTH	2120	12/7/2005	0651-05

STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
28 ST	[C ST - B ST]	01100 - 01200	2182	*TOTAL	8930		
28 ST	[MAIN ST - BOSTON AV]	01300S - 01200S	2020	NORTH SOUTH *TOTAL	12380 13640 26020	11/8/2005 11/8/2005	0679-05 0679-05
28 ST	[HARBOR DR - MAIN ST]	01399S - 01300S	2021	NORTH SOUTH *TOTAL	9710 9690 18400	11/8/2005 11/8/2005	0677-05 0677-05
28 ST	(ASH ST - BEECH ST)	01400 - 01500	2183	BOTH NORTH SOUTH *TOTAL	3870 2170 1760 3930	4/23/2003 3/9/2006 3/9/2006	0484-03 0158-06 0158-06
30 ST	[K ST (W) - J ST]	00300 - 00400	2197	NORTH SOUTH *TOTAL	1130 1530 2660	1/16/2008 1/16/2008	0549-07 0549-07
30 ST	[CLAY AV - WEBSTER AV]	00300S - 00200S	2195	NORTH SOUTH 'TOTAL	1630 1320 2940	1/16/2008 1/16/2008	()548-07 0548-07
30 ST	[E ST - BROADWAY]	00900 - 01000	2190	NORTH SOUTH *TOTAL	2170 2290 4460	1/16/2008 1/16/2008	0547-07 0547-07
30 ST	(BROADWAY - C ST)	01000 - 01100	2191	NORTH SOUTH *TOTAL	8190 7820 16010	10/17/2006 10/17/2006	0429-06 0429-06
30 ST	[C ST - B ST]	01100 - 01200	2192	NORTH SOUTH *TOTAL	7550 5830 13380	11/1 7/2005 11/1 7/2 005	0693-05 0693-05
30 ST	(FIR ST - GRAPE ST)	01900 - 02000	2312	BOTH NORTH	3340	3/30/2004 4/4/2007	0288-04 0203-07

CITY OF SAN DIEGO - TRAFFIC ENGINEERING Machine Count Traffic Volumes - City Streets	
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All From Dates 1/1/2003 to 3/5/2008

STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
32 ST	[G ST - F ST]	00700 - 00800	2005	SOUTH *TOTAL	: 4270 : 7030	10/17/2006	0413-06
32 ST	[GREELY AV - MARTIN AV (S)]	00800S - 00710S	2002	NORTH SOUTH *TOTAL	2050 2300 4350	1/16/2008 1/16/2008	0538-07 0538-07
32 ST	[NEWTON AV - NATIONAL AV]	01100S - 01000S	2000	NORTH SOUTH *TOTAL	2670 2680 5350	11/8/2005 11/8/2005	0676-05 0676-05
32 ST	[WABASH BL - UNNAMED 4 RD]	01700S - 01600S	2001	NORTH SOUTH •TOTAL	6430 7590 14020	10/17/2006 10/17/2006	0411-06 0411-06
32 ST	[MCCANDLESS BL - WABASH BL]	01800S - 01700S	2006	NORTH SOUTH *TOTAL	: 10540 : 9810 : 20350	1/16/2008 1/16/2008	0540-07 0540-07
32 ST	[THORN ST - UPAS ST]	03300 - 03400	2330	BOTH NORTH SOUTH *FOTAL	3960 2380 1580 3960	4/6/2004 4/4/2007 4/4/2007	0338-04 0207-07 02/07/07
32 ST	[DWIGHT ST - LANDIS ST]	03600 - 03700	2333	NORTH SOUTH *TOTAL	3070 1970 5040	4/27/2005 4/27/2005	0202-05 0202-05
32 ST	[N PK WY - UNIVERSITY AV]	03800 - 03900	2334	BOTH NORTH SOUTH 'TOTAL	7440 4810 1930 6740	4/6/2004 4/4/2007 4/4/2007	0342-04 0208-07 0208-07
32 ST	(UNIVERSITY AV - LINCOLN AV)	03900 - 04000	2335	NORTH SOUTH *TOTAL	: 1530 : 1720 : 3250	5/4/2006 5/4/2006	0212-06 0212-06

STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
LK MURRAY BL	(BLUE LK DR - JACKSON DR)	08330 - 08380	3514	NORTH SOUTH *TOTAL	6100 6070 12170	5/26/2005 5/26/2005	0262-05 0262-05
LK MURRAY BL	[BEAVER LK DR - SN CARLOS DR]	08550 - 08600	3513	NORTH SOUTH "TOTAL	7510 7250 14760	5/26/2005 5/26/2005	0261-05 0261-05
LOGAN AV	[16 ST - 17 ST]	01600 - 01650	NONE	EAST WEST *TOTAL EAST WFST	1080 1650 2730 1340 2190	3/12/2003 3/12/2003 2/25/2004 2/25/2004	0210-03 0209-03 0163-04 0164-04
LOGAN AV	[SIGSBEE ST - BEARDSLEY ST]	01700 - 01800	2981	•TOTAL EAST WEST *TOTAL	3530 1780 1240 3010	1/17/2008 1/17/2008	0558-07 0558-07
LOGAN AV	[C CHAVEZ PY - SD 005 R-C]	01900 - 02000	2980	EAST WEST *TOTAL	7730 1150 8880	10/19/2006 10/19/2006	0439-06 0439-06
LOGAN AV	[44 ST - ELIZABETH ST]	04400 - 04450	3031	EAST WEST *TOTAL	3680 4290 7970	1/6/2004 1/6/2004	0009-04 0010-04
LOGAN AV	[49 ST - EUCLID AV]	04900 - 05100	3030	EAST WEST 'TOTAL EAST WEST 'TOTAL	5410 4430 9840 5750 5410	1/14/2003 1/14/2003 1/17/2006 1/17/2006	0077-03 0078-03 0005-06 0005-06
LOMALAND DR	CATALINA BL - TEMPLE ST]	03800 - 03850	1075	EAST	2340	6/24/2004	0481-04

CITY OF SAN DIEGO - TRAFFIC ENGINEERING Machine Count Traffic Volumes - City Streets	All From Dates 1/1/2003 to 3/5/2008
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STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
MAIN SB ST	[ALAMITOS AV - HOLLISTER ST]	02200 - 02300	4311	EAST WEST *TOTAL	11260 12270 23530	12/12/2006 12/12/2006	0577-06 0577-06
MAIN ST	(27 ST - 28 ST)	02700 - 02800	2052	EAST WEST *TOTAL	3780 3660 7440	10/17/2006 10/17/2006	0419-06 0419-05
MAIN S'T	[29 ST - 30 ST]	02900 - 03000	2053	EAST WEST *TOTAL	7460 6870 14330	11/16/2005 11/16/2005	0681-05 0681-05
MAIN ST	[RIGEL ST - SIVA ST]	03350 - 03400	3551	WEST EAST EAST WEST *TOTAL	7940 9010 7990 7960 15950	1/7/2003 1/9/2003 1/24/2006 1/24/2006	0056-03 0055-03 0029-06 0029-06
MAIN ST	[VESTA ST - WODEN ST]	03700 - 03740	3650	EAST WEST TOTAL EAST WEST TOTAL	7490 8620 16110 8100 7070 15170	1/6/2004 1/6/2004 1/18/2007 1/18/2007	0005-04 0006-04 0027-07 0027-07
MALLARD ST	[ORIOLE ST - SWAN ST]	06300 - 06400	3727	EAST WEST +TOTAL EAST WEST +TOTAL	3620 4180 7800 3900 3690 7590	2/3/2005 2/3/2005 2/21/2008 2/21/2008	0105-05 0105-05 0028-08 0028-08
MANGO DR	[CALAIS DR - D M HTS RD]	13600 - 13800	5057	NORTH SOUTH	1720	8/26/2004 8/26/2004	0603-04 0603-04

All From Dates 1/1/2003 to 3/5/2008

STREET NAME	SLIMIT	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
NARRAGANSETT AV	[STA BARBARA ST - GUIZOT ST]	04400 - 04500	1090	EAST WEST	1620 1750	6/24/2004 6/24/2004	0492-()4 0492-04
				*TOTAL EAST WEST •TOTAL	3370 1540 1930 3470	6/28/2007 6/28/2007	0323-07 0323-07
NATIONAL AV	[COMMERCIAL ST - 16 ST]	01400 - 01600	NONE	EAST WEST •TOTAL FAST	1090 1280 2370 940	3/12/2003 3/12/2003 2/25/2004	0211-03 0212-03 0161-04
				WEST TOTAL	1520 2460	2/25/2004	0162-04
NATIONAL AV	(BEARDSLEY ST - C CHAVEZ PY)	01800 - 01900	2721	EAST WEST *TOTAL	2810 2490 5300	11/10/2005 11/10/2005	0698-05 0698-05
NATIONAL AV	[EVANS ST - SAMPSON ST]	02100 - 02200	2060	EAST WEST *TOTAL	1780 1920 3700	11/10/2005 11/10/2005	0683-05 0683-05
NATIONAL AV	[26 ST - 27 ST]	02600 - 02700	2062	EAST WEST •TOTAL	3510 4280 7790	1/16/2008 1/16/2008	0541-07 0541-07
NATIONAL AV	[28 ST - Z9 ST]	02800 - 02900	2059	BOTH	13440	10/17/2006	0420-06
NATIONAL AV	[30 ST - 31 ST]	03000 - 03100	2065	EAST WEST *TOTAL	7530 6880 14410	11/3/2005 11/3/2005	0684-05 068 4- 05
NATIONAL AV	[33 ST - 35 ST]	03300 - 03500	3001	EAST WEST •TOTAL EAST	6730 6740 13470 5930	1/7/2003 1/7/2003 1/17/2006	0060-03 0061-03 0002-06

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STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
SAIPAN DR	[ALLEGHANY ST - POTOMAC ST]	02100 - 02300	NONE	SOUTH TOTAL	1200 2210	2/2/2005	0038-05
			3542	SOUTH SOUTH	1360 1620 7000	2/10/2005 2/10/2005	0104-05 0104-05
				TOTAL SOUTH *TOTAL	2990 1350 1400 2740	2/21/2008 2/21/2008	0042-08 0042-08
SALMON RIVER RD	[CAL ROSAS - ADOLPHIA ST]	12800 - 12900	5270	NORTH SOUTH	1410 1550 2960	3/1/2005 3/1/2005	0137-05 0137-05
				NORTH SOUTH *TOTAL	1280 1410 2690	2/26/2008 2/26/2008	0098-08 0098-08
SALMON RIVER RD	[FAIRGROVE LN - PSO MONTALBAN]	13300 - 13400	5269	BOTH	4770	2/19/2003	0125-03
SAMPSON ST	[NATIONAL. AV - NEWFON AV]	01000 - 01100	2033	NORTH SOUTH *TOTAL	1570 2230 3800	11/15/2005 11/15/2005	0680-05 0680-05
SANDROCK RD	(GREYLING DR - MURRAY RDG RD)	03300 - 03380	6171	NORTH SOUTH TOTAL	4520 5210 9730	9/26/2006 9/26/2006	0357-06 0357-06
SANDROCK RD	[GLENHAVEN ST - HAVETEUR WY]	03450 - 03490	6170	NORTH SOUTH TOTAL	6090 5790 11880	11/3/2005 11/3/2005	0583-05 0583-05
SANTO RD	[FRIARS RD - ADM BAKER RD]	02350 - 02400	8024	SOUTH NORTH NORTH SOUTH	4790 4860 4730 5340	4/17/2003 4/19/2003 5/20/2003 5/20/2003	0468-03 0467-03 0509-03 0510-03

CITY OF SAN DIEGO - TRAFFIC ENGINEERING	Machine Count Traffic Volumes - City Streets	
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							Page 300
STREET NAME	LIMITS	BLOCK NOS.	STATION NUMBER	DIRECTION	WK-DAY VOLUME	STARTING DATE	FILE NUMBER
VALLEY RD	[CAL ABAJO - REO DR]	05700 - 05900	3094	EAST WEST *TOTAL	3260 3650 6910	3/21/2007 3/21/2007	0160-07 0160-07
VALLEY RD	[REO DR - TONAWANDA DR]	05900 - 05999	3093	EAST WEST *TOTAL EAST WEST *TOTAL	6490 6240 12730 3070 2940 6010	2/1/2005 2/1/2005 2/19/2008 2/19/2008	0029-05 0029-05 0047-08 0047-08
VAN DYKE AV	[ADAMS AV - ALDINE DR]	04700 - 04729	3381	NORTH SOUTH +TOTAL	3460 3360 6820	5/4/2006 5/4/2006	0226-06 0226-06
VANDEVER AV	(RIVERDALE ST - MSS GORGE RD)	04400 - 04500	9231	EAST WEST •TOTAL	4190 2530 7050	5/27/2005 5/27/2005	0367-05 0367-05
VANDEVER AV	[MSS GORGE RD - DECENA DR]	04500 - 04550	NONE	EAST WEST *TOTAL	940 770 1710	5/17/2005 5/17/2005	0368-05 0368-05
VESTA ST	[ACACIA ST - BIRCH ST]	01700 - 01800	3356	BOTH NORTH	5050 2640	1/7/2003 1/24/2006	0057-03 0024-06
VESTA ST	[DALBERGIA ST - MAIN ST]	02000 - 02100	3365	BOTH NORTH SOUTH *TOTAL	4650 2610 2290 4900	2/5/2003 1/24/2006 1/24/2006	0109-03 0023-06 0023-06
VETERANS HOSP DR	fL J VILGE DR - N/O]	00001 - 00009	BNON	NORTH SOUTH TOTAL	10020 9560 19580	11/30/2006 11/30/2006	0592-06 0592-06

Volumes for: Tuesday	/ June 10, 2008				City	: San Diego		Pro	iect #·	08-/	4149-020	
Location: Harbor Dr		/ St & (Cesar	Chavez		. San Diego		110	JCC1 // .	. 00	147-020	
AM Period NB	SB EB		WB		,	PM Period NB	SB	EB		WB		
00:00	28		3			12:00		84		62		
00:15	17		8			12:15		46		82		
00:30	13		7			12:30		52		74		
00:45	9	67	3	21	88	12:45		63	245	80	298	543
01:00	7		10			13:00		58		92		
01:15	6		1			13:15		64		74		
01:30	13		5			13:30		64		91		
01:45	6	32	7	23	55	13:45		93	279	90	347	626
02:00	8		5			14:00		90		109		
02:15	5		2			14:15		99		113		
02:30	5		2			14:30		101		112		
02:45	2	20	6	15	35	14:45		122	412	103	437	849
03:00	0		1			15:00		179		99		
03:00	3		י 11			15:15		179		99 79		
03:30	1		7			15:30		186		107		
03:45	1	5	6	25	30	15:45		244	788	107	407	1195
	-	5		20	50				, 00		107	11/5
04:00	5		11 25			16:00		162		82		
04:15	3 7		25 22			16:15		227 255		114 122		
04:30	7 4	19	22 29	87	106	16:30		255 196	840	122	419	1259
04:45		17		07	100	16:45			040		417	1237
05:00	7		29			17:00		224		91		
05:15	15		35			17:15		241		108		
05:30	35	05	80	0.40	0.05	17:30		220	705	69	050	4445
05:45	28	85	96	240	325	17:45		110	795	82	350	1145
06:00	52		103			18:00		90		109		
06:15	60		113			18:15		114		98		
06:30	65		140			18:30		107		79		
06:45	67	244	155	511	755	18:45		79	390	92	378	768
07:00	85		124			19:00		46		72		
07:15	85		166			19:15		20		41		
07:30	80		200			19:30		23		34		
07:45	53	303	175	665	968	19:45		16	105	33	180	285
08:00	62		203			20:00		13		34		
08:15	77		129			20:15		9		36		
08:30	57		123			20:30		14		19		
08:45	75	271	91	546	817	20:45		13	49	24	113	162
09:00	55		78			21:00		22		16		
09:15	42		88			21:15		25		31		
09:30	57		88			21:30		16		20		
09:45	51	205	87	341	546	21:45		21	84	38	105	189
10:00	77	-	56			22:00		32		20		
10:00	56		62			22:00		32 29		20		
10:30	56		70			22:30		21		37		
10:45	53	242	70	258	500	22:30		16	98	22	103	201
11:00	72		69			23:00		16	. •	11		
11:15 11:30	74 71		82 94			23:15 23:30		15 14		14 13		
11:45	71	296	94 95	340	636	23:30		8	53	15	53	106
	19		75			23.73		U		IJ		
Total Vol.		1789		3072	4861				4138		3190	7328
					D	aily Totals						
				NB	SB	ÉB	WB					
						Combined 5927	6262					
						12189	0202					
						12189						
		AM				_			PM		10	
Split %		36.8%		63.2%	39.9%)			56.5%)	43.5%	60.1%
Peak Hour		06:45		07.15	07.15				16:30		15.45	16:30

Split %	36.8%	63.2%	39.9%	56.5%	43.5%	60.1%
Peak Hour	06:45	07:15	07:15	16:30	15:45	16:30
Volume P.H.F.	317 0.93	744 0.92	1024 0.91	916 0.90	440 0.90	1338 0.89

Volumes for: Wedn	esdav lune	11 20	08			Citv	San Diego			Proi	ect #	· 08-/	149-020	
Location: Harbor				Cesar	Chavez		-oun-Dicgo					. 00-4	020	
AM Period NB	SB	EB	γδια	WB	CHAVEZ	РКЛУУ	PM Period N	NΒ	S	B EB		WB		
00:00	50	13		12			12:00		5	<u>91</u>		93		
00:00		16		4			12:00			51		93 73		
00:30		15		6			12:30			46		78		
00:45		9	53	7	29	82	12:45			64	252	84	328	580
01:00		5		4			13:00			59		77		
01:15		5		6			13:15			64		78		
01:30		12		8			13:30			66		81		
01:45		4	26	7	25	51	13:45			99	288	69	305	593
02:00		10		5			14:00			102		81		
02:15		7		4			14:15			102		67		
02:30		3		6			14:30			108		99		
02:45		1	21	5	20	41	14:45			136	448	84	331	779
03:00		0		4			15:00			198		63		
03:15		3		11			15:15			158		98		
03:30		1		3			15:30			191		109		
03:45		1	5	10	28	33	15:45			234	781	103	373	1154
04:00		3		13			16:00			182		86		
04:15		5		20			16:15			237		102		
04:30		5		22		400	16:30			284		90	070	1000
04:45		1	14	34	89	103	16:45			221	924	101	379	1303
05:00		7		35			17:00			218		95		
05:15		20		34			17:15			214		70		
05:30		35	01	63	225	21/	17:30			233	70/	91 72	220	1115
05:45		19	81	103	235	316	17:45			121	786	73	329	1115
06:00		58 54		89 118			18:00			92 104		96 108		
06:15 06:30		56 68		142			18:15 18:30			104		92		
06:45		77	259	142	499	758	18:45			77	394	92 87	383	777
07:00		83	237	148	477	730				44	574	53	303	111
07:00		63 77		140			19:00 19:15			27		44		
07:30		75		177			19:30			19		47		
07:45		47	282	195	679	961	19:45			11	101	35	179	280
08:00		56		104			20:00			18		34		
08:15		67		127			20:15			10		34		
08:30		62		109			20:30			14		25		
08:45		66	251	93	433	684	20:45			16	58	33	126	184
09:00		61		65			21:00			20		27		
09:15		41		74			21:15			32		25		
09:30		49		79			21:30			15		33		
09:45		52	203	83	301	504	21:45			27	94	49	134	228
10:00		76		63			22:00			36		27		
10:15		61		71			22:15			39		20		
10:30		64		64			22:30			15		25		
10:45		58	259	80	278	537	22:45			20	110	22	94	204
11:00		63		80			23:00			20		22		
11:15		83		79			23:15			19		21		
11:30		72		78			23:30			16		12		
11:45		69	287	73	310	597	23:45			7	62	17	72	134
「otal Vol.			1741		2926	4667					4298		3033	7331
							aily Totals							
					NB	SB			WB					
							Combined 60)39 5	959					
							11998							

	AM		PM		
Split %	37.3% 62.7%	38.9%	58.6%	41.4%	61.1%
Peak Hour	11:15 07:00	07:00	16:15	15:30	16:15
Volume	315 679	961	960	400	1348
P.H.F.	0.87 0.87	0.95	0.85	0.92	0.90

/olumes for: Thu	•					y: San Diego		FILE#:			
Location: HARB		CHAV		' - SAMPS	ON ST)	[2705]	50	ADT:		20	
AM Period	EB		WB			PM Period	EB		WB		
00:00	16		24			12:00	140		86		
00:15	14		12			12:15	104		82		
00:30	14	40	12	E 4	100	12:30	140	470	98 10(202	070
00:45	4	48	6	54	102	12:45	94	478	126	392	870
01:00	8		12			13:00	52		102		
01:15	8		6			13:15	56		96		
01:30	12		4			13:30	66		112		
01:45	4	32	14	36	68	13:45	56	230	128	438	668
02:00	2		8			14:00	84		82		
02:15	4		0			14:15	118		78		
02:30	6		4			14:30	140		96		
02:45	2	14	0	12	26	14:45	132	474	66	322	796
03:00	2		2			15:00	146		92		
03:15	4		6			15:15	98		74		
03:30	12		6			15:30	114		80		
03:45	16	34	14	28	62	15:45	132	490	72	318	808
		01			02			175		510	000
04:00	20		10 24			16:00	134		74 04		
04:15	18		26			16:15	144		84		
04:30	18	70	28	0.1		16:30	156	504	74	201	000
04:45	14	70	30	94	164	16:45	160	594	64	296	890
05:00	14		26			17:00	124		62		
05:15	16		26			17:15	118		58		
05:30	20		24			17:30	84		62		
05:45	30	80	44	120	200	17:45	82	408	56	238	646
06:00	36		50			18:00	86		46		
06:15	44		48			18:15	74		48		
06:30	46		80			18:30	70		26		
06:45	68	194	90	268	462	18:45	56	286	44	164	450
07:00	74		104			19:00	54		34		
07:15	76		126			19:15	64		28		
07:30	64	0/0	156	50/	004	19:30	66	0/0	36	10/	004
07:45	54	268	150	536	804	19:45	84	268	28	126	394
08:00	36		104			20:00	58		38		
08:15	56		96			20:15	56		26		
08:30	48		86			20:30	60		36		
08:45	78	218	52	338	556	20:45	36	210	30	130	340
09:00	66		60			21:00	30		24		
09:15	54		86			21:15	32		36		
09:30	56		76			21:30	22		28		
09:45	72	248	84	306	554	21:45	36	120	36	124	244
	84							,			
10:00 10:15	84 114		82 78			22:00 22:15	28 30		22 30		
			78 80								
10:30	122	120		224	740	22:30	24	104	18 24	0.4	100
10:45	118	438	84	324	762	22:45	22	104	24	94	198
11:00	86		80			23:00	20		20		
11:15	118		142			23:15	16		16		
11:30	68		82	10.1		23:30	14		12		
11:45	138	410	120	424	834	23:45	 18	68	10	58	126
Total Vol.		2054		2540	4594			3730		2700	6430
									ilv Te		2.00
								EB	ily To	tais WB	Combined
								5784		5240	11024
				١M					РM		
Split %		44.7%		55.3%	41.7%			58.0%		42.0%	58.3%
eak Hour		11:45		07:00	11:45			16:00		13:00	16:00
Volume					908			594		438	890
		522		536	908			594		438	890

Volumes for: Wedneso Location: Harbor Dr			Schler	/ St	City:	San Diego			Proj	ject #:	: 08-4	149-021	
AM Period NB	SB EB	51 & 5	WB	SI		PM Period	NB	SB	EB		WB		
00:00	23		6			12:00		00	89		55		
00:15	16		8			12:00			68		72		
00:30	11		11			12:30			72		74		
00:45	11	61	5	30	91	12:45			67	296	59	260	556
01:00	8		4			13:00			71		67		
01:15	10		3			13:15			64		53		
01:30	9		5			13:30			75		60		
01:45	5	32	4	16	48	13:45			75	285	66	246	531
02:00	5		5			14:00			100		71		
02:15	5		4			14:15			91		64		
02:30	3		3			14:30			122		68		
02:45	10	23	7	19	42	14:45			101	414	47	250	664
03:00	3		2			15:00			88		70		
03:15	5		7			15:15			89		66		
03:30	3		5			15:30			107		70		
03:45	1	12	7	21	33	15:45			122	406	69	275	681
04:00	9		9			16:00			121		53		
04:15	6		17			16:15			129		49		
04:30	10		17			16:30			165		40		
04:45	16	41	23	66	107	16:45			141	556	44	186	742
05:00	23		32			17:00			143		42		
05:15	29		48			17:15			149		43		
05:30	42		61			17:30			106		32		
05:45	47	141	60	201	342	17:45			79	477	43	160	637
06:00	34		42			18:00			63		44		
06:15	52		78			18:15			44		33		
06:30	56		87			18:30			32		36		
06:45	44	186	88	295	481	18:45			49	188	31	144	332
07:00	61		71			19:00			41		21		
07:15	61		70			19:15			39		30		
07:30	52		103			19:30			28		15		
07:45	51	225	111	355	580	19:45			33	141	29	95	236
08:00	40		73			20:00			30		21		
08:15	66		69			20:15			23		14		
08:30	52	0.05	76	0/7	170	20:30			29	4.05	15		100
08:45	47	205	49	267	472	20:45			23	105	25	75	180
09:00	52		64			21:00			24		12		
09:15	53		55			21:15			37		11		
09:30	54	047	47	010	100	21:30			95		36		005
09:45	58	217	46	212	429	21:45			48	204	22	81	285
10:00	68		45			22:00			49		23		
10:15	63		47 50			22:15			32		17		
10:30	50	220	50	220	440	22:30			61 24	144	8	57	222
10:45	58	239	88	230	469	22:45			24	166	9	57	223
11:00	77		56			23:00			19		18		
11:15	75		59			23:15			23		14		
11:30 11:45	79 70	301	47 64	226	527	23:30			19 13	74	11 11	54	128
	/0		04			23:45			13		11		
Total Vol.		1683		1938	3621					3312		1883	5195
					Da	ily Total	S						
				NB	SB		EB	WB					
					1	Combined	4995	3821					
						8816							
		AM				0010				РM			
Split %		46.5%		53.5%	41.1%		-			63.8%		36.2%	58.9%
											,		
Peak Hour		11:15		07:15	07:00					16:30		15:00	16:30
Volume P.H.F.		313 0.88		357 0.80	580 0.90					598 0.91		275 0.98	767 0.94

Volumes for: Thursday, June 12, 20				City:	San Diego		Proj	ect #:	08-4	1149-021	
ocation: Harbor Dr btwn Samps AM Period NB SB E	on St & EB	Schle WB	2		PM Period NB	SB	EB		WB		
						30					
	8	8			12:00		68 71		72 72		
	6	9			12:15				72		
	2 6 52	5	28	00	12:30		60 57	254	71 64	270	535
			28	80	12:45			256		279	535
	0	6			13:00		65		54		
	7	7			13:15		93		87		
	6	4	22	70	13:30		86	225	61	204	(00
	5 48		22	70	13:45		81	325	82	284	609
	0	4			14:00		111		60		
	6	2			14:15		105		68		
	0 7 33	3	10		14:30		112	4/2	52	245	700
			13	46	14:45		135	463	65	245	708
	6	7			15:00		125		67		
	3	6			15:15		120		71		
	3	10		10	15:30		170	507	42	0.05	010
	5 17		31	48	15:45		172	587	45	225	812
	9	9			16:00		194		60		
	0	19			16:15		157		46		
	2	18	<i>(</i> ^	110	16:30		192	700	37	4.04	001
	9 50		68	118	16:45		177	720	38	181	901
	2	21			17:00		163		38		
	4	41			17:15		175		45		
	8	67			17:30		113		41		
	2 136		204	340	17:45		96	547	34	158	705
	9	59			18:00		73		37		
	8	76			18:15		63		24		
	3	74			18:30		46		42		
06:45 5	1 191	97	306	497	18:45		51	233	22	125	358
	5	77			19:00		26		23		
	7	84			19:15		35		30		
	8	98			19:30		28		20		
07:45 5	4 214	81	340	554	19:45		33	122	21	94	216
08:00 4	8	57			20:00		34		22		
08:15 5	4	69			20:15		31		15		
08:30 5	4	58			20:30		34		27		
08:45 5	4 210) 54	238	448	20:45		33	132	24	88	220
09:00 4	7	62			21:00		27		19		
09:15 5	4	53			21:15		35		18		
09:30 5	2	52			21:30		36		21		
09:45 6	8 221	58	225	446	21:45		25	123	27	85	208
10:00 5	3	53			22:00		24		25		
	8	58			22:15		26		23		
10:30 6	2	66			22:30		58		17		
10:45 6	4 247	78	255	502	22:45		36	144	12	77	221
11:00 8	6	75			23:00		20		18		
	9	70			23:15		27		10		
11:30 6	3	66			23:30		15		18		
11:45 6	3 271	93	304	575	23:45		10	72	8	54	126
otal Vol.	169	0	2034	3724				3724		1895	5619
					aily Totals						
			NB	SB	EB	WB					
					Combined 5414 9343	3929					
	٨N	1						ΡM			
Split %	AN 45.4		54.6%	39.9%				PM 66.3%		33.7%	60.1%

Volume

P.H.F.

280

0.81

356

0.91

575

0.89

720 0.93

290

0.83

903

0.89

Volumos for Madre	day hum	<u>11_</u> 00	00			City	Son Diego		Deat	oct -#	00	1140.000	
Volumes for: Wednes Location: Harbor Di				h St		City:	San Diego		Proj	ect #:	08-2	1149-022	
AM Period NB	SB	EB	& 281	m St WB			PM Period NB	SB	EB		WB		
00:00		1		1			12:00		76		35		
00:15		3		1			12:15		89		40		
00:30		9		1			12:30		80		36		
00:45		0	13	0	3	16	12:45		41	286	51	162	448
01:00		3		4			13:00		84		55		
01:15		0		0			13:15		66		41		
01:30		6		8			13:30		78		46		
01:45		5	14	2	14	28	13:45		77	305	38	180	485
02:00		0		2			14:00		85		40		
02:15		1		1			14:15		87		47		
02:30		0		0			14:30		107		52		
02:45		9	10	8	11	21	14:45		134	413	44	183	596
03:00		2		1			15:00		162		51		
03:15		0		0			15:15		162		39		
03:30		0		0			15:30		173		78		
03:45		0	2	0	1	3	15:45		185	682	57	225	907
04:00		1		2			16:00		189		54		
04:15		2		1			16:15		224		56		
04:30		7		12			16:30		214		33		
04:45		5	15	14	29	44	16:45		252	879	36	179	1058
05:00		6		17			17:00		226		32		
05:15		8		22			17:15		269		30		
05:30		13		34			17:30		173		33		
05:45		34	61	46	119	180	17:45		131	799	30	125	924
06:00		43		50			18:00		112		20		
06:15		55		47			18:15		103		27		
06:30		68		24			18:30		78		27		
06:45		78	244	82	203	447	18:45		39	332	33	107	439
07:00		75		68			19:00		39		20		
07:15		60		105			19:15		69		18		
07:30		84		74			19:30		31		14		
07:45		73	292	78	325	617	19:45		31	170	16	68	238
08:00		61		119			20:00		33		7		
08:15		57		97			20:15		37		19		
08:30		37		63			20:30		17		14		
08:45		53	208	62	341	549	20:45		23	110	4	44	154
09:00		50		67			21:00		26		7		
09:15		45		33			21:15		20		, 13		
09:30		50		42			21:30		32		7		
09:45		51	196	43	185	381	21:45		25	107	3	30	137
10:00		47		34			22:00		36		12		
10:15		47		41			22:15		24		14		
10:30		61		40			22:30		43		18		
10:45		53	208	39	154	362	22:45		20	123	9	53	176
11:00		47		45		-	23:00		25		7		
11:15		53		59			23:15		28		4		
11:30		72		43			23:30		39		8		
11:45		61	233	47	194	427	23:45		16	108	7	26	134
Fotal Vol.			1496		1579	3075				4314		1382	5696
							aily Totals						
					NB	SB	<u></u>	WB					
							Combined 5810	2961					
							8771						

	AM		PM		
Split %	48.7% 51.3% 35	.1%	75.7%	24.3%	64.9%
Peak Hour	11:45 07:15 0	7:15	16:30	15:30	16:30
Volume P.H.F.		54 0.91	961 0.89	245 0.79	1092 0.91

Volumes for: Thursda	y, June 12, 2008				City:	San Diego			Proj	ect #:	08-4	149-022	
ocation: Harbor Dr	btwn Schley St	& 28t	h St										
M Period NB	SB EB		WB			PM Period	NB	SB	EB		WB		
00:00	10		2			12:00			82		36		
00:15	3		2			12:15			93		40		
00:30	9		2			12:30			73		35		
00:45	0	22	0	6	28	12:45			35	283	45	156	439
01:00	4		7			13:00			85		61		
01:15	1		0			13:15			67		44		
01:30	6		6			13:30			88		49		
01:45	6	17	1	14	31	13:45			67	307	40	194	501
02:00	1		3			14:00			87		38		
02:15	1		2			14:15			78		50		
02:30	2		0			14:30			123		55		
02:45	6	10	8	13	23	14:45			115	403	47	190	593
03:00	1		2			15:00			165		57		
03:15	0		1			15:15			184		42		
03:30	2		0			15:30			178		72		
03:45	0	3	1	4	7	15:45			160	687	58	229	916
04:00	1		2			16:00			180		48		
04:15	2		1			16:15			253		57		
04:30	7		14			16:30			243		37		
04:45	7	17	11	28	45	16:45			244	920	34	176	1096
05:00	5		15			17:00			231		28		
05:15	10		15			17:15			256		39		
05:30	10		34			17:30			166		30		
05:45	34	59	41	105	164	17:45			139	792	20	117	909
06:00	42		45			18:00			97		25		
06:15	56		53			18:15			116		28		
06:30	71		22			18:30			67		20		
06:45	80	249	70	190	439	18:45			35	315	36	109	424
07:00	80		67			19:00			36		23		
07:15	64		114			19:15			76		23		
07:30	77		72			19:30			33		11		
07:45	74	295	87	340	635	19:45			29	174	22	79	253
08:00	53		121			20:00			32		5		
08:15	54		99			20:15			41		15		
08:30	42		61			20:30			11		19		
08:45	58	207	66	347	554	20:45			24	108	5	44	152
09:00	56		68			21:00			34		6		
09:15	46		32			21:15			20		16		
09:30	54		37			21:30			31		5		
09:45	46	202	37	174	376	21:45			26	111	3	30	141
10:00	48		35			22:00			32		9		
10:15	48		40			22:00			32		7 12		
10:30	65		45			22:30			39		24		
10:45	61	220	43	163	383	22:45			14	116	11	56	172
11:00	48	-	46		-	23:00			26	-	7		
11:15	48 60		40 64			23:00			30		6		
11:30	72		44			23:30			38		6		
11:45	53	233	53	207	440	23:45			18	112	8	27	139
						-					-		
Fotal Vol.		1534		1591	3125	uly Totolo				4328		1407	5735
				NB	SB	aily Totals	EB	WB					
				ND		Combined 58		2998					
						8860							
		AM								РM			
Split %		49.1%		50.9%	35.3%					75.5%	>	24.5%	64.7%
Peak Hour		06:45		07:15	07:15					16:30		15:30	16:15
Malura		201		204	110								

Volume

P.H.F.

301

0.94

394

0.81

662

0.93

974

0.95

235

0.82

1127

0.91

03:15 03:30	3 5		22 31			15:15 15:30	298 302		128 107		
03:45	11	7	61 101	124	146	15:45 16:00	 295 308	1228	113 128	511	1739
04:15 04:30 04:45	20 31 40	7	122 118 167	508	622	16:15 16:30 16:45	276 315 254	1153	99 98 98	423	1576
05:00 05:15	7:		134 117			17:00 17:15	200 156		88 79		
05:30 05:45	68 79	9 288	131 165	547	835	17:30 17:45	127 104	587	86 61	314	901
06:00 06:15 06:30	89 57 72	7	197 170 215			18:00 18:15 18:30	78 78 68		51 43 37		
<u>06:45</u> 07:00	6	284	<u>177</u> 197	759	1043	18:45 19:00	62 42	286	34 41	165	451
07:15 07:30	7! 68	3	138 138			19:15 19:30	55 76		23 29		
07:45 08:00 08:15	7: 80 79)	121 125 105	594	878	19:45 20:00 20:15	46 39 50	219	22 22 27	115	334
08:30 08:45	7:	3	105 127 108	465	778	20:30 20:45	50 54 61	204	27 21 25	95	299
09:00 09:15	94 96		114 110			21:00 21:15	67 41		24 15		
09:30 09:45	92 93	3 375	107 116	447	822	21:30 21:45	 37 27	172	19 9	67	239
10:00 10:15	99 13	2	123 107			22:00 22:15	22 16		13 13		
10:30 10:45	12 12	2 475	141 115	486	961	22:30 22:45	28 21	87	17 11	54	141
11:00 11:15	11 9: 11	3	126 130			23:00 23:15	12 7		8 5		
11:30	11 90		147 153	556	974	23:30 23:45	16 7	42	10 3	26	68

			Da	aily Totals	S				
		NB	SB		EB	WB			
				Combined 8	3649	7907			
				16556					
	AM						PM		
Split %	36.8%	63.2%	43.6%	-			64.2%	35.8%	56.4%
Peak Hour	10:15	06:00	05:45				15:00	14:15	14:15
Volume	490	759	1049				1228	610	1768
P.H.F.	0.93	0.88	0.90				0.92	0.94	0.89

btwn 32nd St <u>SB</u> EB 31 23 13 7 12 3 5 4 5 5 4 4 2 3 4 9 16 17	 	WB 4 1 3 3 6 6 7 8 14 11 19	12 18 40	86	PM Period NB 12:00 12:15 12:30 12:45 13:00 13:15 13:30 13:45 14:00 14:15	SB	EB 106 95 117 139 141 127 161 146 183	457	WB 129 117 128 122 128 139 136 123	496	953
SB EB 31 23 13 7 12 3 5 4 5 5 4 2 3 4 9 16	 	WB 4 1 3 3 6 6 7 8 14 11 19	18		12:00 12:15 12:30 12:45 13:00 13:15 13:30 13:45 14:00	SB	106 95 117 139 141 127 161 146		129 117 128 122 128 139 136 123		
23 13 7 12 3 5 4 5 5 5 4 4 2 3 4 9 16	24	4 1 3 3 6 6 7 8 14 11 19	18		12:15 12:30 12:45 13:00 13:15 13:30 13:45 14:00		95 117 139 141 127 161 146		117 128 122 128 139 136 123		
13 7 12 3 5 4 5 5 4 4 2 3 4 9 16	24	1 3 3 6 6 7 8 14 11 19	18		12:30 12:45 13:00 13:15 13:30 13:45 14:00		117 139 141 127 161 146		128 122 128 139 136 123		
7 12 3 5 4 5 5 5 4 4 4 2 3 3 4 9 16	24	3 3 6 6 7 8 14 11 19	18		12:45 13:00 13:15 13:30 13:45 14:00		139 141 127 161 146		122 128 139 136 123		
12 3 5 4 5 5 4 4 4 2 3 4 9 16	24	3 3 6 7 8 14 11 19	18		13:00 13:15 13:30 13:45 14:00		141 127 161 146		128 139 136 123		
3 5 4 5 5 4 4 2 3 3 4 9 16	18	3 6 7 8 14 11 19		42	13:15 13:30 13:45 14:00		127 161 146	575	139 136 123	526	1101
5 4 5 4 4 2 3 4 9 16	18	6 6 7 8 14 11 19		42	13:30 13:45 14:00		161 146	575	136 123	526	1101
4 5 4 2 3 4 9 16	18	6 7 8 14 11 19		42	13:45 14:00		146	575	123	526	1101
5 5 4 2 3 4 9 16	18	7 8 14 11 19		42	14:00			575		526	1101
5 4 2 3 4 9 16		8 14 <u>11</u> 19	40				183				
4 2 3 4 9 16		14 11 19	40		14:15				135		
4 2 3 4 9 16		11 19	40				223		143		
2 3 4 9 16		19	40	= 0	14:30		256		143		
3 4 9 16				58	14:45		248	910	152	573	1483
4 9 16					15:00		270		159		
9 16		25			15:15		343		127		
16	18	40 60	144	162	15:30		326 245	1184	105 106	497	1681
	10		144	102	15:45			1104		497	1001
		100			16:00		314 277		97 04		
		115 144			16:15 16:30				94 01		
	110		496	606				1162		399	1561
				000						0,,,	
94	348		529	877	17:45		69	500	60	291	791
55					18:00		51		51		
55		176			18:15		55		40		
62		192			18:30		54		38		
77	249	198	753	1002	18:45		69	229	35	164	393
71		175			19:00		53		38		
71		111			19:15		64		34		
65		114			19:30		67		30		
95	302	103	503	805	19:45		44	228	34	136	364
70		112			20:00		47		31		
					20:15		40		20		
	304		381	685				155		100	255
			120	907				101		02	203
	370		427	807				121		02	203
			479	942				85		64	149
				. 12						<u>.</u> .	
		133	495	972	23:45		14	76	10	29	105
	2/65		4279		oily Totale			2082		JJJ/	9039
			NID								
	55 55 62 77 71 71 65 95 70 72 82 80 95 77 102 104 94 125 129 115 138 114 118	48 110 69 83 102 94 94 348 55 55 62 77 71 249 71 65 95 302 70 72 82 80 80 304 95 102 102 104 95 104 104 378 94 125 129 115 463 138 114 118	48 110 137 69 128 83 132 102 132 94 348 137 55 187 55 176 62 192 77 249 198 71 249 198 71 249 198 71 249 191 65 114 95 95 112 112 72 91 82 94 304 84 95 105 174 95 105 174 94 378 115 95 105 174 95 105 174 94 378 120 125 124 129 126 124 129 127 463 114 128 131 14 129 115 463 114 129 118 102 129	481101374966912813283132132102132132943481375295518755551766219273772491987537117571711116511495302103503701127272918280304843819510510410210542910437811542994120125124125124129115463114479138131129118102103107477133495	48 110 137 496 606 69 128 33 132 102 132 102 132 94 348 137 529 877 55 187 529 877 55 176 529 877 55 176 529 877 55 176 529 877 62 192 70 102 77 249 198 753 1002 71 175 1002 103 805 71 111 65 114 95 95 302 103 503 805 70 112 112 113 14 95 302 103 503 805 95 105 104 378 15 429 807 94 120 125 124 129 131 114 129 125 124 125 124 129 138 131 114 12	48 110 137 496 606 16:45 69 128 17:00 83 132 17:15 102 132 17:30 94 348 137 529 877 17:45 55 187 18:00 18:15 162 192 18:30 62 192 18:30 1002 18:45 19:00 71 175 19:00 111 19:15 165 114 19:30 95 302 103 503 805 19:45 100 111 19:15 15 12 20:00 125 94 20:30 20:15 24 20:30 24 20:30 24 20:30 24 21:10 100 11 102 104 21:15 102 104 21:15 102 12 22:00 125 124 22:10 124 22:15 124 22:15 124 22:15 124 22:15 124 22:15 124 22:15 124 22:15 124 12:15	48 110 137 496 606 16:45 69 128 17:00 83 132 17:15 102 132 17:30 94 348 137 529 877 55 187 18:00 55 187 18:00 55 176 18:15 62 192 18:30 77 249 198 753 1002 71 175 19:00 71 111 19:15 65 114 19:30 95 302 103 503 80 304 84 381 685 70 112 20:00 72 91 20:15 82 94 20:30 80 304 84 381 95 105 21:00 77 104 22:00 125 124 22:00 125 124 22:00 125 124 22:00 </td <td>48 110 137 496 606 16:45 280 69 128 17:00 194 83 132 17:15 133 102 132 17:30 104 94 348 137 529 877 17:45 69 55 187 18:00 51 55 51 55 51 55 62 192 18:30 54 55 62 192 18:30 54 77 249 198 753 1002 18:45 69 69 71 171 175 19:00 53 53 61 64 65 114 19:30 67 64 65 67 67 95 032 103 503 805 19:45 440 64 64 381 685 20:45 33 33 35 37 102 112 20:00 47 37 37 37 37 37 32 37 37</td> <td>48 110 137 496 606 16:45 280 1162 69 128 17:00 194 133 133 133 102 132 17:30 104 133 133 102 132 17:30 104 133 102 132 529 877 17:45 69 500 55 187 18:00 51 55 55 51 55 62 192 18:15 55 54 229 18:30 54 77 249 198 753 1002 18:45 69 229 71 175 19:00 53 53 53 53 54 23 70 112 20:00 47 249 28 44 28 70 112 20:00 35 33 155 80 304 84 381 685 20:45 33 155 95 105 21:00 35 24 121 21:00<!--</td--><td>48 110 137 496 606 16:45 280 1162 117 69 128 17:00 194 93 83 132 17:15 133 90 102 132 17:30 104 48 94 348 137 529 877 17:45 69 500 60 55 187 18:00 51</td><td>4811013749660616:4528011621173996912817:00194931739910213217:151339010213217:301044891489111621171179034831352987717:30104489111621171179134434552987717:456050602915517618:1555405155164386219218:305438511643877249198753100218:4569229351646511419:3067303038165164347011220:00473111101101101729420:3035303030303030803048438168520:45331551910210210521:0035363611112210437811542980721:452412114829412022:0019221211148210210521:003536111111121482114<!--</td--></td></td>	48 110 137 496 606 16:45 280 69 128 17:00 194 83 132 17:15 133 102 132 17:30 104 94 348 137 529 877 17:45 69 55 187 18:00 51 55 51 55 51 55 62 192 18:30 54 55 62 192 18:30 54 77 249 198 753 1002 18:45 69 69 71 171 175 19:00 53 53 61 64 65 114 19:30 67 64 65 67 67 95 032 103 503 805 19:45 440 64 64 381 685 20:45 33 33 35 37 102 112 20:00 47 37 37 37 37 37 32 37 37	48 110 137 496 606 16:45 280 1162 69 128 17:00 194 133 133 133 102 132 17:30 104 133 133 102 132 17:30 104 133 102 132 529 877 17:45 69 500 55 187 18:00 51 55 55 51 55 62 192 18:15 55 54 229 18:30 54 77 249 198 753 1002 18:45 69 229 71 175 19:00 53 53 53 53 54 23 70 112 20:00 47 249 28 44 28 70 112 20:00 35 33 155 80 304 84 381 685 20:45 33 155 95 105 21:00 35 24 121 21:00 </td <td>48 110 137 496 606 16:45 280 1162 117 69 128 17:00 194 93 83 132 17:15 133 90 102 132 17:30 104 48 94 348 137 529 877 17:45 69 500 60 55 187 18:00 51</td> <td>4811013749660616:4528011621173996912817:00194931739910213217:151339010213217:301044891489111621171179034831352987717:30104489111621171179134434552987717:456050602915517618:1555405155164386219218:305438511643877249198753100218:4569229351646511419:3067303038165164347011220:00473111101101101729420:3035303030303030803048438168520:45331551910210210521:0035363611112210437811542980721:452412114829412022:0019221211148210210521:003536111111121482114<!--</td--></td>	48 110 137 496 606 16:45 280 1162 117 69 128 17:00 194 93 83 132 17:15 133 90 102 132 17:30 104 48 94 348 137 529 877 17:45 69 500 60 55 187 18:00 51	4811013749660616:4528011621173996912817:00194931739910213217:151339010213217:301044891489111621171179034831352987717:30104489111621171179134434552987717:456050602915517618:1555405155164386219218:305438511643877249198753100218:4569229351646511419:3067303038165164347011220:00473111101101101729420:3035303030303030803048438168520:45331551910210210521:0035363611112210437811542980721:452412114829412022:0019221211148210210521:003536111111121482114 </td

16083

	AM	PM		
Split %	39.3% 60.7% 43.8%	62.9%	37.1%	56.2%
Peak Hour	10:15 06:00 06:15	15:15	14:15	14:45
Volume P.H.F.	50775310060.920.950.91	1228 0.90	597 0.94	1730 0.92

Traffic Data Service Southwest Vehicle Counts

VehicleCount-1214

DATASETS:

[28001E] Harbor Dr E/o 32nd St
8 - East bound A>B, West bound B>A., Lane: 0
08:06 Mon 13 Oct 2003 to 08:30 Fri 17 Oct 2003
Z:\mcdata\San Diego\2003\280\28001E17OCT2003.EC0 (Plus)
A027V8X1 MC56-1 [MC55] (c)Microcom 07/06/99
Factory default

PROFILE:

Filter time:	00:00 Tue 14 Oct 2003 to 00:00 Fri 17 Oct 2003
Included classes	s: 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range:	0 - 100 mph.
Direction:	East (bound)
Headway:	All
Scheme:	Scheme F99
Name:	Factory default profile
Method:	Vehicle classification
Units:	Non-Metric (ft, mi, f/s, mph, lb, ton)
In profile:	1943 Vehicles

* Tue 14 Oct 2003 - Total=603, 15 minute drops,

	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	5	3	5	10	8	23	21	34	44	46	46	22	41	55	59	37	44	33	21	13	8	8	11	6	
	1	0	2	1	3	4	8	7	13	10	13	5	5	16	15	11	19	11	12	2	0	1	3	1	3
	3	0	1	3	0	2	4	3	8	12	12	1	18	14	18	5	9	6	5	4	4	0	4	1	0
	1	0	1	2	4	3	5	11	14	8	8	4	10	12	16	11	10	9	2	3	1	3	2	3	0
	0	3	1	4	1	14	4	13	9	16	13	12	8	13	10	10	6	7	2	4	3	4	2	1	0
4	AM Pkł	Hr 09:1	15 to 1	0:15 (n	=49), A	AM PH	F=0.77	PM P	(Hr 13:	45 to 1	14:45 (n=62),	PM PH	IF=0.86	5										

* Wed 15 Oct 2003 - Total=643, 15 minute drops,

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
3	6	3	3	6	24	22	28	44	54	43	48	33	51	58	60	50	42	13	14	14	9	11	4	
3	1	0	1	1	3	7	2	13	19	10	14	10	11	10	11	13	11	3	3	2	0	3	1	2
0	2	1	1	1	1	5	9	9	11	8	7	6	12	19	14	7	10	4	4	6	1	3	1	4
0	2	1	1	0	4	7	7	9	16	11	19	7	8	10	15	17	8	3	2	4	4	4	0	2
0	1	1	0	4	16	3	10	13	8	14	8	10	20	19	20	13	13	3	5	2	4	1	2	2

AM PkHr 08:45 to 09:45 (n=59), AM PHF=0.78 PM PkHr 15:15 to 16:15 (n=62), PM PHF=0.78

* Thu 16 Oct 2003 - Total=697, 15 minute drops.

						,			· · · ·															
0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
10	4	3	2	7	26	24	35	36	58	36	44	46	45	57	66	56	55	33	23	8	10	6	7	
2	2	3	0	1	3	10	б	7	12	14	15	11	7	14	17	11	13	9	4	3	2	1	2	-
4	0	0	1	0	2	3	б	11	11	10	11	12	8	14	9	17	20	11	11	0	2	2	1	-
2	0	0	0	0	8	7	11	11	16	8	б	11	13	15	22	10	7	5	6	4	2	1	3	-
2	2	0	1	6	13	4	12	7	19	4	12	12	17	14	18	18	15	8	2	1	4	2	1	-
	L= 00.4	E 40 1	0.45 /m	-60)		E_0 70																		

AM PkHr 09:15 to 10:15 (n=60), AM PHF=0.79

Eastbound

Traffic Data Service Southwest Vehicle Counts

VehicleCount-1214

DATASETS:

Site:	[28001W] Harbor Dr E/o 32nd St
Direction:	6 - West bound A>B, East bound B>A., Lane: 0
Survey Duration:	08:06 Mon 13 Oct 2003 to 08:25 Fri 17 Oct 2003
File:	Z:\mcdata\San Diego\2003\280\28001W17OCT2003.EC0 (Plus)
Identifier:	B102GC7E MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Factory default

PROFILE:

FROFILL.	
Filter time:	00:00 Tue 14 Oct 2003 to 00:00 Fri 17 Oct 2003
Included classe	s: 1, 2, 3, 4
Speed range:	0 - 100 mph.
Direction:	West (bound)
Headway:	All
Scheme:	Scheme F99
Name:	Factory default profile
Method:	Vehicle classification
Units:	Non-Metric (ft, mi, f/s, mph, lb, ton)
In profile:	29538 Vehicles

* Tue 14 Oct 2003 - Total=9980, 15 minute drops,

									• •															
0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
50	32	34	110	445	577	938	1040	769	440	440	519	596	654	627	676	648	451	315	212	136	109	98	64	
14	б	7	10	73	101	192	240	217	111	121	115	143	161	150	158	149	120	80	58	42	21	29	22	12
14	б	8	26	121	136	208	292	220	105	93	123	136	156	139	170	171	135	87	58	33	27	32	13	17
7	9	11	30	140	161	266	251	174	103	111	136	162	178	187	175	177	102	83	57	35	28	16	13	9
15	11	8	44	111	179	272	257	158	121	115	145	155	159	151	173	151	94	65	39	26	33	21	16	16
AM Pk	Hr 06:3	30 to 0	7:30 (n	=1070), AM F	PHF=0.	92 PM	PkHr 1	15:00 t	o 16:00) (n=67	76), PN	I PHF=	0.97										

* Wed 15 Oct 2003 - Total=9750, 15 minute drops,

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
54	29	24	33	232	563	991	968	525	434	506	584	612	659	642	663	603	525	357	235	180	138	120	73	
12	8	6	4	32	92	221	232	195	109	132	125	139	150	159	187	150	126	102	68	39	45	26	26	17
17	10	5	7	55	145	228	252	121	117	118	157	166	178	155	185	166	158	88	58	47	33	38	9	7
9	3	4	9	74	146	268	277	99	107	122	159	151	179	169	158	156	118	87	44	53	29	29	25	17
16	8	9	13	71	180	274	207	110	101	134	143	156	152	159	133	131	123	80	65	41	31	27	13	12
AM Pk	Hr 06:4	15 to 0	7:45 (n	1=1035), AM F	PHF=0.	93 PM	PkHr '	14:30 t	o 15:30	D (n=70	00), PN	I PHF=	0.94										

* Thu 16 Oct 2003 - Total=9808, 15 minute drops,

						-,																		
0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
53	47	33	41	227	605	983	1001	614	395	422	549	578	700	617	682	641	470	377	244	196	133	127	73	
17	12	14	7	37	80	197	288	191	107	97	125	123	174	155	179	161	148	111	55	55	47	29	15	-
7	17 12 14 7 37 80 197 288 191 107 97 125 123 174 155 179 161 148 111 55 55 47 29 15 - 7 5 8 9 53 156 237 221 180 103 103 152 147 154 146 174 174 128 97 58 52 33 34 18 -																							
17	14	6	11	64	170	295	280	134	92	113	148	163	201	177	174	159	89	91	63	43	24	33	20	-
12	16	5	14	73	199	254	212	109	93	109	124	145	171	139	155	147	105	78	68	46	29	31	20	-
AM Pk	Hr 06:1	5 to 0	7:15 (n	=1074)), AM F	PHF=0.	.91																	

Westbound

08-4148-001		
16th St & Commercial St		
6/3/08	DAY:	Tuesday
Barrio Logan		
	16th St & Commercial St 6/3/08	16th St & Commercial St6/3/08DAY:

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	5	1	3	3
7:15 AM	9	1	6	10
7:30 AM	9	0	0	4
7:45 AM	4	3	3	7
8:00 AM	1	1	4	10
8:15 AM	2	4	3	4
8:30 AM	9	7	2	15
8:45 AM	2	2	1	4
TOTALS	41	19	22	57

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	3	2	0	8
4:15 PM	2	2	1	8
4:30 PM	1	3	4	5
4:45 PM	5	2	2	7
5:00 PM	12	5	3	8
5:15 PM	2	3	8	8
5:30 PM	4	2	1	16
5:45 PM	3	2	2	1
TOTALS	32	21	21	61

BIKES

2// (20				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	0	0	1	0
4:30 PM	1	1	1	0
4:45 PM	1	0	1	0
5:00 PM	3	1	1	1
5:15 PM	2	1	0	1
5:30 PM	2	1	2	0
5:45 PM	0	0	3	0
TOTALS	9	4	9	2

08-4148-002		
16th St & National Ave		
6/3/08	DAY:	Tuesday
Barrio Logan		
	16th St & National Ave 6/3/08	16th St & National Ave6/3/08DAY:

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	2	5	2	0
7:15 AM	3	8	5	2
7:30 AM	4	4	3	0
7:45 AM	8	5	1	2
8:00 AM	7	4	7	5
8:15 AM	0	3	3	0
8:30 AM	0	4	2	0
8:45 AM	1	1	2	0
TOTALS	25	34	25	9

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

	TIME	NORTH	SOUTH	EAST	WEST
ſ	4:00 PM	6	8	6	4
Ī	4:15 PM	12	15	2	8
Ī	4:30 PM	5	6	1	0
	4:45 PM	4	8	1	2
	5:00 PM	3	8	5	2
	5:15 PM	2	11	2	2
	5:30 PM	5	4	2	2
	5:45 PM	3	7	4	4
	TOTALS	40	67	23	24

BIKES

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	2	1	0	1
4:15 PM	0	0	0	0
4:30 PM	0	0	2	0
4:45 PM	1	0	1	0
5:00 PM	1	0	0	2
5:15 PM	1	0	0	0
5:30 PM	0	1	1	2
5:45 PM	0	1	1	0
TOTALS	5	3	5	5

PROJECT #:	08-4148-003		
LOCATION:	Sigsbee St & National Ave		
DATE:	6/5/08	DAY:	Thursday
CITY:	Barrio Logan		
DATE:	6/5/08	DAY:	Thursday

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	13	5	4	14
7:15 AM	6	5	5	5
7:30 AM	9	7	10	6
7:45 AM	11	10	9	10
8:00 AM	4	7	3	6
8:15 AM	1	2	0	4
8:30 AM	5	6	2	17
8:45 AM	9	5	2	9
TOTALS	58	47	35	71

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	7	3	1	5
4:15 PM	9	6	3	11
4:30 PM	3	2	0	0
4:45 PM	3	3	0	8
5:00 PM	6	5	6	9
5:15 PM	2	2	0	7
5:30 PM	7	2	0	3
5:45 PM	9	8	1	1
TOTALS	46	31	11	44

BIKES

BIREO				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	2
4:15 PM	0	1	1	3
4:30 PM	0	1	0	0
4:45 PM	0	2	2	1
5:00 PM	0	0	0	2
5:15 PM	0	1	1	0
5:30 PM	0	0	1	0
5:45 PM	0	0	0	1
TOTALS	0	5	5	9

PROJECT #:	08-4148-004		
LOCATION:	Sigsbee St & Newton Ave		
DATE:	6/4/08	DAY:	Wednesday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	0	0
7:15 AM	0	0	0	1
7:30 AM	2	1	1	0
7:45 AM	0	0	2	0
8:00 AM	3	5	4	0
8:15 AM	2	2	2	2
8:30 AM	11	0	20	0
8:45 AM	2	1	2	2
TOTALS	20	9	31	5

BIKES

211.20				
TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	1	0	0	0
7:45 AM	0	0	1	0
8:00 AM	0	0	0	0
8:15 AM	1	0	0	0
8:30 AM	0	0	0	0
8:45 AM	1	0	0	0
TOTALS	3	0	1	0

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	4	2	1	1
4:15 PM	1	2	0	0
4:30 PM	0	1	3	2
4:45 PM	2	0	2	0
5:00 PM	6	1	1	0
5:15 PM	2	3	1	0
5:30 PM	1	0	0	0
5:45 PM	2	2	0	0
TOTALS	18	11	8	3

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	1	2	0
4:15 PM	0	1	0	1
4:30 PM	0	0	0	1
4:45 PM	0	0	0	3
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTALS	0	2	2	5

PROJECT #:	08-4148-005		
LOCATION:	Sigsbee St & Main St		
DATE:	6/4/08	DAY:	Wednesday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	1	0	1	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTALS	1	0	1	0

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

-				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	2	0	0
4:15 PM	2	2	0	0
4:30 PM	4	1	0	0
4:45 PM	0	0	0	0
5:00 PM	0	1	0	0
5:15 PM	0	1	0	2
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTALS	6	7	0	2

BIKES

BIREO				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	1	0	0
4:15 PM	0	0	0	0
4:30 PM	1	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	1	0
5:45 PM	0	0	0	0
TOTALS	1	1	1	0

PROJECT #:	08-4148-008		
LOCATION:	Beardsley St & National Ave		
DATE:	6/5/08	DAY:	Thursday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	8	6	2	7
7:15 AM	7	5	2	8
7:30 AM	2	9	0	5
7:45 AM	6	1	4	6
8:00 AM	12	2	5	10
8:15 AM	8	32	34	27
8:30 AM	4	11	3	5
8:45 AM	19	21	4	9
TOTALS	66	87	54	77

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

-				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	9	2	3	13
4:15 PM	6	6	0	11
4:30 PM	3	7	7	9
4:45 PM	1	1	2	4
5:00 PM	5	2	2	14
5:15 PM	1	0	2	6
5:30 PM	4	1	3	14
5:45 PM	2	3	4	9
TOTALS	31	22	23	80

BIKES

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTALS	0	0	0	0

PROJECT #:	08-4148-009		
LOCATION:	Beardsley St & Newton Ave		
DATE:	6/5/08	DAY:	Thursday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	10	2	3	1
7:15 AM	3	1	2	3
7:30 AM	6	5	3	5
7:45 AM	5	10	6	4
8:00 AM	5	5	2	3
8:15 AM	5	20	5	45
8:30 AM	6	20	5	45
8:45 AM	45	5	46	5
TOTALS	85	68	72	111

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

-				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	1	7	3	3
4:15 PM	5	2	3	7
4:30 PM	5	3	4	5
4:45 PM	1	2	3	5
5:00 PM	3	4	8	2
5:15 PM	2	2	3	3
5:30 PM	2	1	3	3
5:45 PM	3	2	2	7
TOTALS	22	23	29	35

BIKES

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	1	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTALS	0	0	1	0
PROJECT #:	08-4148-010			
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LOCATION:	Beardsley St & Main St			
DATE:	6/5/08	DAY:	Thursday	
CITY:	Barrio Logan			

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	7	2	6	2
7:15 AM	8	1	11	4
7:30 AM	1	5	9	3
7:45 AM	4	10	7	8
8:00 AM	2	8	6	2
8:15 AM	7	7	4	8
8:30 AM	3	6	3	5
8:45 AM	1	2	2	4
TOTALS	33	41	48	36

BIKES

Birteo				
TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	1	0	0	0
7:15 AM	0	0	1	0
7:30 AM	0	0	0	0
7:45 AM	0	1	0	0
8:00 AM	0	0	0	0
8:15 AM	1	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	1	0	0
TOTALS	2	2	1	0

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	0	3	2	1
4:30 PM	0	0	0	0
4:45 PM	3	0	0	0
5:00 PM	0	0	0	1
5:15 PM	1	11	0	0
5:30 PM	0	0	1	0
5:45 PM	0	0	2	4
TOTALS	4	14	5	6

2				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	1	0	0
4:15 PM	1	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTALS	1	1	0	0

: Thursday

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	1	6	3	7
7:15 AM	0	4	4	9
7:30 AM	1	3	6	5
7:45 AM	4	3	5	3
8:00 AM	1	4	4	16
8:15 AM	9	3	2	15
8:30 AM	4	4	4	10
8:45 AM	7	8	3	13
TOTALS	27	35	31	78

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

-				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	3	2	8	5
4:15 PM	5	3	11	9
4:30 PM	0	3	8	7
4:45 PM	2	5	0	6
5:00 PM	3	2	14	7
5:15 PM	6	1	4	10
5:30 PM	2	2	4	7
5:45 PM	5	1	6	11
TOTALS	26	19	55	62

BIKES

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	2	2	0
4:15 PM	2	0	0	1
4:30 PM	0	2	1	1
4:45 PM	0	0	0	0
5:00 PM	0	0	0	1
5:15 PM	0	0	0	0
5:30 PM	0	0	0	3
5:45 PM	0	0	2	0
TOTALS	2	4	5	6

PROJECT #:	08-4148-016		
LOCATION:	Cesar Chavez Pkwy & Main St		
DATE:	6/5/08	DAY:	Thursday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	0	2
7:15 AM	8	5	5	2
7:30 AM	9	2	1	4
7:45 AM	10	8	0	5
8:00 AM	10	4	4	7
8:15 AM	9	4	0	10
8:30 AM	4	1	1	9
8:45 AM	4	1	0	11
TOTALS	54	25	11	50

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

-				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	1	3	2	2
4:15 PM	3	6	8	4
4:30 PM	10	6	7	7
4:45 PM	5	9	3	3
5:00 PM	7	9	3	0
5:15 PM	2	3	1	0
5:30 PM	4	4	3	4
5:45 PM	3	4	8	2
TOTALS	35	44	35	22

BIKES

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	1	0	0	0
4:30 PM	0	1	0	0
4:45 PM	1	0	0	0
5:00 PM	1	0	1	1
5:15 PM	0	0	0	0
5:30 PM	0	0	0	2
5:45 PM	0	0	0	0
TOTALS	3	1	1	3

PROJECT #:	08-4148-017		
LOCATION:	Cesar Chavez Pkwy & Harbor I	Dr	
DATE:	6/4/08	DAY:	Wednesday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
6:00 AM	0	0	0	0
6:15 AM	1	0	7	1
6:30 AM	2	0	7	1
6:45 AM	2	0	0	1
7:00 AM	5	7	0	1
7:15 AM	0	2	0	1
7:30 AM	2	3	1	1
7:45 AM	2	1	0	0
8:00 AM	2	5	0	2
8:15 AM	0	2	0	0
8:30 AM	0	1	2	0
8:45 AM	3	1	0	0
TOTALS	19	22	17	8

TIME	NORTH	SOUTH	EAST	WEST
6:00 AM	0	1	0	0
6:15 AM	6	1	1	0
6:30 AM	7	2	1	0
6:45 AM	1	4	0	0
7:00 AM	1	2	2	0
7:15 AM	6	1	1	0
7:30 AM	2	2	1	0
7:45 AM	3	2	0	0
8:00 AM	0	0	0	0
8:15 AM	1	0	0	0
8:30 AM	0	0	0	0
8:45 AM	2	2	0	0
TOTALS	29	17	6	0

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
3:00 PM	0	3	0	0
3:15 PM	2	0	2	1
3:30 PM	1	3	3	0
3:45 PM	0	3	1	0
4:00 PM	3	6	5	0
4:15 PM	4	4	2	1
4:30 PM	0	0	2	0
4:45 PM	0	7	0	1
5:00 PM	1	2	1	2
5:15 PM	0	4	0	1
5:30 PM	0	3	3	2
5:45 PM	1	1	3	0
TOTALS	12	36	22	8

BIKES

TIME	NORTH	SOUTH	EAST	WEST
3:00 PM	0	4	0	0
3:15 PM	1	1	0	1
3:30 PM	2	3	0	0
3:45 PM	3	2	2	1
4:00 PM	2	4	0	0
4:15 PM	0	1	1	1
4:30 PM	4	2	0	0
4:45 PM	3	6	3	0
5:00 PM	2	0	0	0
5:15 PM	5	1	0	0
5:30 PM	3	0	0	3
5:45 PM	3	1	0	0
TOTALS	28	25	6	6

PROJECT #:	08-4148-024		
LOCATION:	Sampson St & National Ave		
DATE:	6/5/08	DAY:	Thursday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	1	2
7:15 AM	1	1	0	3
7:30 AM	6	0	5	1
7:45 AM	2	0	5	3
8:00 AM	4	2	5	6
8:15 AM	3	0	1	3
8:30 AM	5	0	5	0
8:45 AM	5	1	3	4
TOTALS	26	4	25	22

BIKES

BIREO				
TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	1	0	1
7:15 AM	0	0	1	0
7:30 AM	0	0	1	1
7:45 AM	0	0	1	0
8:00 AM	0	0	0	0
8:15 AM	1	0	1	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTALS	1	1	4	2

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	1	0
4:15 PM	2	4	5	7
4:30 PM	3	3	9	14
4:45 PM	2	4	6	4
5:00 PM	5	3	5	10
5:15 PM	6	8	15	14
5:30 PM	1	0	11	2
5:45 PM	0	2	7	12
TOTALS	19	24	59	63

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	2	0	1	0
4:15 PM	1	0	1	0
4:30 PM	0	2	0	1
4:45 PM	0	1	4	1
5:00 PM	0	0	0	0
5:15 PM	1	0	0	0
5:30 PM	1	1	0	0
5:45 PM	0	0	2	0
TOTALS	5	4	8	2

PROJECT #:	08-4148-025		
LOCATION:	Sampson St & Newton Ave		
DATE:	6/5/08	DAY:	Thursday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	1	1	0
7:15 AM	2	0	0	0
7:30 AM	4	1	0	1
7:45 AM	2	4	1	2
8:00 AM	3	6	2	1
8:15 AM	2	1	2	1
8:30 AM	0	2	1	1
8:45 AM	3	0	2	0
TOTALS	16	15	9	6

BIKES

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	0	0
7:15 AM	0	0	1	0
7:30 AM	1	0	0	0
7:45 AM	0	0	0	0
8:00 AM	1	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTALS	2	0	1	0

PEDESTRIANS

NORTH	SOUTH	EAST	WEST
2	0	1	1
1	1	1	1
2	2	4	0
0	1	0	0
2	6	0	3
1	10	0	8
4	4	0	2
8	4	0	8
20	28	6	23
	2 1 2 0 2 1 4 8	2 0 1 1 2 2 0 1 2 6 1 10 4 4 8 4	2 0 1 1 1 1 2 2 4 0 1 0 2 6 0 1 10 0 4 4 0 8 4 0

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	1	0
4:15 PM	0	0	0	0
4:30 PM	0	1	1	1
4:45 PM	0	0	0	1
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	1	0	0
TOTALS	0	2	2	2

08-4148-026		
Sampson St & Main St		
6/10/08	DAY:	Tuesday
Barrio Logan		
	Sampson St & Main St 6/10/08	Sampson St & Main St 6/10/08 DAY:

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	7	1	1	0
7:15 AM	3	2	5	0
7:30 AM	8	1	5	0
7:45 AM	6	1	6	2
8:00 AM	3	1	3	0
8:15 AM	10	0	2	3
8:30 AM	1	1	2	2
8:45 AM	7	0	4	2
TOTALS	45	7	28	9

BIKES

_				
TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	0	0
7:15 AM	3	1	3	0
7:30 AM	1	0	2	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	1	0
8:30 AM	0	0	1	0
8:45 AM	0	0	0	0
TOTALS	4	1	7	0

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	3	3	4	0
4:15 PM	1	7	10	3
4:30 PM	2	6	7	1
4:45 PM	6	1	4	6
5:00 PM	4	1	5	2
5:15 PM	0	0	0	0
5:30 PM	0	4	0	0
5:45 PM	0	0	1	0
TOTALS	16	22	31	12

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	1
5:15 PM	0	0	1	1
5:30 PM	0	0	1	1
5:45 PM	0	0	1	0
TOTALS	0	0	3	3

PROJECT #:	08-4148-027		
LOCATION:	Sampson St & Harbor Dr		
DATE:	6/11/08	DAY:	Wednesday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	8	4	1	2
7:15 AM	6	5	1	2
7:30 AM	7	3	1	3
7:45 AM	8	3	1	0
8:00 AM	9	4	1	0
8:15 AM	10	10	2	1
8:30 AM	3	8	2	1
8:45 AM	6	6	0	2
TOTALS	57	43	9	11

BIKES

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	1	0	1	2
7:15 AM	2	1	2	6
7:30 AM	2	1	1	2
7:45 AM	0	0	2	4
8:00 AM	0	1	0	0
8:15 AM	0	1	1	1
8:30 AM	1	0	0	0
8:45 AM	0	0	1	1
TOTALS	6	4	8	16

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	3	8	0	1
4:15 PM	1	14	2	1
4:30 PM	3	10	2	1
4:45 PM	1	10	4	2
5:00 PM	3	8	2	1
5:15 PM	0	7	1	3
5:30 PM	0	7	2	1
5:45 PM	1	1	1	0
TOTALS	12	65	14	10

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	1	2
4:15 PM	0	0	0	0
4:30 PM	0	1	3	3
4:45 PM	0	0	3	2
5:00 PM	0	1	0	2
5:15 PM	0	1	0	5
5:30 PM	0	0	0	1
5:45 PM	0	1	1	1
TOTALS	0	4	8	16

08-4148-028		
Sicard St & National Ave		
6/10/08	DAY:	Tuesday
Barrio Logan		
	Sicard St & National Ave 5/10/08	Sicard St & National Ave S/10/08 DAY:

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	1	0	6	1
7:15 AM	0	2	2	3
7:30 AM	0	0	6	2
7:45 AM	0	1	3	5
8:00 AM	0	0	2	3
8:15 AM	0	1	1	2
8:30 AM	0	2	2	2
8:45 AM	1	0	6	0
TOTALS	2	6	28	18

BIKES

_				
TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	1	1	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	2	2
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	1	0
TOTALS	1	1	3	2

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTALS	0	0	0	0

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTALS	0	0	0	0

PROJECT #:	08-4148-029		
LOCATION:	26th St & National Ave		
DATE:	6/10/08	DAY:	Tuesday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	1	2	2	7
7:15 AM	1	1	1	2
7:30 AM	0	7	1	5
7:45 AM	0	1	1	5
8:00 AM	2	3	3	0
8:15 AM	3	0	0	1
8:30 AM	1	0	0	1
8:45 AM	2	0	1	0
TOTALS	10	14	9	21

BIKES

Billeo				
TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	0	1
7:15 AM	1	0	0	0
7:30 AM	0	0	0	0
7:45 AM	1	2	1	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	1	0	0	0
TOTALS	3	2	1	1

PEDESTRIANS

	TIME	NORTH	SOUTH	EAST	WEST
ſ	4:00 PM	0	2	1	5
Ī	4:15 PM	7	0	6	5
Ī	4:30 PM	1	3	10	4
Ī	4:45 PM	2	2	1	2
Ī	5:00 PM	3	3	3	9
Ī	5:15 PM	0	3	3	0
Ī	5:30 PM	1	3	4	3
	5:45 PM	2	1	2	3
	TOTALS	16	17	30	31

TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	1	0	1	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	1	1	0	0
5:15 PM	1	2	1	0
5:30 PM	0	0	1	2
5:45 PM	1	1	0	0
TOTALS	4	4	3	2

PROJECT #:	08-4148-030		
LOCATION:	I-5 SB Off-Ramp & National Av	'e	
DATE:	6/11/08	DAY:	Wednesday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	7	0	0
7:15 AM	3	11	0	4
7:30 AM	0	10	0	0
7:45 AM	0	3	0	1
8:00 AM	0	5	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	1
TOTALS	3	36	0	6

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

-				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	9	0	0
4:15 PM	0	9	0	0
4:30 PM	0	11	0	0
4:45 PM	0	7	0	0
5:00 PM	0	12	1	4
5:15 PM	0	6	0	1
5:30 PM	0	12	0	0
5:45 PM	0	4	0	0
TOTALS	0	70	1	5

BIKES

DIREO				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	3
4:15 PM	0	2	1	2
4:30 PM	0	0	0	0
4:45 PM	0	1	1	3
5:00 PM	0	0	0	0
5:15 PM	0	0	1	0
5:30 PM	0	0	0	1
5:45 PM	0	0	0	1
TOTALS	0	3	3	10

PROJECT #:	08-4148-031		
LOCATION:	26th St & Main St		
DATE:	6/10/08	DAY:	Tuesday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	1	0	2
7:45 AM	0	2	0	3
8:00 AM	0	0	1	0
8:15 AM	0	0	0	0
8:30 AM	1	0	0	1
8:45 AM	2	1	1	0
TOTALS	3	4	2	6

BIKES

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	1	0	0
7:15 AM	0	4	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	2	1	0	0
8:30 AM	0	0	1	0
8:45 AM	0	0	0	0
TOTALS	2	6	1	0

PEDESTRIANS

-				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	2
4:15 PM	0	2	0	1
4:30 PM	4	1	0	1
4:45 PM	0	1	0	0
5:00 PM	0	0	0	2
5:15 PM	0	4	0	0
5:30 PM	0	1	0	0
5:45 PM	0	1	0	0
TOTALS	4	10	0	6

2/1 (20				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	1	1	0
4:45 PM	0	0	0	0
5:00 PM	1	1	0	0
5:15 PM	1	0	0	2
5:30 PM	1	0	0	0
5:45 PM	0	0	0	0
TOTALS	3	2	1	2

08-4148-032		
Schley St & Harbor Dr		
6/10/08	DAY:	Tuesday
Barrio Logan		
	Schley St & Harbor Dr 6/10/08	Schley St & Harbor Dr 6/10/08 DAY:

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	2	0
7:15 AM	0	1	1	0
7:30 AM	0	3	0	0
7:45 AM	0	4	0	0
8:00 AM	0	0	1	0
8:15 AM	0	1	1	0
8:30 AM	0	0	0	0
8:45 AM	0	6	1	0
TOTALS	0	15	6	0

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

-				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	0	0
4:15 PM	7	0	0	0
4:30 PM	1	0	0	0
4:45 PM	2	0	0	0
5:00 PM	3	0	0	0
5:15 PM	0	0	0	0
5:30 PM	1	0	0	0
5:45 PM	2	0	0	0
TOTALS	16	0	0	0

BIKES

BIREO				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	1	0
4:15 PM	0	0	2	4
4:30 PM	0	0	1	3
4:45 PM	0	0	2	3
5:00 PM	0	0	0	1
5:15 PM	0	0	1	2
5:30 PM	1	0	0	0
5:45 PM	0	0	1	0
TOTALS	1	0	8	13

PROJECT #:	08-4148-035		
LOCATION:	28th St & Main St		
DATE:	6/11/08	DAY:	Wednesday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
6:00 AM	3	1	30	32
6:15 AM	2	2	21	20
6:30 AM	1	1	20	11
6:45 AM	1	3	14	2
7:00 AM	8	6	19	5
7:15 AM	0	2	19	9
7:30 AM	0	2	8	2
7:45 AM	4	1	14	10
8:00 AM	2	2	21	10
8:15 AM	6	3	5	6
8:30 AM	3	0	2	7
8:45 AM	1	1	0	4
TOTALS	31	24	173	118

TIME	NORTH	SOUTH	EAST	WEST
6:00 AM	3	0	2	1
6:15 AM	3	1	2	2
6:30 AM	1	1	3	1
6:45 AM	2	1	0	0
7:00 AM	1	0	2	0
7:15 AM	0	0	1	0
7:30 AM	1	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTALS	11	3	10	4

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
3:00 PM	6	9	58	92
3:15 PM	6	0	12	64
3:30 PM	10	3	12	26
3:45 PM	5	0	6	18
4:00 PM	8	4	5	26
4:15 PM	7	1	3	43
4:30 PM	6	1	7	21
4:45 PM	1	0	7	14
5:00 PM	13	2	3	24
5:15 PM	3	2	7	22
5:30 PM	7	4	0	20
5:45 PM	0	1	4	10
TOTALS	72	27	124	380

BIKES

TIME	NORTH	SOUTH	EAST	WEST
3:00 PM	1	4	0	0
3:15 PM	2	2	0	5
3:30 PM	0	1	0	0
3:45 PM	0	1	0	1
4:00 PM	0	1	1	1
4:15 PM	0	2	0	0
4:30 PM	0	0	0	0
4:45 PM	0	1	0	1
5:00 PM	1	0	0	1
5:15 PM	0	0	1	0
5:30 PM	0	2	0	1
5:45 PM	1	14	1	0
TOTALS	5	28	3	10

PROJECT #:	08-4148-036		
LOCATION:	28th St & Harbor Dr		
DATE:	6/11/08	DAY:	Wednesday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
6:00 AM	209	2	0	0
6:15 AM	176	3	0	0
6:30 AM	81	5	0	0
6:45 AM	32	6	0	0
7:00 AM	41	42	0	0
7:15 AM	14	11	0	0
7:30 AM	21	7	0	0
7:45 AM	4	9	0	0
8:00 AM	1	8	0	0
8:15 AM	14	6	0	0
8:30 AM	8	10	0	0
8:45 AM	15	7	0	0
TOTALS	616	116	0	0

TIME	NORTH	SOUTH	EAST	WEST
6:00 AM	0	0	1	0
6:15 AM	1	0	2	1
6:30 AM	2	0	1	5
6:45 AM	0	0	1	2
7:00 AM	2	0	1	2
7:15 AM	0	0	2	4
7:30 AM	1	0	2	1
7:45 AM	0	0	1	0
8:00 AM	0	0	3	1
8:15 AM	0	0	1	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTALS	6	0	15	16

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
3:00 PM	0	340	1	0
3:15 PM	69	111	2	0
3:30 PM	34	54	0	0
3:45 PM	26	30	0	0
4:00 PM	9	49	0	0
4:15 PM	1	33	0	0
4:30 PM	3	34	0	0
4:45 PM	1	27	0	0
5:00 PM	5	17	0	0
5:15 PM	1	18	0	0
5:30 PM	2	10	0	0
5:45 PM	4	19	0	0
TOTALS	155	742	3	0

BIKES

TIME	NORTH	SOUTH	EAST	WEST
3:00 PM	0	0	0	0
3:15 PM	0	1	0	1
3:30 PM	0	0	1	0
3:45 PM	0	1	3	1
4:00 PM	0	3	3	1
4:15 PM	0	0	3	0
4:30 PM	0	0	1	3
4:45 PM	1	0	3	2
5:00 PM	0	0	0	5
5:15 PM	0	0	0	1
5:30 PM	0	0	7	2
5:45 PM	0	1	0	4
TOTALS	1	6	21	20

PROJECT #:	08-4148-038		
LOCATION:	32nd St & Main St		
DATE:	6/12/08	DAY:	Thursday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
6:00 AM	1	0	2	2
6:15 AM	2	0	0	0
6:30 AM	0	2	0	3
6:45 AM	1	1	0	4
7:00 AM	1	0	1	2
7:15 AM	3	0	0	6
7:30 AM	1	0	3	4
7:45 AM	2	2	0	1
8:00 AM	0	1	0	3
8:15 AM	0	0	0	1
8:30 AM	3	1	0	7
8:45 AM	0	0	0	1
TOTALS	14	7	6	34

TIME	NORTH	SOUTH	EAST	WEST
6:00 AM	2	0	0	0
6:15 AM	4	1	2	0
6:30 AM	0	0	1	1
6:45 AM	1	0	0	3
7:00 AM	0	1	2	2
7:15 AM	1	0	0	0
7:30 AM	2	1	0	0
7:45 AM	1	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	1	0	0	1
8:45 AM	0	0	1	0
TOTALS	12	3	6	7

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
3:00 PM	0	1	0	4
3:15 PM	0	0	0	3
3:30 PM	1	0	1	5
3:45 PM	1	0	0	5
4:00 PM	1	2	1	4
4:15 PM	0	0	0	3
4:30 PM	5	2	2	0
4:45 PM	1	0	1	2
5:00 PM	0	0	0	2
5:15 PM	0	0	0	0
5:30 PM	1	0	1	2
5:45 PM	0	0	1	1
TOTALS	10	5	7	31

BIKES

TIME	NORTH	SOUTH	EAST	WEST
3:00 PM	0	1	2	2
3:15 PM	0	0	0	1
3:30 PM	0	0	4	1
3:45 PM	1	3	1	1
4:00 PM	1	0	2	0
4:15 PM	0	1	0	0
4:30 PM	0	2	0	0
4:45 PM	0	0	0	1
5:00 PM	1	0	1	2
5:15 PM	1	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	1
TOTALS	4	7	10	9

PROJECT #:	08-4148-040		
LOCATION:	32nd St & Harbor Dr		
DATE:	6/12/08	DAY:	Thursday
CITY:	Barrio Logan		

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
6:00 AM	3	0	0	3
6:15 AM	5	0	0	2
6:30 AM	6	0	0	5
6:45 AM	15	0	0	14
7:00 AM	4	0	0	6
7:15 AM	4	0	0	9
7:30 AM	7	0	0	7
7:45 AM	4	0	0	5
8:00 AM	1	0	0	1
8:15 AM	11	0	0	6
8:30 AM	10	0	0	17
8:45 AM	0	0	0	6
TOTALS	70	0	0	81

TIME	NORTH	SOUTH	EAST	WEST
6:00 AM	0	0	1	3
6:15 AM	0	0	6	0
6:30 AM	0	2	7	0
6:45 AM	0	1	5	0
7:00 AM	0	2	5	0
7:15 AM	0	0	3	0
7:30 AM	0	0	3	0
7:45 AM	0	1	1	0
8:00 AM	0	0	1	0
8:15 AM	0	0	4	0
8:30 AM	0	0	1	0
8:45 AM	0	1	1	0
TOTALS	0	7	38	3

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
3:00 PM	4	0	0	0
3:15 PM	23	0	0	9
3:30 PM	16	0	0	18
3:45 PM	23	0	0	31
4:00 PM	23	0	0	19
4:15 PM	19	0	0	18
4:30 PM	25	0	0	19
4:45 PM	14	0	0	20
5:00 PM	20	0	0	25
5:15 PM	20	0	0	24
5:30 PM	14	0	0	14
5:45 PM	2	0	0	4
TOTALS	203	0	0	201

BIKES

TIME	NORTH	SOUTH	EAST	WEST
3:00 PM	0	0	3	1
3:15 PM	2	0	7	1
3:30 PM	1	0	0	2
3:45 PM	4	0	2	6
4:00 PM	0	0	0	1
4:15 PM	2	0	1	1
4:30 PM	2	0	1	2
4:45 PM	0	0	2	4
5:00 PM	0	0	4	3
5:15 PM	0	0	1	3
5:30 PM	1	0	0	0
5:45 PM	0	0	3	4
TOTALS	12	0	24	28

08-4148-041		
I-15 Ramp & Main St		
6/12/08	DAY:	Thursday
Barrio Logan		
	I-15 Ramp & Main St 6/12/08	I-15 Ramp & Main St 6/12/08 DAY:

PEDESTRIANS

TIME	NORTH	SOUTH	EAST	WEST
7:00 AM	0	0	0	1
7:15 AM	0	0	1	0
7:30 AM	0	0	0	1
7:45 AM	0	0	1	0
8:00 AM	0	0	0	2
8:15 AM	0	0	1	1
8:30 AM	0	0	0	0
8:45 AM	0	0	2	3
TOTALS	0	0	5	8

SOUTH EAST WEST TIME NORTH 7:00 AM 7:15 AM 7:30 AM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM TOTALS

PEDESTRIANS

-				
TIME	NORTH	SOUTH	EAST	WEST
4:00 PM	0	0	3	1
4:15 PM	0	0	2	2
4:30 PM	0	0	5	1
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	1
5:45 PM	0	0	0	0
TOTALS	0	0	10	5

BIKES

NORTH	SOUTH	EAST	WEST
0	0	2	0
0	0	2	0
0	0	0	0
0	0	1	1
0	0	2	2
0	0	0	0
0	0	0	0
0	0	0	1
0	0	7	4
	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 2 0 0 2 0 0 0 0 0 0 0 0 1 0 0 2 0 0 1 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

APPENDIX D

Intersection Level of Service Worksheets

Barrio Logan CPU 1: Commercial St &	16th S	t						E	xisting T	Condit iming P		
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Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations		ŝ			\$			বাচ			413	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			1.00			0.99			0.98	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.98			0.98			0.96			0.95	
Flt Protected		1.00			1.00			0.99			1.00	
Satd. Flow (prot)		1803			1813			3312			3273	
Flt Permitted		0.99			0.97			0.92			0.94	
Satd. Flow (perm)		1791			1767			3093			3104	
Volume (vph)	3	83	19	13	125	22	9	20	9	7	49	29
Peak-hour factor, PHF	0.92	0.82	0.82	0.91	0.91	0.91	0.95	0.95	0.92	0.76	0.76	0.76
Adj. Flow (vph)	3	101	23	14	137	24	9	21	10	9	64	38
RTOR Reduction (vph)	0	11	0	0	0	0	0	4	0	0	15	0
Lane Group Flow (vph)	0	116	0	0	175	0	0	36	0	0	96	0
Confl. Peds. (#/hr)	16		15	15		16	36		12	12		36
Confl. Bikes (#/hr)						1			6			
Heavy Vehicles (%)	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.8			10.8			36.1			36.1	
Effective Green, g (s)		10.8			10.8			36.1			36.1	
Actuated g/C Ratio		0.18			0.18			0.60			0.60	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		321			317			1855			1861	
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.10			0.01			c0.03	
v/c Ratio		0.36			0.55			0.02			0.05	
Uniform Delay, d1		21.7			22.5			4.9			5.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			2.1			0.0			0.1	
Delay (s)		22.4			24.6			4.9			5.0	
Level of Service		С			С			А			А	
Approach Delay (s)		22.4			24.6			4.9			5.0	
Approach LOS		С			С			А			А	
Intersection Summary												
HCM Average Control E	Delav		19.4	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.18									
Actuated Cycle Length			60.2	Ş	Sum of I	ost time	e (s)		12.0			
Intersection Capacity U			52.5%			el of Sei	(-)		A			
Analysis Period (min)			15									

Timing Plan: AM Peak 1: Commercial St & 16th St ∢∕ Movement SWR Lane Configurations <mark>ہ</mark> 1900 Ideal Flow (vphpl) Total Lost time (s) 4.0 Lane Util. Factor 1.00 Frpb, ped/bikes 1.00 Flpb, ped/bikes 1.00 Frt 0.86 Flt Protected 1.00 Satd. Flow (prot) 1611 Flt Permitted 1.00 Satd. Flow (perm) 1611 Volume (vph) 20 Peak-hour factor, PHF 0.92 Adj. Flow (vph) 22 RTOR Reduction (vph) 0 Lane Group Flow (vph) 22 Confl. Peds. (#/hr) Confl. Bikes (#/hr) Heavy Vehicles (%) 2% Turn Type custom Protected Phases 9 Permitted Phases Actuated Green, G (s) 1.3 Effective Green, g (s) 1.3 Actuated g/C Ratio 0.02 Clearance Time (s) 4.0 Vehicle Extension (s) 3.0 Lane Grp Cap (vph) 35 v/s Ratio Prot c0.01 v/s Ratio Perm v/c Ratio 0.63 Uniform Delay, d1 29.2 Progression Factor 1.00 Incremental Delay, d2 30.3 Delay (s) 59.6 Level of Service Е Approach Delay (s) Approach LOS Intersection Summary

c Critical Lane Group

K:\SND_TPTO\095707000\Synchro\EX AM.sy7 KHA Kimley-Horn and Associates, Inc. Synchro 6 Report Page 1 K:\SND_TPTO\095707000\Synchro\EX AM.sy7 KHA Kimley-Horn and Associates, Inc.

Barrio Logan CPU

Synchro 6 Report Page 2

Existing Conditions w LRT

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		474		λi,	1÷			e la			4.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	30	14	3	101	25	11	34	12	24	36	1:
Peak Hour Factor	0.92	0.92	0.92	0.70	0.70	0.70	0.75	0.75	0.75	0.76	0.76	0.76
Hourly flow rate (vph)	4	33	15	4	144	36	15	45	16	32	47	17
Pedestrians		7			14			16			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					668							
pX, platoon unblocked												
vC, conflicting volume	199			64			266	272	54	267	262	18
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	199			64			266	272	54	267	262	188
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			97	93	98	95	92	98
cM capacity (veh/h)	1349			1516			586	611	977	583	619	804
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	21	32	4	180	76	96						
Volume Left	4	0	4	0	15	32						
Volume Right	0	15	0	36	16	17						
cSH	1349	1700	1516	1700	657	632						
Volume to Capacity	0.00	0.02	0.00	0.11	0.12	0.15						
Queue Length 95th (ft)	0	0	0	0	10	13						
Control Delay (s)	1.6	0.0	7.4	0.0	11.2	11.7						
Lane LOS	А		А		В	В						
Approach Delay (s)	0.6		0.2		11.2	11.7						
Approach LOS					В	В						
Intersection Summary												
Average Delay			5.0									
Intersection Capacity Ut	ilization	1	25.0%	10	CU Lev	el of Ser	vice		А			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	<u>1</u> 4	LDIX	11.02	1.	WBR	NDL	đa	NBR	ODL	1.	ODI
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	1000	4.0	4.0	1000	1000	4.0	1000	1000	4.0	1000
Lane Util, Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.97		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	0.98	1.00		0.97	1.00			0.99			1.00	
Frt	1.00	0.92		1.00	0.98			0.95			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1731	1666		1720	1804			1717			1766	
Flt Permitted	0.68	1.00		0.72	1.00			0.90			0.99	
Satd. Flow (perm)	1246	1666		1299	1804			1570			1754	
Volume (vph)	2	22	26	11	79	15	38	26	33	4	40	18
Peak-hour factor, PHF	0.78	0.78	0.78	0.82	0.82	0.82	0.73	0.73	0.73	0.74	0.74	0.74
Adj. Flow (vph)	3	28	33	13	96	18	52	36	45	5	54	24
RTOR Reduction (vph)	0	26	0	0	14	0	0	16	0	0	9	0
Lane Group Flow (vph)	3	35	0	13	100	0	0	117	0	0	74	0
Confl. Peds. (#/hr)	21		25	25		21	37		14	14		37
Confl. Bikes (#/hr)						3			3			1
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.8	9.8		9.8	9.8			30.8			30.8	
Effective Green, g (s)	9.8	9.8		9.8	9.8			30.8			30.8	
Actuated g/C Ratio	0.20	0.20		0.20	0.20			0.63			0.63	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	251	336		262	364			995			1112	
v/s Ratio Prot		0.02			c0.06							
v/s Ratio Perm	0.00			0.01				c0.07			0.04	
v/c Ratio	0.01	0.10		0.05	0.27			0.12			0.07	
Uniform Delay, d1	15.5	15.8		15.6	16.4			3.5			3.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.1		0.1	0.4			0.1			0.0	
Delay (s)	15.5	16.0		15.7	16.8			3.6			3.4	
Level of Service	В	В		В	В			А			Α	
Approach Delay (s)		15.9			16.7			3.6			3.4	
Approach LOS		В			В			A			A	
Intersection Summary												
HCM Average Control E			9.6	H	ICM Le	vel of Se	ervice		Α			
HCM Volume to Capaci			0.15									
Actuated Cycle Length (48.6	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		33.7%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									
c Critical Lane Group												

Synchro 6 Report Page 3 K:\SND_TPTO\095707000\Synchro\EX AM.sy7 KHA Kimley-Horn and Associates, Inc.

Barrio Logan CPU 4: Newton Ave & Sig	jsbee	St						E>	kisting T	Condit iming F		
	≯	+	*	4	ł	*	≺	1	1	1	Ŧ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		¢.			\$			4.			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	22	12	3	34	20	14	75	9	13	50	15
Peak Hour Factor	0.61	0.61	0.61	0.84	0.84	0.84	0.79	0.79	0.79	0.81	0.81	0.81
Hourly flow rate (vph)	8	36	20	4	40	24	18	95	11	16	62	19
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	64	68	124	96								
Volume Left (vph)	8	4	18	16								
Volume Right (vph)	20	24	11	19								
Hadj (s)	-0.12	-0.17	0.01	-0.05								
Departure Headway (s)	4.3	4.3	4.3	4.3								
Degree Utilization, x	0.08	0.08	0.15	0.11								
Capacity (veh/h)	782	781	801	798								
Control Delay (s)	7.7	7.7	8.1	7.8								
Approach Delay (s)	7.7	7.7	8.1	7.8								
Approach LOS	A	А	Α	A								
Intersection Summary												
Delay			7.9									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	n	25.8%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 5: Main St & Sigsbe	e St							Ex	isting T	Condit iming P		
	۶	-	\mathbf{r}	4	+	×	1	1	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			10			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	5	1	6	4	61	1	39	5	31	42	2
Peak Hour Factor	0.58	0.58	0.58	0.84	0.84	0.84	0.80	0.80	0.80	0.85	0.85	0.85
Hourly flow rate (vph)	2	9	2	7	5	73	1	49	6	36	49	2
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	12	85	56	88								
Volume Left (vph)	2	7	1	36								
Volume Right (vph)	2	73	6	2								
Hadj (s)	-0.02	-0.46	-0.03	0.10								
Departure Headway (s)	4.3	3.8	4.2	4.3								
Degree Utilization, x	0.01	0.09	0.06	0.10								
Capacity (veh/h)	804	917	834	823								
Control Delay (s)	7.3	7.1	7.4	7.7								
Approach Delay (s)	7.3	7.1	7.4	7.7								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			7.4									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	1	22.5%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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· · · · · · · · · · · · · · · · · · ·	bee St						
	٠	-	-	•	1	1	
Novement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	7	ሳቀ	† Ъ		14		
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	22	247	831	20	12	24	
Peak Hour Factor	0.77	0.77	0.89	0.89	0.72	0.72	
Hourly flow rate (vph)	29	321	934	22	17	33	
Pedestrians							
ane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Vedian type					Raised		
Median storage veh)					0		
Upstream signal (ft)			1319				
X, platoon unblocked							
C, conflicting volume	956				1162	478	
/C1, stage 1 conf vol					945		
/C2, stage 2 conf vol					218		
Cu, unblocked vol	956				1162	478	
C, single (s)	4.1				6.8	6.9	
C, 2 stage (s)					5.8		
F (s)	2.2				3.5	3.3	
00 queue free %	96				92	94	
M capacity (veh/h)	715				207	533	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	
/olume Total	29	160	160	622	334	50	
/olume Left	29	0	0	0	0	17	
/olume Right	0	0	0	0	22	33	
SH	715	1700	1700	1700	1700	350	
/olume to Capacity	0.04	0.09	0.09	0.37	0.20	0.14	
Queue Length 95th (ft)	3	0	0	0	0	12	
Control Delay (s)	10.2	0.0	0.0	0.0	0.0	17.0	
Lane LOS	В					С	
Approach Delay (s)	0.8			0.0		17.0	
Approach LOS						С	
ntersection Summary							
Average Delay			0.8				
Intersection Capacity Uti	lization		33.6%	- D	CU Leve	el of Servic	e A

	۶	-	\mathbf{r}	4	+	•	1	Ť	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ĥ		×	ţ.			40			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	68	11	45	86	0	16	0	38	137	151	21
Peak Hour Factor	0.93	0.93	0.93	0.94	0.94	0.94	0.78	0.78	0.78	0.76	0.76	0.76
Hourly flow rate (vph)	0	73	12	48	91	0	21	0	49	180	199	28
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	85	48	91	69	407							
Volume Left (vph)	0	48	0	21	180							
Volume Right (vph)	12	0	0	49	28							
Hadj (s)	-0.05	0.53	0.03	-0.33	0.08							
Departure Headway (s)	5.4	6.3	5.8	4.7	4.7							
Degree Utilization, x	0.13	0.08	0.15	0.09	0.53							
Capacity (veh/h)	605	524	569	701	738							
Control Delay (s)	9.1	8.7	8.6	8.2	12.9							
Approach Delay (s)	9.1	8.7		8.2	12.9							
Approach LOS	А	А		А	В							
Intersection Summary												
Delay			11.1									
HCM Level of Service			В									
Intersection Capacity Ut	ilizatior	ı	39.3%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)		-	15		201							

Barrio Logan CPU 8: National Ave & Be	eardsle	ey St						Ex	isting T	Condit iming P		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Т.)r	Þ			40			4.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	8	41	8	68	71	18	4	30	13	20	138	23
Peak Hour Factor	0.84	0.84	0.84	0.80	0.80	0.80	0.65	0.65	0.65	0.89	0.89	0.89
Hourly flow rate (vph)	10	49	10	85	89	22	6	46	20	22	155	26
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	10	58	85	111	72	203						
Volume Left (vph)	10	0	85	0	6	22						
Volume Right (vph)	0	10	0	23	20	26						
Hadj (s)	0.53	-0.08	0.53	-0.11	-0.11	-0.02						
Departure Headway (s)	6.0	5.3	5.8	5.2	4.7	4.6						
Degree Utilization, x	0.02	0.09	0.14	0.16	0.09	0.26						
Capacity (veh/h)	565	632	589	663	715	735						
Control Delay (s)	7.8	7.6	8.5	7.9	8.2	9.3						
Approach Delay (s)	7.7		8.2		8.2	9.3						
Approach LOS	A		A		A	A						
Intersection Summary												
Delay			8.5									
HCM Level of Service			А									
Intersection Capacity Ut	ilization		33.3%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 9: Newton Ave & Be	ardsle	y St						Ex	tisting T	Condit		
	≯	+	*	4	Ļ	•	•	1	*	*	Ļ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		s.			4			de.			4.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	13	31	3	16	39	15	5	23	11	52	137	28
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.65	0.65	0.65	0.92	0.92	0.92
Hourly flow rate (vph)	15	37	4	18	44	17	8	35	17	57	149	30
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	56	80	60	236								
Volume Left (vph)	15	18	8	57								
Volume Right (vph)	4	17	17	30								
Hadj (s)	0.05	-0.05	-0.11	0.00								
Departure Headway (s)	4.7	4.6	4.4	4.3								
Degree Utilization, x	0.07	0.10	0.07	0.28								
Capacity (veh/h)	704	726	780	804								
Control Delay (s)	8.1	8.1	7.7	9.0								
Approach Delay (s)	8.1	8.1	7.7	9.0								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			8.5									
HCM Level of Service			А									
Intersection Capacity Ut	ilization	I	37.7%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU 10: Main St & Beard	sley S	st						E>	0		tions w Plan: AM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		¢.			\$			610			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	15	62	4	35	90	20	2	8	16	20	57	52
Peak Hour Factor	0.78	0.78	0.78	0.77	0.77	0.77	0.65	0.65	0.65	0.87	0.87	0.87
Hourly flow rate (vph)	19	79	5	45	117	26	3	12	25	23	66	60
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	104	188	40	148								
Volume Left (vph)	19	45	3	23								
Volume Right (vph)	5	26	25	60								
Hadj (s)	0.04	0.00	-0.32	-0.18								
Departure Headway (s)	4.6	4.5	4.4	4.5								
Degree Utilization, x	0.13	0.23	0.05	0.18								
Capacity (veh/h)	743	765	743	752								
Control Delay (s)	8.3	8.8	7.7	8.5								
Approach Delay (s)	8.3	8.8	7.7	8.5								
Approach LOS	Α	A	A	A								
Intersection Summary												
Delay			8.5									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	n	32.2%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 11: Harbor Dr & Bea	ardslev	st					Existing Conditions w LR Timing Plan: AM Pea
	<u>, addie</u>	-	+	•	1	4	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	ň	ሳቀ	† Ъ		14		
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	13	209	907	16	30	54	
Peak Hour Factor	0.84	0.84	0.88	0.88	0.78	0.78	
Hourly flow rate (vph)	15	249	1031	18	38	69	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					Raised		
Median storage veh)					0		
Upstream signal (ft)			658				
pX, platoon unblocked	0.89				0.89	0.89	
vC, conflicting volume	1049				1195	524	
vC1, stage 1 conf vol					1040		
vC2, stage 2 conf vol					155		
vCu, unblocked vol	931				1095	341	
tC, single (s)	4.3				6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)	2.3				3.5	3.3	
p0 queue free %	97				80	88	
cM capacity (veh/h)	608				196	582	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	
Volume Total	15	124	124	687	362	108	
Volume Left	15	0	0	0	0	38	
Volume Right	0	0	0	0	18	69	
cSH	608	1700	1700	1700	1700	342	
Volume to Capacity	0.03	0.07	0.07	0.40	0.21	0.31	
Queue Length 95th (ft)	2	0.07	0.07	0.10	0.21	33	
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	20.3	
Lane LOS	B	0.0	0.0	0.0	0.0	C	
Approach Delay (s)	0.6			0.0		20.3	
Approach LOS	0.0			0.0		C	
Intersection Summary					_		
Average Delay			1.7				
Intersection Capacity Ut	ilization		37.2%		CU Leve	el of Service	А
Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				14	4		μ	4			41.	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0			4.0	
ane Util. Factor				0.95	0.95		1.00	1.00			0.95	
rt				1.00	0.97		1.00	1.00			0.99	
Flt Protected				0.95	0.98		0.95	1.00			1.00	
Satd. Flow (prot)				1478	1483		1626	1712			3219	
Flt Permitted				0.95	0.98		0.95	1.00			1.00	
Satd. Flow (perm)				1478	1483		1626	1712			3219	
Volume (vph)	0	0	0	516	134	60	109	106	0	0	192	14
Peak-hour factor, PHF	0.25	0.25	0.25	0.81	0.81	0.81	0.93	0.93	0.93	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	637	165	74	117	114	0	0	221	16
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	7	C
Lane Group Flow (vph)	0	0	0	433	436	0	117	114	0	0	230	0
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%
Turn Type				Split	0		Split	0			0	
Protected Phases				8	8		6	6			2	
Permitted Phases				23.5	23.5		12.6	12.6			12.8	
Actuated Green, G (s) Effective Green, g (s)				23.5	23.5		12.6	12.6			12.0	
Actuated g/C Ratio				0.39	0.39		0.21	0.21			0.21	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
ane Grp Cap (vph)				570	572		336	354			677	
/s Ratio Prot				0.29	c0.29		c0.07	0.07			c0.07	
/s Ratio Perm				0.23	00.23		0.07	0.07			0.07	
/c Ratio				0.76	0.76		0.35	0.32			0.34	
Uniform Delay, d1				16.2	16.3		20.6	20.5			20.5	
Progression Factor				1.00	1.00		1.00	1.00			1.00	
ncremental Delay, d2				5.8	5.9		0.6	0.5			0.3	
Delay (s)				22.0	22.2		21.3	21.1			20.8	
Level of Service				C	С		C	С			C	
Approach Delay (s)		0.0			22.1			21.2			20.8	
Approach LOS		А			С			С			С	
ntersection Summary												
HCM Average Control D	elay		21.7	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit			0.54									
Actuated Cycle Length (60.9	S	Sum of I	ost time	e (s)		12.0			
ntersection Capacity Ut	ilization		41.4%	10	CU Lev	el of Sei	rvice		А			
Analysis Period (min)			15									

13: Logan Ave & Ce	sar E.	Chave	ez Pkw	vy						irning F	Plan: AN	i Pea
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBI
Lane Configurations	ň	T.		74	+	7	H	44	٣	7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1747	1735		1757	1863	1544	1530	3059	1328	1530	2996	
Flt Permitted	0.74	1.00		0.44	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1365	1735		821	1863	1544	1530	3059	1328	1530	2996	
Volume (vph)	54	109	69	14	19	34	11	140	145	70	528	6
Peak-hour factor, PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.91	0.91	0.91	0.87	0.87	0.8
Adj. Flow (vph)	61	122	78	17	23	40	12	154	159	80	607	7
RTOR Reduction (vph)	0	39	0	0	0	33	0	0	69	0	6	
Lane Group Flow (vph)	61	161	0	17	23	7	12	154	90	80	671	
Confl. Peds. (#/hr)	15		13	13		15			17			3
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	189
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8			2			
Actuated Green, G (s)	14.2	14.2		14.2	14.2	14.2	1.3	45.5	45.5	8.3	52.5	
Effective Green, g (s)	14.2	14.2		14.2	14.2	14.2	1.3	45.5	45.5	8.3	52.5	
Actuated g/C Ratio	0.18	0.18		0.18	0.18	0.18	0.02	0.57	0.57	0.10	0.66	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	242	308		146	331	274	25	1740	755	159	1966	
v/s Ratio Prot	212	c0.09		110	0.01	211	c0.01	0.05	100	c0.05	c0.22	
v/s Ratio Perm	0.04	00.00		0.02	0.01	0.00	00.01	0.00	0.07	00.00	00.22	
v/c Ratio	0.25	0.52		0.12	0.07	0.03	0.48	0.09	0.12	0.50	0.34	
Uniform Delay, d1	28.3	29.8		27.6	27.4	27.2	39.0	7.8	8.0	33.9	6.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.80	0.71	0.70	1.00	1.00	
Incremental Delay, d2	0.6	1.00		0.4	0.1	0.0	13.6	0.1	0.70	2.5	0.5	
Delay (s)	28.9	31.4		28.0	27.5	27.2	45.0	5.7	5.9	36.4	6.6	
Level of Service	20.9 C	51.4 C		20.0 C	27.5 C	27.2 C	43.0 D	3.7 A	5.9 A	30.4 D	0.0 A	
Approach Delay (s)	0	30.8		0	27.5	0	5	7.2	~ ~	5	9.7	
Approach LOS		50.0 C			27.5 C			A			3.7 A	
		U			U			~			A	
Intersection Summary			44.0			1.00						
	M Average Control Delay 14.0			H	ICM Le	vel of S	ervice		В			
HCM Volume to Capacit			0.39						10.0			
Actuated Cycle Length (80.0					12.0				
Intersection Capacity Ut	Ilization	1	49.0%	10	CU Lev	el of Se	rvice		A			
Analysis Period (min)			15									

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	×	ţ,	34	To	ž	41.	H.	4	ř	
Volume (vph)	42	29	90	72	14	291	39	461	117	
Turn Type	Perm		Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6		
Permitted Phases	4		8		2		6		6	
Detector Phases	4	4	8	8	2	2	6	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	35.0	35.0	35.0	35.0	45.0	45.0	45.0	45.0	45.0	
Total Split (%)		43.8%								
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Intersection Summary										
Cycle Length: 80										
Actuated Cycle Length	n: 80									
Offset: 1 (1%), Refere	nced to p	hase 2:	NBTL a	and 6:SE	3TL, Sta	art of Gi	reen			
Natural Cycle: 65										
Control Type: Actuate	d-Coordii	nated								

↑	<i>▲</i> ₀₄
45 s	35 s
↓ ≻ ø6	↓ _{ø8}
45 s	35 %

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	Ţ.)r	Þ		Υŗ	416		7	4	ħ,
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1756		1770	1743		1612	3211		1530	1610	1369
Flt Permitted	0.56	1.00		0.72	1.00		0.43	1.00		0.54	1.00	1.00
Satd. Flow (perm)	1036	1756		1334	1743		733	3211		875	1610	1369
Volume (vph)	42	29	18	90	72	54	14	291	8	39	461	117
Peak-hour factor, PHF	0.74	0.74	0.74	0.91	0.91	0.91	0.86	0.86	0.86	0.85	0.85	0.85
Adj. Flow (vph)	57	39	24	99	79	59	16	338	9	46	542	138
RTOR Reduction (vph)	0	21	0	0	48	0	0	1	0	0	0	32
Lane Group Flow (vph)	57	42	0	99	90	0	16	346	0	46	542	106
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	10.5	10.5		10.5	10.5		61.5	61.5		61.5	61.5	61.5
Effective Green, g (s)	10.5	10.5		10.5	10.5		61.5	61.5		61.5	61.5	61.5
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.77	0.77		0.77	0.77	0.77
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	136	230		175	229		563	2468		673	1238	1052
v/s Ratio Prot		0.02			0.05			0.11			c0.34	
v/s Ratio Perm	0.06			c0.07			0.02			0.05		0.08
v/c Ratio	0.42	0.18		0.57	0.39		0.03	0.14		0.07	0.44	0.10
Uniform Delay, d1	31.9	30.9		32.6	31.8		2.2	2.4		2.3	3.2	2.3
Progression Factor	1.00	1.00		1.00	1.00		0.59	0.63		0.81	1.11	1.69
Incremental Delay, d2	2.1	0.4		4.1	1.1		0.1	0.1		0.2	1.1	0.2
Delay (s)	34.0	31.3		36.8	33.0		1.4	1.6		2.0	4.7	4.1
Level of Service	С	С		D	С		А	А		А	А	A
Approach Delay (s)		32.6			34.5			1.6			4.4	
Approach LOS		С			С			А			А	
Intersection Summary												
HCM Average Control D	Delay		11.0	F	ICM Le	vel of Se	ervice		В			
HCM Volume to Capacit	ty ratio		0.46									
Actuated Cycle Length (s)		80.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		51.4%	10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									
Critical Lane Group												

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	ň	Ţ.	34	1.	N.	41>	H	ţ,	
Volume (vph)	28	19	20	28	9	217	27	406	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	
Total Split (%)		42.5%							
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	n: 80								
Offset: 20 (25%), Refe	erenced t	o phase	2:NBT	L and 6	SBTL,	Start of	Green		
Natural Cycle: 60									
Control Type: Actuate	d-Coordii	nated							

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46 s	34 *	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	- N	14	LDIX	100L	1	VUDIN	NDL Vg	1	NDIX	SDL N	1001	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	1300	4.0	4.0	1300	4.0	4.0	1300	4.0	4.0	1300
ane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.93		1.00	0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1734		1770	1729		1612	3206		1612	1664	
Flt Permitted	0.71	1.00		0.72	1.00		0.43	1.00		0.58	1.00	
Satd. Flow (perm)	1319	1734		1349	1729		729	3206		979	1664	
/olume (vph)	28	19	16	20	28	26	9	217	8	27	406	58
Peak-hour factor, PHF	0.70	0.70	0.70	0.72	0.72	0.72	0.79	0.79	0.79	0.81	0.81	0.81
Adj. Flow (vph)	40	27	23	28	39	36	11	275	10	33	501	72
RTOR Reduction (vph)	0	21	0	0	33	0	0	1	0	0	3	0
Lane Group Flow (vph)	40	29	0	28	42	0	11	284	0	33	570	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Furn Type	Perm			Perm			Perm			Perm	/*	
Protected Phases		4			8			2			6	
Permitted Phases	4	·		8	Ŭ		2	_		6	Ű	
Actuated Green, G (s)	6.5	6.5		6.5	6.5		65.5	65.5		65.5	65.5	
Effective Green, g (s)	6.5	6.5		6.5	6.5		65.5	65.5		65.5	65.5	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.82	0.82		0.82	0.82	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	107	141		110	140		597	2625		802	1362	
/s Ratio Prot		0.02			0.02			0.09			c0.34	
//s Ratio Perm	c0.03			0.02			0.02			0.03		
//c Ratio	0.37	0.20		0.25	0.30		0.02	0.11		0.04	0.42	
Jniform Delay, d1	34.8	34.3		34.5	34.6		1.3	1.4		1.4	2.0	
Progression Factor	1.00	1.00		1.00	1.00		0.38	0.47		0.65	1.02	
ncremental Delay, d2	2.2	0.7		1.2	1.2		0.1	0.1		0.1	0.9	
Delay (s)	37.0	35.1		35.7	35.8		0.6	0.8		1.0	2.9	
evel of Service	D	D		D	D		А	А		А	А	
Approach Delay (s)		35.9			35.8			0.8			2.8	
Approach LOS		D			D			А			А	
ntersection Summary												
HCM Average Control D			8.1	H	ICM Le	vel of Se	ervice		А			
HCM Volume to Capacit			0.41									
Actuated Cycle Length (80.0			ost time			8.0			
atoms stime Conseiler 114	11 + 1		00.00/	14	0111	1 10						
Intersection Capacity Ut Analysis Period (min)	ilization		39.8% 15	10	CU Lev	el of Ser	vice		A			

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	ň	ĥ	34	1.	7	41>	H	10	
Volume (vph)	56	43	25	47	7	155	25	361	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	35.0	35.0	35.0	35.0	45.0	45.0	45.0	45.0	
Total Split (%)		43.8%							
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	n: 80								
Offset: 2 (3%), Refere	nced to p	hase 2:	NBTL a	and 6:SI	3TL, Sta	art of Gi	reen		
Natural Cycle: 60									
Control Type: Actuate	d-Coordii	nated							

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16: Main St & Cesar		G V O Z 1	Rify									l Peak
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	ţ,		Ж	Þ		Υç	作る		7	î»	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	0.97	1.00		0.99	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.93		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1718	1856		1743	1689		1525	3097		1546	1573	
Flt Permitted	0.69	1.00		0.72	1.00		0.43	1.00		0.63	1.00	
Satd. Flow (perm)	1251	1856		1328	1689		689	3097		1031	1573	
Volume (vph)	56	43	1	25	47	45	7	155	4	25	361	82
Peak-hour factor, PHF	0.86	0.86	0.86	0.91	0.91	0.91	0.85	0.85	0.85	0.89	0.89	0.89
Adj. Flow (vph)	65	50	1	27	52	49	8	182	5	28	406	92
RTOR Reduction (vph)	0	1	0	0	38	0	0	2	0	0	7	(
Lane Group Flow (vph)	65	50	0	27	63	0	8	185	0	28	491	(
Confl. Peds. (#/hr)	38		18	18		38	26		5	5		26
Confl. Bikes (#/hr)			2			1			1			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8		-	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.7	17.7		17.7	17.7		54.3	54.3		54.3	54.3	
Effective Green, g (s)	17.7	17.7		17.7	17.7		54.3	54.3		54.3	54.3	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.68	0.68		0.68	0.68	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	277	411		294	374		468	2102		700	1068	
v/s Ratio Prot		0.03			0.04			0.06			c0.31	
v/s Ratio Perm	c0.05	0.40		0.02	0.47		0.01	0.00		0.03	0.40	
v/c Ratio	0.23	0.12		0.09	0.17		0.02	0.09		0.04	0.46	
Uniform Delay, d1	25.6	24.9		24.8	25.2		4.2	4.4		4.2	6.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.55	0.48	
Incremental Delay, d2	0.4	0.1		0.1	0.2		0.1	0.1		0.1	1.3	
Delay (s)	26.0 C	25.1 C		24.9 C	25.4 C		4.2 A	4.5 A		2.4 A	4.2 A	
Level of Service	C	25.6		C	25.3		A	4.5		A	4.1	
Approach Delay (s) Approach LOS		25.6 C			25.3 C			4.5 A			4.1 A	
		C			U			A			A	
Intersection Summary												
HCM Average Control E			9.6	F	ICM Le	vel of S	ervice		Α			
HCM Volume to Capaci			0.40									
Actuated Cycle Length (80.0			ost time	()		8.0			
Intersection Capacity Ut	ilization		49.5%	10	CU Lev	el of Sei	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement EBL EBR WBL WBT WBR NBL NBT NBR SBL S	Barrio Logan CPU Existing Conditions w LRT 17: Harbor Dr & Cesar E. Chavez Pkwy Timing Plan: AM Peak												
Lane Configurationshhh			-	7	4	+	×	•	Ť	1	1	ţ	~
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Lane Configurations	ž	仲弘		J.	41.		Ϋ́	To.			4	ř
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		1.00	0.95		1.00			1.00				1.00	1.00
Frt 1.00 0.99 1.00 0.98 1.00 0.90 1.00 0.85 Fit Protected 0.95 1.00 0.95 1.00 0.98 1.00 0.98 1.00 Satd. Flow (prot) 1641 3223 1421 3194 1364 1219 1607 1370 Fit Permitted 0.95 1.00 0.63 1.00 0.63 1.00 0.89 1.00 Satd. Flow (perm) 1641 3223 1421 3194 910 1219 1453 1370 Volume (vph) 107 153 16 55 422 76 4 14 27 50 83 330 Peak-hour factor, PHF 0.84 0.84 0.81 0.81 0.80 0.80 0.80 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.93 1.00 1.05 0.93 1.06 1.05 1.05 0.93 1.06 1.05	Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.98
Fit Protected 0.95 1.00 0.95 1.00 0.95 1.00 0.98 1.00 Satd. Flow (prot) 1641 3223 1421 3194 1364 1219 1607 1370 Fit Permitted 0.95 1.00 0.63 1.00 0.63 1.00 0.89 1.00 Satd. Flow (perm) 1641 3223 1421 3194 910 1219 1453 1370 Volume (vph) 107 153 16 55 422 76 4 14 27 50 83 330 Peak-hour factor, PHF 0.84 0.84 0.81 0.81 0.80 0.80 0.80 0.92 0.92 0.92 Adj.Flow (vph) 127 182 19 68 521 94 5 18 34 54 90 329 ATOR Reduction (vph) 0 7 0 0 14 0 0 23 0 0 144 156 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Satd. Flow (prot) 1641 3223 1421 3194 1364 1219 1607 1370 Fit Permitted 0.95 1.00 0.95 1.00 0.63 1.00 0.89 1.00 Satd. Flow (perm) 1641 3223 1421 3194 910 1219 1453 1370 Volume (vph) 107 153 16 55 422 76 4 14 27 50 83 330 Peak-hour factor, PHF 0.84 0.84 0.81 0.81 0.80 0.80 0.80 0.92 0													
Fit Permitted 0.95 1.00 0.95 1.00 0.63 1.00 0.83 1.00 Satd. Flow (perm) 1641 3223 1421 3194 910 1219 1453 1370 Volume (vph) 107 153 16 55 422 76 4 14 27 50 83 330 Peak-hour factor, PHF 0.84 0.84 0.81 0.81 0.81 0.80 0.80 0.92 0.93 135 Confl. Peds. (#/hr) 11 7 0 0 14 0 0 29 0 0 0 14 16 16 16 16 16 16 16 16 16													
Satd. Flow (perm) 1641 3223 1421 3194 910 1219 1453 1370 Volume (vph) 107 153 16 55 422 76 4 14 27 50 83 330 Peak-hour factor, PHF 0.84 0.84 0.81 0.81 0.81 0.80 0.80 0.92 0.92 0.92 0.92 Adj. Flow (vph) 127 182 19 68 521 94 5 18 34 54 90 0 0 203 Lane Group Flow (vph) 127 194 0 68 601 0 5 23 0 0 144 156 Confl. Peds. (#/hr) 11 6 4 1 1 4 Confl. Bikes (#/hr) 10% 10% 27% 10% 10% 32% 32% 43% 16% 16% Turn Type Prot Prot Prot Permited Phases 15													
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$													
Peak-hour factor, PHF 0.84 0.84 0.81 0.81 0.81 0.80 0.80 0.80 0.92 0.92 0.92 0.92 Adj. Flow (vph) 127 182 19 68 521 94 5 18 34 54 90 359 RTOR Reduction (vph) 0 7 0 0 14 0 29 0 0 203 0.0 144 156 Confl. Peds. (#/hr) 127 194 0 68 601 0 5 23 0 0 144 156 Confl. Bikes (#/hr) 5 11 2 14 16% 15 16 15 16 16													
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Volume (vph)										50		
RTOR Reduction (vph) 0 7 0 0 14 0 0 29 0 0 0 203 Lane Group Flow (vph) 127 194 0 68 601 0 5 23 0 0 144 156 Confl. Peds. (#/hr) 11 6 4 1 1 4 Confl. Peds. (#/hr) 5 11 2 1 1 4 Heavy Vehicles (%) 10% 10% 27% 10% 10% 32% 32% 43% 16% 16% Turn Type Prot Prot Perm Perm Perm Perm Perm 15 16 15 16 Actuated Green, G (s) 7.7 21.7 6.6 20.6 11.6 11.6 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4 24.4													
Confl. Peds. (#/hr) 11 6 4 1 1 4 Confl. Bikes (#/hr) 5 11 2 1 1 4 Heavy Vehicles (%) 10% 10% 10% 27% 10% 32% 32% 43% 16% 16% 16% Turn Type Prot Prot Perm Perm Perm Perm Protected Phases 3 14.2.6 13 18.2.6 12 1.5.16 15.16 Actuated Green, G (s) 7.7 21.7 6.6 20.6 11.6 11.6 24.4 24.4 Actuated g/C Ratio 0.10 0.28 0.09 0.27 0.15 0.15 0.32 0.32 Clearance Time (s) 4.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Confl. Bikes (#/hr) 5 11 2 Heavy Vehicles (%) 10% 10% 10% 27% 10% 10% 32% 32% 43% 16% 16% 16% Turn Type Prot Prot Prot Perm Perm Perm Perm Protected Phases 3 14 2 6 13 18 2 6 12 15 16 15 16 Actuated Green, G (s) 7.7 21.7 6.6 20.6 11.6 11.6 24.4 24.4 Effective Green, g (s) 7.7 21.7 6.6 20.6 11.6 11.6 24.4 24.4 Actuated g/C Ratio 0.10 0.28 0.09 0.27 0.15 0.15 0.32 0.32 Clearance Time (s) 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 165 912 122 858 138 184 462 436 v/s Ratio Perm<		127	194		68	601			23			144	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $								4			1		4
Turn Type Prot Prot Perm Perm Perm Perm Protected Phases 3 14 2 6 13 18 2 6 12 1 5 16 15 16 Permitted Phases 12 1 5 16 12 1 5 16 15 16 Actuated Green, G (s) 7.7 21.7 6.6 20.6 11.6 11.6 24.4 24.4 Actuated g/C Ratio 0.10 0.28 0.09 0.27 0.15 0.15 0.32													
Protected Phases 3 14 2 6 13 18 2 6 12 15 16 Permitted Phases 12 15 16 15 16 15 16 15 16 Actuated Green, G (s) 7.7 21.7 6.6 20.6 11.6 11.6 24.4 24.4 Actuated Green, g (s) 7.7 21.7 6.6 20.6 11.6 11.6 24.4 24.4 Actuated g/C Ratio 0.10 0.28 0.09 0.27 0.15 0.15 0.32 0.30			10%	10%		10%	10%		32%	43%		16%	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $								Perm			Perm		Perm
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		3	14 2 6		13	1826			12			1 5 16	
Effective Green, g (s) 7.7 21.7 6.6 20.6 11.6 11.6 24.4 24.4 Actuated g/C Ratio 0.10 0.28 0.09 0.27 0.15 0.15 0.32 0.36 0.30											1 5 16		
Actuated g/C Ratio 0.10 0.28 0.09 0.27 0.15 0.15 0.32 0.31 0.30 0.31 0.31 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 <													
Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 165 912 122 858 138 184 462 436 v/s Ratio Prot c0.08 0.06 0.05 c0.19 0.02 0.01 0.10 c0.11 v/s Ratio Perm 0.01 0.05 0.04 0.13 0.31 0.36 Uniform Delay, d1 33.6 21.0 33.6 25.3 27.8 28.2 19.8 20.1 Progression Factor 1.00 1.00 1.00 1.00 1.00 2.32 Incremental Delay, d2 19.2 0.1 5.4 2.6 0.1 0.3 0.4 0.5 Delay (s) 52.8 21.1 39.1 27.9 28.5 20.1 47.1 Level of Service D C D C C D D D D D D D D D D D D D D <td></td> <td></td> <td>0.28</td> <td></td> <td></td> <td>0.27</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.32</td> <td>0.32</td>			0.28			0.27						0.32	0.32
Lane Grp Cap (vph) 165 912 122 858 138 184 462 436 v/s Ratio Prot c0.08 0.06 0.05 c0.19 0.02 0.02 0.10 c0.10 c0.11 0.10 c0.11 0.10 c0.11 0.10 c0.11 0.10 c0.11 0.10 c0.11 0.10 c0.11 0.23 0.33 0.34 0.35 0.31 0.36 25.3 27.8 28.2 19.8 20.1 Progression Factor 1.00 1.00 1.00 1.00 1.00 2.32 Incremental Delay, d2 19.2 0.1 5.4 2.6 0.1 0.3 0.4 0.5 Delay (s) 52.8 21.1 39.1 27.9 28.5 20.1 47.1 Level of Service D C D C C C D Approach Delay (s) 33.4 29.0 28.4 39.4													
v/s Ratio Prot c0.08 0.06 0.05 c0.19 0.02 v/s Ratio Perm 0.01 0.10 c0.11 v/c Ratio 0.77 0.21 0.56 0.70 0.04 0.13 0.31 0.36 Uniform Delay, d1 33.6 21.0 33.6 25.3 27.8 28.2 19.8 20.1 Progression Factor 1.00 1.00 1.00 1.00 1.00 2.32 Incremental Delay, d2 19.2 0.1 5.4 2.6 0.1 0.3 0.4 0.5 Delay (s) 52.8 21.1 39.1 27.9 28.5 20.1 47.1 Level of Service D C D C C D D Approach Delay (s) 33.4 29.0 28.4 39.4													
v/s Ratio Perm 0.01 0.10 c0.11 v/c Ratio 0.77 0.21 0.56 0.70 0.04 0.13 0.31 0.36 Uniform Delay, d1 33.6 21.0 33.6 25.3 27.8 28.2 19.8 20.1 Progression Factor 1.00 1.00 1.00 1.00 1.00 2.32 Incremental Delay, d2 19.2 0.1 5.4 2.6 0.1 0.3 0.4 0.5 Delay (s) 52.8 21.1 39.1 27.9 28.5 20.1 47.1 Level of Service D C D C C D D Approach Delay (s) 33.4 29.0 28.4 39.4 39.4								138				462	436
v/c Ratio 0.77 0.21 0.56 0.70 0.04 0.13 0.31 0.36 Uniform Delay, d1 33.6 21.0 33.6 25.3 27.8 28.2 19.8 20.1 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 2.32 Incremental Delay, d2 19.2 0.1 5.4 2.6 0.1 0.3 0.4 0.5 Delay (s) 52.8 21.1 39.1 27.9 27.9 28.5 20.1 47.1 Level of Service D C D C C D <td></td> <td>c0.08</td> <td>0.06</td> <td></td> <td>0.05</td> <td>c0.19</td> <td></td> <td></td> <td>0.02</td> <td></td> <td></td> <td></td> <td></td>		c0.08	0.06		0.05	c0.19			0.02				
Uniform Delay, d1 33.6 21.0 33.6 25.3 27.8 28.2 19.8 20.1 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 2.32 Incremental Delay, d2 19.2 0.1 5.4 2.6 0.1 0.3 0.4 0.5 Delay (s) 52.8 21.1 39.1 27.9 27.9 28.5 20.1 47.1 Level of Service D C D C C C D Approach Delay (s) 33.4 29.0 28.4 39.4													
Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 2.32 Incremental Delay, d2 19.2 0.1 5.4 2.6 0.1 0.3 0.4 0.5 Delay (s) 52.8 21.1 39.1 27.9 27.9 28.5 20.1 47.1 Level of Service D C D C C C D Approach Delay (s) 33.4 29.0 28.4 39.4													
Incremental Delay, d2 19.2 0.1 5.4 2.6 0.1 0.3 0.4 0.5 Delay (s) 52.8 21.1 39.1 27.9 27.9 28.5 20.1 47.1 Level of Service D C D C C C D													
Delay (s) 52.8 21.1 39.1 27.9 27.9 28.5 20.1 47.1 Level of Service D C D C C C D <thd< td=""><td>U</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></thd<>	U												
Level of Service D C D C C D <thd< th=""> D D</thd<>													
Approach Delay (s) 33.4 29.0 28.4 39.4													
		D			D			C					D
Approach LOS C C D													
	Approach LOS		C			C			C			D	
Intersection Summary	Intersection Summary												
HCM Average Control Delay 33.2 HCM Level of Service C	HCM Average Control D	Delay		33.2	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacity ratio 0.55				0.55									
Actuated Cycle Length (s) 76.7 Sum of lost time (s) 24.0	Actuated Cycle Length (s)		76.7	S	Sum of I	ost time	(s)		24.0			
Intersection Capacity Utilization 50.7% ICU Level of Service A		ilizatior	า		10	CU Lev	el of Sei	rvice		А			
Analysis Period (min) 15				15									

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Barrio Logan CPU 18: Logan Ave & I-5	SB OI	n-ram)					Ex			tions w Plan: AM	
	۶	-	•	4	+	×	1	1	۲	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	ţ,		ž	Þ				r.			
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	251	93	1	0	60	53	0	0	2	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.74	0.74	0.74	0.50	0.50	0.50	0.25	0.25	0.25
Hourly flow rate (vph)	279	103	1	0	81	72	0	0	4	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		667										
pX, platoon unblocked												
vC, conflicting volume	153			104			743	814	104	782	779	117
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	153			104			743	814	104	782	779	117
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	80			100			100	100	100	100	100	100
cM capacity (veh/h)	1428			1487			281	251	951	264	263	935
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1							
Volume Total	279	104	0	153	4							
Volume Left	279	0	0	0	0							
Volume Right	0	1	0	72	4							
cSH	1428	1700	1700	1700	951							
Volume to Capacity	0.20	0.06	0.00	0.09	0.00							
Queue Length 95th (ft)	18	0	0	0	0							
Control Delay (s)	8.1	0.0	0.0	0.0	8.8							
Lane LOS	А				А							
Approach Delay (s)	5.9		0.0		8.8							
Approach LOS					А							
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Ut	ilization		23.9%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU 19: National Ave & S	SD 75	Off ro	mn				Existing Conditions w LRT Timing Plan: AM Peak
19. National Ave a v	<u>,</u>		•	×	4	~	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		4	4		7	74	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	0	67	142	0	16	156	
Peak Hour Factor	0.84	0.84	0.87	0.87	0.86	0.86	
Hourly flow rate (vph)	0	80	163	0	19	181	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				Т	WLTL		
Median storage veh)					1		
Upstream signal (ft)		1100	875				
pX, platoon unblocked							
vC, conflicting volume	163				243	163	
vC1, stage 1 conf vol					163		
vC2, stage 2 conf vol					80		
vCu, unblocked vol	163				243	163	
tC, single (s)	4.1				6.4	6.2	
tC, 2 stage (s)					5.4		
tE (c)	22				35	33	

(r (s)	2.2				3.5	3.3				
p0 queue free %	100				98	79				
cM capacity (veh/h)	1415				749	881				
Direction, Lane #	EB 1	WB 1	SB 1	SB 2						
Volume Total	80	163	19	181						
Volume Left	0	0	19	0						
Volume Right	0	0	0	181						
cSH	1700	1700	749	881						
Volume to Capacity	0.05	0.10	0.02	0.21						
Queue Length 95th (ft)	0	0	2	19						
Control Delay (s)	0.0	0.0	9.9	10.1						
Lane LOS			А	В						
Approach Delay (s)	0.0	0.0	10.1							
Approach LOS			В							
Intersection Summary										
Average Delay			4.6							
Intersection Capacity Ut	ilization		23.8%	- 10	CU Leve	l of Servi	ce	ŀ	۹.	
Analysis Period (min)			15							

Barrio Logan CPU Existing Conditions w LRT 20: National Ave & Evans St Timing Plan: AM Peak													
	۶	-	\mathbf{r}	4	+	×	1	1	1	1	ţ	4	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ň	Т.		J.	Þ			4			4.		
Sign Control		Free			Free			Stop			Stop		
Grade		0%			0%			0%			0%		
Volume (veh/h)	7	65	9	18	123	16	10	26	10	5	8	16	
Peak Hour Factor	0.78	0.78	0.78	0.80	0.80	0.80	0.82	0.82	0.82	0.81	0.81	0.81	
Hourly flow rate (vph)	9	83	12	22	154	20	12	32	12	6	10	20	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type								None			None		
Median storage veh)													
Upstream signal (ft)		1314			661								
pX, platoon unblocked													
vC, conflicting volume	174			95			330	326	89	338	322	164	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	174			95			330	326	89	338	322	164	
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	99			98			98	95	99	99	98	98	
cM capacity (veh/h)	1403			1499			591	580	969	573	583	881	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1							
Volume Total	9	95	22	174	56	36							
Volume Left	9	0	22	0	12	6							
Volume Right	0	12	0	20	12	20							
cSH	1403	1700	1499	1700	638	714							
Volume to Capacity	0.01	0.06	0.02	0.10	0.09	0.05							
Queue Length 95th (ft)	0	0	1	0	7	4							
Control Delay (s)	7.6	0.0	7.4	0.0	11.2	10.3							
Lane LOS	А		А		В	В							
Approach Delay (s)	0.7		0.9		11.2	10.3							
Approach LOS					В	В							
Intersection Summary													
Average Delay			3.1										
Intersection Capacity Ut	ilization		18.0%	10	CU Lev	el of Ser	vice		А				
Analysis Period (min)			15										

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Barrio Logan CPU Existing Conditions w LRT 21: Newton Ave & Evans St Timing Plan: AM Peak												
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
ane Configurations		4			4			et.			44	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	12	33	9	3	24	8	10	19	6	1	8	1
Peak Hour Factor	0.96	0.96	0.96	0.58	0.58	0.58	0.67	0.67	0.67	0.72	0.72	0.7
Hourly flow rate (vph)	12	34	9	5	41	14	15	28	9	1	11	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
oX, platoon unblocked												
C, conflicting volume	55			44			152	130	39	146	127	4
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
Cu, unblocked vol	55			44			152	130	39	146	127	4
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.
p0 queue free %	99			100			98	96	99	100	99	9
cM capacity (veh/h)	1550			1565			781	752	1033	785	754	102
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	56	60	52	36								
Volume Left	12	5	15	1								
Volume Right	9	14	9	24								
cSH	1550	1565	798	911								
Volume to Capacity	0.01	0.00	0.07	0.04								
Queue Length 95th (ft)	1	0	5	3								
Control Delay (s)	1.7	0.6	9.8	9.1								
Lane LOS	А	А	А	А								
Approach Delay (s)	1.7	0.6	9.8	9.1								
Approach LOS			А	А								
Intersection Summary												
Average Delay			4.8									
Intersection Capacity Ut	ilizatior	1	18.5%	10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									

	s St						8
	٦	-	+	•	1	1	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		\$	P		¥		
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	11	52	114	7	5	14	
Peak Hour Factor	0.74	0.74	0.83	0.83	0.75	0.75	
Hourly flow rate (vph)	15	70	137	8	7	19	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage veh)							
Upstream signal (ft)		1318					
pX, platoon unblocked							
vC, conflicting volume	146				242	142	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	146				242	142	
tC, single (s)	4.1				6.4	6.2	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	99				99	98	
cM capacity (veh/h)	1436				739	906	
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	85	146	25				
Volume Left	15	0	7				
Volume Right	0	8	19				
cSH	1436	1700	855				
Volume to Capacity	0.01	0.09	0.03				
Queue Length 95th (ft)	1	0	2				
Control Delay (s)	1.4	0.0	9.3				
Lane LOS	A		A				
Approach Delay (s)	1.4	0.0	9.3				
Approach LOS		2.0	A				
Intersection Summary							
Average Delay			1.4				
Intersection Capacity Ut	ilization	1	22.2%	10	CULeve	el of Service	A
Analysis Period (min)			15				~

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Barrio Logan CPU Existing Conditions w LRT 23: Logan Ave & Sampson St Timing Plan: AM Peak													
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ň	ţ,		26	Þ			10			1		
Sign Control		Stop			Stop			Stop			Stop		
Volume (vph)	90	125	28	17	62	50	62	112	33	62	82	14	
Peak Hour Factor	0.88	0.88	0.88	0.87	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	102	142	32	20	71	57	67	122	36	67	89	15	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	102	174	20	129	225	172							
Volume Left (vph)	102	0	20	0	67	67							
Volume Right (vph)	0	32	0	57	36	15							
Hadj (s)	0.53	-0.09	0.53	-0.28	0.00	0.06							
Departure Headway (s)	6.4	5.7	6.6	5.7	5.3	5.5							
Degree Utilization, x	0.18	0.28	0.04	0.21	0.33	0.26							
Capacity (veh/h)	530	591	505	577	634	609							
Control Delay (s)	9.6	9.7	8.6	9.0	10.9	10.4							
Approach Delay (s)	9.7		9.0		10.9	10.4							
Approach LOS	А		A		В	В							
Intersection Summary													
Delay			10.0										
HCM Level of Service			В										
Intersection Capacity Uti	ilization	l i	34.3%	10	CU Lev	el of Ser	vice		А				
Analysis Period (min)			15										

										,		,
	•	→	\mathbf{r}	1	•	•	1	Ť	1	>	Ŧ	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBI
Lane Configurations	۲	Ţ.		76	To			40			1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	0.98	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.97			0.97			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1742	1801		1764	1790			1780			1750	
Flt Permitted	0.68	1.00		0.70	1.00			0.98			0.95	
Satd. Flow (perm)	1240	1801		1306	1790			1758			1681	
Volume (vph)	13	50	12	48	94	24	7	41	16	19	36	2
Peak-hour factor, PHF	0.75	0.75	0.75	0.94	0.94	0.94	0.84	0.84	0.84	0.80	0.80	0.8
Adj. Flow (vph)	17	67	16	51	100	26	8	49	19	24	45	3
RTOR Reduction (vph)	0	13	0	0	18	0	0	8	0	0	12	
Lane Group Flow (vph)	17	70	0	51	108	0	0	68	0	0	88	
Confl. Peds. (#/hr)	17		3	3		17	13		14	14		1
Confl. Bikes (#/hr)						1			1			
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8	Ū		2	-		6	U U	
Actuated Green, G (s)	9.5	9.5		9.5	9.5		-	26.4		Ŭ	26.4	
Effective Green, g (s)	9.5	9.5		9.5	9.5			26.4			26.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22			0.60			0.60	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	268	390		283	387			1057			1011	
v/s Ratio Prot	200	0.04		200	c0.06			1057			1011	
v/s Ratio Perm	0.01	0.04		0.04	0.00			0.04			c0.05	
v/c Ratio	0.01	0.18		0.18	0.28			0.04			0.09	
Uniform Delay, d1	13.7	14.0		14.0	14.3			3.6			3.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.2		0.3	0.4			0.0			0.0	
Delay (s)	13.8	14.3		14.3	14.7			3.7			3.7	
Level of Service	13.8 B	14.3 B		14.3 B	14.7 B			3.7 A			3.7 A	
	В	ы 14.2		В	В 14.6			3.7			3.7	
Approach Delay (s) Approach LOS		14.2 B			14.0 B			3.7 A			3.7 A	
											~~~~	
Intersection Summary			40.0			1.1.6			_			
HCM Average Control D			10.3	F	ICM Le	vel of S	ervice		В			
HCM Volume to Capacit			0.14									
Actuated Cycle Length (			43.9			ost time	· · ·		8.0			
Intersection Capacity Ut	ilization		31.5%	10	CU Lev	el of Sei	vice		A			
Analysis Period (min)			15									

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25: Newton Ave & S	amps	on St							Т	iming F	lan: AN	l Peak
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		¢.			4			44			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	15	20	10	2	17	8	4	35	7	3	66	22
Peak Hour Factor	0.86	0.86	0.86	0.68	0.68	0.68	0.82	0.82	0.82	0.84	0.84	0.84
Hourly flow rate (vph)	17	23	12	3	25	12	5	43	9	4	79	26
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	52	40	56	108								
Volume Left (vph)	17	3	5	4								
Volume Right (vph)	12	12	9	26								
Hadj (s)	-0.03	-0.13	-0.04	-0.10								
Departure Headway (s)	4.3	4.2	4.2	4.1								
Degree Utilization, x	0.06	0.05	0.06	0.12								
Capacity (veh/h)	807	822	831	863								
Control Delay (s)	7.5	7.4	7.5	7.6								
Approach Delay (s)	7.5	7.4	7.5	7.6								
Approach LOS	A	А	Α	Α								
Intersection Summary												
Delay			7.5									
HCM Level of Service			А									
ntersection Capacity Ut	ilizatior	n	21.7%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 26: Main St & Samp	Barrio Logan CPU     Existing Conditions w LRT       26: Main St & Sampson St     Timing Plan: AM Peak												
	≯	+	*	4	ł	×	≺	1	1	1	Ŧ	~	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		\$			4			10			1		
Sign Control		Stop			Stop			Stop			Stop		
Volume (vph)	5	33	12	53	115	16	14	31	35	10	59	15	
Peak Hour Factor	0.89	0.89	0.89	0.85	0.85	0.85	0.80	0.80	0.80	0.88	0.88	0.88	
Hourly flow rate (vph)	6	37	13	62	135	19	18	39	44	11	67	17	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1									
Volume Total (vph)	56	216	100	95									
Volume Left (vph)	6	62	18	11									
Volume Right (vph)	13	19	44	17									
Hadj (s)	-0.09	0.04	-0.19	-0.05									
Departure Headway (s)	4.5	4.5	4.5	4.6									
Degree Utilization, x	0.07	0.27	0.12	0.12									
Capacity (veh/h)	748	766	752	725									
Control Delay (s)	7.9	9.1	8.1	8.3									
Approach Delay (s)	7.9	9.1	8.1	8.3									
Approach LOS	Α	А	А	А									
Intersection Summary													
Delay			8.6										
HCM Level of Service			А										
Intersection Capacity Ut	ilizatior	ı	33.8%	10	CU Lev	el of Ser	vice		А				
Analysis Period (min)			15										

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Barrio Logan CPU 27: Harbor Dr & San	npson	St						E>			tions w Plan: AM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	仲弘		'n,	<b>†</b> I>			1			1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	1.00			0.96			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1770	3403		1770	3520			1752			1772	
Flt Permitted	0.95	1.00		0.95	1.00			0.96			1.00	
Satd. Flow (perm)	1770	3403		1770	3520			1686			1766	
Volume (vph)	10	234	28	75	517	12	14	61	38	3	75	32
Peak-hour factor, PHF	0.87	0.87	0.87	0.88	0.88	0.88	0.94	0.94	0.94	0.95	0.95	0.95
Adj. Flow (vph)	11	269	32	85	588	14	15	65	40	3	79	34
RTOR Reduction (vph)	0	7	0	0	1	0	0	16	0	0	12	0
Lane Group Flow (vph)	11	294	0	85	601	0	0	104	0	0	104	0
Confl. Peds. (#/hr)			15			29	7		4	4		7
Confl. Bikes (#/hr)			2			5			6			14
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases		14 2 6			1826			12			16 1 5	
Permitted Phases							12			16 1 5		
Actuated Green, G (s)	1.1	33.9		6.3	39.1			12.2			24.6	
Effective Green, q (s)	1.1	33.9		6.3	39.1			12.2			24.6	
Actuated g/C Ratio	0.01	0.38		0.07	0.44			0.14			0.28	
Clearance Time (s)	4.0			4.0				4.0				
Vehicle Extension (s)	3.0			3.0				3.0				
Lane Grp Cap (vph)	22	1299		126	1550			232			489	
v/s Ratio Prot	0.01	0.09		c0.05	c0.17			202			100	
v/s Ratio Perm	0.01	0.00		00.00	00111			c0.06			c0.06	
v/c Ratio	0.50	0.23		0.67	0.39			0.45			0.21	
Uniform Delay, d1	43.6	18.6		40.2	16.8			35.2			24.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.06	
Incremental Delay, d2	16.8	0.1		13.4	0.2			1.4			0.2	
Delay (s)	60.3	18.7		53.6	16.9			36.6			26.3	
Level of Service	E	В		D	В			D			С	
Approach Delay (s)		20.1			21.5			36.6			26.3	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM Average Control D	elav		23.1	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit			0.38		. 5 20				5			
Actuated Cycle Length (			88.8	5	Sum of I	ost time	(s)		20.0			
Intersection Capacity Ut		า	43.8%			el of Sei	· · /		A			
Analysis Period (min)			15									
c Critical Lane Group												

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Barrio Logan CPUExisting Conditions w LR128: National Ave & Sicard StTiming Plan: AM Peak												
	۶	-	$\mathbf{r}$	4	-	•	٩	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	ţ,			\$			1			1	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	79	7	27	155	3	13	25	12	4	18	11
Peak Hour Factor	0.73	0.73	0.73	0.83	0.83	0.83	0.69	0.69	0.69	0.82	0.82	0.82
Hourly flow rate (vph)	5	108	10	33	187	4	19	36	17	5	22	13
Pedestrians		7			11			3			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		641										
pX, platoon unblocked												
vC, conflicting volume	191			121			412	383	127	420	386	197
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	191			121			412	383	127	420	386	197
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			96	93	98	99	96	98
cM capacity (veh/h)	1381			1463			509	534	912	489	532	839
,	ED 4				00.4							
Direction, Lane #	EB 1		WB 1	NB 1	SB 1							
Volume Total	5	118	223	72	40							
Volume Left	5	0	33	19	5							
Volume Right	0	10	4	17	13							
cSH	1381	1700	1463	584	599							
Volume to Capacity	0.00	0.07	0.02	0.12	0.07							
Queue Length 95th (ft)	0	0	2	11	5							
Control Delay (s)	7.6	0.0	1.3	12.0	11.4							
Lane LOS	A		A	B	В							_
Approach Delay (s)	0.3		1.3	12.0	11.4							
Approach LOS				В	В							
Intersection Summary												
Average Delay			3.6 31.0%									
Intersection Capacity Ut	10	CU Lev	el of Ser	vice		А						
Analysis Period (min)			15									

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Barrio Logan CPU 29: National Ave & 2	26th S	t						E>	disting T		ions w lan: AM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ĥ		×	Þ			4.0			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	66	10	36	191	48	7	18	15	43	8	1
Peak Hour Factor	0.94	0.94	0.94	0.85	0.85	0.85	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	3	70	11	42	225	56	9	23	19	56	10	1
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	3	81	42	281	52	68						
Volume Left (vph)	3	0	42	0	9	56						
Volume Right (vph)	0	11	0	56	19	1						
Hadj (s)	0.53	-0.06	0.53	-0.11	-0.16	0.19						
Departure Headway (s)	5.6	5.0	5.4	4.8	4.8	5.1						
Degree Utilization, x	0.00	0.11	0.06	0.37	0.07	0.10						
Capacity (veh/h)	617	685	642	735	692	650						
Control Delay (s)	7.5	7.5	7.6	9.4	8.1	8.6						
Approach Delay (s)	7.5		9.2		8.1	8.6						
Approach LOS	А		A		A	А						
Intersection Summary												
Delay			8.7									
HCM Level of Service			А									
Intersection Capacity Uti	ilization	l.	30.1%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 30: National Ave & I	-5 SB	Existing Conditions w LR Timing Plan: AM Pea					
	-	>	•	+	•	~	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	1	LDIX	VVDL	414	NDL	75	
Sign Control	Free			Free	Stop	r	
Grade	0%			0%	0%		
Volume (veh/h)	110	4	42	224	28	149	
Peak Hour Factor	0.92	0.92	0.88	0.88	0.76	0.76	
Hourly flow rate (vph)	120	4	48	255	37	196	
Pedestrians	1		10	200	8	100	
Lane Width (ft)	12.0				12.0		
Walking Speed (ft/s)	4.0				4.0		
Percent Blockage	0				1		
Right turn flare (veh)							
Median type					None		
Median storage veh)							
Upstream signal (ft)				670			
pX, platoon unblocked							
vC, conflicting volume			132		353	130	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			132		353	130	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			97		94	78	
cM capacity (veh/h)			1441		593	890	
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2		
Volume Total	124	133	170	37	196		
Volume Left	0	48	0	37	0		
Volume Right	4	0	0	0	196		
cSH	1700	1441	1700	593	890		
Volume to Capacity	0.07	0.03	0.10	0.06	0.22		
Queue Length 95th (ft)	0	3	0	5	21		
Control Delay (s)	0.0	2.9	0.0	11.5	10.2		
Lane LOS		A		В	В		
Approach Delay (s)	0.0	1.3		10.4			
Approach LOS				В			
Intersection Summary							
Average Delay			4.3				
Intersection Capacity Utilization 23.7%				10	CU Leve	el of Service	А
Analysis Period (min)			15				

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Barrio Logan CPU 31: Main St & 26th S	St							E>	disting T		tions w Plan: AM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$		24	+	7		1	٣		1.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	50	7	59	148	26	11	17	39	16	11	13
Peak Hour Factor	0.88	0.88	0.88	0.87	0.87	0.87	0.60	0.60	0.60	0.67	0.67	0.67
Hourly flow rate (vph)	11	57	8	68	170	30	18	28	65	24	16	19
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1					
Volume Total (vph)	76	68	170	30	47	65	60					
Volume Left (vph)	11	68	0	0	18	0	24					
Volume Right (vph)	8	0	0	30	0	65	19					
Hadj (s)	0.00	0.94	0.03	-0.67	0.11	0.05	-0.08					
Departure Headway (s)	4.5	5.8	4.9	3.2	4.8	3.2	4.6					
Degree Utilization, x	0.10	0.11	0.23	0.03	0.06	0.06	0.08					
Capacity (veh/h)	766	605	721	1121	696	1121	727					
Control Delay (s)	8.0	8.3	8.1	5.1	8.2	6.4	8.0					
Approach Delay (s)	8.0	7.8			7.1		8.0					
Approach LOS	A	A			A		A					
Intersection Summary												
Delay			7.7									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	ı	28.3%	10	CU Lev	el of Se	rvice		А			
Analysis Period (min)			15									

Barrio Logan CPU 32: Harbor Dr & Sch	nlev St							Ex			tions w Plan: AM	
	٦	-	$\mathbf{r}$	4	+	•	•	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	仲弘			竹子						4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0						4.0	
Lane Util. Factor	1.00	0.95			0.95						1.00	
Frpb, ped/bikes	1.00	1.00			1.00						0.98	
Flpb, ped/bikes	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			1.00						0.90	
Flt Protected	0.95	1.00			1.00						0.99	
Satd. Flow (prot)	1543	3539			3522						1510	
Flt Permitted	0.95	1.00			1.00						0.99	
Satd. Flow (perm)	1543	3539			3522						1510	
Volume (vph)	58	200	0	0	531	17	0	0	0	12	12	70
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.25	0.25	0.25	0.78	0.78	0.78
Adj. Flow (vph)	63	217	0	0	584	19	0	0	0	15	15	90
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	69	C
Lane Group Flow (vph)	63	217	0	0	601	0	0	0	0	0	51	C
Confl. Peds. (#/hr)			8	8					2	2		
Confl. Bikes (#/hr)									5			11
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot									Perm		
Protected Phases		1826			14 2 6					1 01111	11 1 5	
Permitted Phases	10	1020			1120					11 1 5	1110	
Actuated Green, G (s)	5.5	45.4			31.9						18.9	
Effective Green, g (s)	5.5	45.4			31.9						18.9	
Actuated g/C Ratio	0.07	0.57			0.40						0.24	
Clearance Time (s)	4.0	0.01			0.10						0.21	
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	106	2001			1399						355	
v/s Ratio Prot	c0.04	0.06			c0.17						000	
v/s Ratio Perm	0.04	0.00			00.17						0.03	
v/c Ratio	0.59	0.11			0.43						0.14	
Uniform Delay, d1	36.3	8.1			17.6						24.3	
Progression Factor	1.00	1.00			1.00						1.49	
Incremental Delay, d2	8.6	0.0			0.2						0.2	
Delay (s)	45.0	8.1			17.8						36.5	
Level of Service	40.0 D	0.1			B						00.0 D	
Approach Delay (s)	U	16.4			17.8			0.0			36.5	
Approach LOS		10.4 B			В			A			00.0 D	
		U			D			~			U	
Intersection Summary												
HCM Average Control E			19.6	F	ICM Lev	vel of S	ervice		В			
HCM Volume to Capaci			0.35	-								
Actuated Cycle Length	· /		80.3			ost time	( )		24.0			
Intersection Capacity Ut	tilization	n -	40.8%	10	CU Leve	el of Se	rvice		A			
Analysis Period (min)			15									
c Critical Lane Group												

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Barrio Logan CPU 33: National Ave & 2	28th St	t						E		Condit Timing F		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ተተ	r.	36	ħ			\$	ř		4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	0.98			1.00	0.85		0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583	1299	1834			1751	1509		1625	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.77	1.00		0.97	
Satd. Flow (perm)	1770	3539	1583	1299	1834			1365	1509		1588	
Volume (vph)	106	184	18	71	422	49	33	83	25	34	166	307
Peak-hour factor, PHF	0.80	0.80	0.80	0.77	0.77	0.77	0.84	0.84	0.84	0.92	0.92	0.92
Adj. Flow (vph)	132	230	22	92	548	64	39	99	30	37	180	334
RTOR Reduction (vph)	0	0	13	0	3	0	0	0	19	0	38	0
Lane Group Flow (vph)	132	230	9	92	609	0	0	138	11	0	513	0
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2	-	-	6	
Permitted Phases			4	10.1	00.4		2	07.4	2	6	07.4	
Actuated Green, G (s)	9.7	38.7	38.7	10.1	39.1			37.4	37.4		37.4	
Effective Green, g (s)	9.7	38.7	38.7	10.1	39.1			37.4	37.4		37.4	
Actuated g/C Ratio	0.10 4.0	0.39	0.39	0.10	0.40			0.38	0.38		0.38	
Clearance Time (s)											4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)	175	1395	624	134	730			520	575		605	
v/s Ratio Prot	c0.07	0.06	0.04	0.07	c0.33			0.40	0.04		-0.00	
v/s Ratio Perm v/c Ratio	0.75	0.16	0.01 0.01	0.69	0.83			0.10	0.01		c0.32 0.85	
Uniform Delay, d1	43.1	19.3	18.1	42.5	26.6			20.9	19.0		27.8	
Progression Factor	43.1	1.00	1.00	42.5	1.00			1.00	1.00		1.00	
Incremental Delay, d2	16.7	0.1	0.0	13.6	8.1			0.3	0.0		10.6	
Delay (s)	59.8	19.3	18.1	56.2	34.8			21.2	19.0		38.4	
Level of Service	55.0 E	13.3 B	B	50.2	04.0 C			21.2 C	B		00.4 D	
Approach Delay (s)		33.2	U	-	37.6			20.8	U		38.4	
Approach LOS		C			D			C			D	
Intersection Summary												
HCM Average Control [			35.3	F	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci			0.79									
Actuated Cycle Length			98.2	5	Sum of I	ost time	e (s)		8.0			
Intersection Capacity U	ilization		77.2%	I	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane	Group
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Average Configurations         EBL         EBR         WBL         WBT         WBR         NBL         NBT         NBR         SBL         SBR           Ideal Flow (vphp)         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         190	Barrio Logan CPU 34: Boston Ave & 28	8th St							E			tions w Plan: AM	
Lane Configurations       N       Low       N       N       H       P       N       H       P       N       H       P       N       H       F       H       H       F       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H       H		≯	+	*	•	Ļ	*	•	1	*	×	ţ	~
Ideal Flow (vphpl)       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1			EBT	EBR		WBT	WBR	NBL				SBT	SBR
Total Lost time (s)       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0<		7	T.		74	To		14	44	r	7	41.	
Lane Util. Factor       1.00       1.00       1.00       1.00       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       1.00       0.95       1.00       1.00       0.95       1.00       1.00       0.95       1.00       1.00       0.95       1.00       1.00       0.95       1.00       1.00       0.03       3.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Frt       1.00       0.97       1.00       0.88       1.00       1.00       0.85       1.00       0.99         Fit Protected       0.85       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       1.92       0.07       0.76       0.76       0.76       0.76       0.76       0.76       0.76       0.76       0.76       0.76       0.76       0.76       0.76       0.76       0.76       0.0       0.41	Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Fit Protected       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00         Satd. Flow (prot)       1687       1731       1687       1565       1770       3471       1583       1770       3482         Fith Permitted       0.71       1.00       0.95       1.00       1.00       0.95       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       0.055       1.00       1.22       62.3       31         Peak-bot reptory       28       64       13       11       22       84       10       139       708       38       35       27       1       6       100       100       100       100       100       100 <td>Lane Util. Factor</td> <td>1.00</td> <td>1.00</td> <td></td> <td>1.00</td> <td>1.00</td> <td></td> <td>1.00</td> <td>0.95</td> <td>1.00</td> <td>1.00</td> <td>0.95</td> <td></td>	Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Satd. Flow (prot)       1687       1731       1687       1565       1770       3471       1583       1770       3482         Fit Permitted       0.71       1.00       0.71       1.00       0.95       1.00       0.095       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       1.00       0.89       0.89       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.89       100       0.0       1.00	Frt	1.00	0.97		1.00	0.88		1.00	1.00	0.85	1.00	0.99	
Fit Permitted       0.71       1.00       0.95       1.00       1.00       0.95       1.00         Satd. Flow (perm)       1268       1731       1268       1565       1770       3471       1583       1770       3482         Volume (vph)       22       50       10       8       17       64       9       377       90       122       623       31         Peak-hour factor, PHF       0.78       0.78       0.76       0.76       0.76       0.89       0.89       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.89       0.89       0.89       0.89       0.89       0.89       0.89       0.89       0.80       0.89       0.89       0.80       0.80       0.70       0.70       7%       7% <t< td=""><td>Flt Protected</td><td>0.95</td><td>1.00</td><td></td><td>0.95</td><td>1.00</td><td></td><td>0.95</td><td>1.00</td><td>1.00</td><td>0.95</td><td>1.00</td><td></td></t<>	Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)         1268         1731         1268         1565         1770         3471         1583         1770         3482           Volume (vph)         22         50         10         8         17         64         9         377         90         122         623         31           Peak-hour factor, PHF         0.78         0.78         0.76         0.76         0.89         0.89         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.82         26         740         0         Heavy Vehicles (%)         7%         7%         7%         7%         7%         2%         4%         2%         2%         2%         2%         2%         2%         2%         2%         2%         2%         2%         2%         2%         2%         4%	Satd. Flow (prot)	1687	1731		1687	1565		1770	3471	1583	1770	3482	
Volume (vph)         22         50         10         8         17         64         9         377         90         122         623         31           Peak-hour factor, PHF         0.78         0.78         0.76         0.76         0.76         0.89         0.89         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.85         0.4         0         Haury Vehicles (yhy)         0         44         0         1.0         0         0         0         0         0         142         60         139         740         0           Heary Vehicles (%)         7%         7%         7%         7%         7%         7%         7%         7%         2%	Flt Permitted	0.71	1.00		0.71	1.00		0.95	1.00	1.00	0.95	1.00	
Peak-hour factor, PHF         0.78         0.78         0.76         0.76         0.76         0.89         0.89         0.89         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88	Satd. Flow (perm)	1268	1731		1268	1565		1770	3471	1583	1770	3482	
Adj. Flow (vph)       28       64       13       11       22       84       10       424       101       139       708       35         RTOR Reduction (vph)       0       12       0       0       76       0       0       41       0       3       0         Lane Group Flow (vph)       28       65       0       11       30       0       10       424       60       139       740       0         Heavy Vehicles (%)       7%       7%       7%       7%       7%       7%       7%       2%       3%       2%       3%       2%         Turn Type       Perm       Perm       Perm       Prot       Perm       Prot       Perm       Perm       Perm       10       6.4       40.4         Effective Green, g (s)       5.6       5.6       5.6       5.6       0.9       34.9       34.9       6.4       40.4         Actuated G/C Ratio       0.10       0.10       0.10       0.02       0.59       0.59       0.11       0.69         Clearance Time (s)       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0         Vehicle Extension (s)	Volume (vph)	22	50	10	8	17	64	9	377	90	122	623	31
Adj. Flow (vph)       28       64       13       11       22       84       10       424       101       139       708       35         RTOR Reduction (vph)       0       12       0       0       76       0       0       41       0       3       0         Lane Group Flow (vph)       28       65       0       11       30       0       10       424       60       139       740       0         Heavy Vehicles (%)       7%       7%       7%       7%       7%       7%       7%       2%       3%       2%       3%       2%         Turn Type       Perm       Perm       Perm       Prot       Perm       Prot       Perm       Perm       Perm       10       6.4       40.4         Effective Green, g (s)       5.6       5.6       5.6       5.6       0.9       34.9       34.9       6.4       40.4         Actuated G/C Ratio       0.10       0.10       0.10       0.02       0.59       0.59       0.11       0.69         Clearance Time (s)       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0         Vehicle Extension (s)		0.78	0.78	0.78	0.76	0.76	0.76	0.89	0.89	0.89	0.88	0.88	0.88
RTOR Reduction (vph)       0       12       0       0       76       0       0       41       0       3       0         Lane Group Flow (vph)       28       65       0       11       30       0       10       424       60       139       740       0         Heavy Vehicles (%)       7%       7%       7%       7%       7%       7%       2%       4%       2%       2%       3%       2%         Turn Type       Perm       Perm       Perm       Prot       Perm       Prot       Perm       Prot       Perm       Prot       Perm       16         Permitted Phases       4       8       5       2       1       6       6       6       5.6       5.6       5.6       0.9       34.9       6.4       40.4       Actuated g/C Ratio       0.10       0.10       0.00       0.02       0.59       0.11       0.69       6       6       6       5.6       5.6       5.6       0.9       34.9       34.9       6.4       40.4         Actuated g/C Ratio       0.10       0.10       0.00       0.02       0.59       0.11       0.60       3.0       3.0       3.0       3.0		28	64	13	11	22	84	10	424	101	139	708	35
Lane Group Flow (vph)286501130010424601397400Heavy Vehicles (%)7%7%7%7%7%7%7%2%4%2%2%3%2%Turn TypePermPermProtPermProtPermProtProtected Phases485216Permitted Phases485216Permitted Phases485216Permitted Green, G (s)5.65.65.65.60.934.934.96.440.4Actuated g/C Ratio0.100.100.100.020.590.110.69Clearance Time (s)4.04.04.04.04.04.04.04.0Vehicle Extension (s)3.03.03.03.03.03.03.03.03.0Lane Grp Cap (vph)1211651211492720579381922388v/s Ratio Perm0.020.010.020.010.040.04v/s Ratio Perm0.020.010.010.001.001.001.00Inform Delay, d124.725.124.324.628.75.65.125.43.7Progression Factor1.001.001.001.001.001.001.001.00Incremental Delay, d21.01.60.		0	12	0	0	76	0	0	0	41	0	3	0
Heavy Vehicles (%)         7%         7%         7%         7%         7%         7%         7%         2%         4%         2%         2%         3%         2%           Tum Type         Perm         Perm         Prot         Perm         Prot         Perm         Prot           Protected Phases         4         8         5         2         1         6           Permitted Phases         4         8         2         440.4         40.4           Effective Green, g (s)         5.6         5.6         5.6         5.6         0.9         34.9         34.9         6.4         40.4           Actuated g/C Ratio         0.10         0.10         0.10         0.02         0.59         0.11         0.69           Clearance Time (s)         4.0         4.0         4.0         4.0         4.0         4.0         4.0           V/s Ratio Prot         c0.04         0.02         0.01         0.04         v/s Ratio Perm         0.02         0.01         0.04         v/c Ratio         0.23         0.40         0.09         0.20         0.37         0.21         0.66         0.72         0.31           Uniform Delay, d1         24.7         25.1<		28	65	0	11	30	0	10	424	60	139	740	0
Turn Type         Perm         Perm         Prot         Perm         Prot           Protected Phases         4         8         5         2         1         6           Permitted Phases         4         8         2         1         6           Actuated Green, G (s)         5.6         5.6         5.6         5.6         0.9         34.9         34.9         6.4         40.4           Effective Green, g (s)         5.6         5.6         5.6         0.9         34.9         6.4         40.4           Actuated g/C Ratio         0.10         0.10         0.10         0.02         0.59         0.59         0.11         0.69           Clearance Time (s)         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0				7%	7%	7%	7%	2%	4%	2%		3%	
Protected Phases         4         8         5         2         1         6           Permitted Phases         4         8         2         2         1         6           Actuated Green, G (s)         5.6         5.6         5.6         5.6         0.9         34.9         34.9         6.4         40.4           Effective Green, g (s)         5.6         5.6         5.6         5.6         0.9         34.9         34.9         6.4         40.4           Actuated g/C Ratio         0.10         0.10         0.10         0.02         0.59         0.59         0.11         0.69           Clearance Time (s)         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         <					Perm					Perm	Prot		
Permitted Phases         4         8         2           Actuated Green, G (s)         5.6         5.6         5.6         5.6         0.9         34.9         34.9         6.4         40.4           Effective Green, g (s)         5.6         5.6         5.6         5.6         0.9         34.9         34.9         6.4         40.4           Actuated g/C Ratio         0.10         0.10         0.10         0.02         0.59         0.51         0.69           Clearance Time (s)         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0           Vehicle Extension (s)         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0		1 Onn	4		1 01111	8			2	1 Onin		6	
Actuated Green, G (s)       5.6       5.6       5.6       5.6       5.6       0.9       34.9       34.9       6.4       40.4         Effective Green, g (s)       5.6       5.6       5.6       5.6       5.6       0.9       34.9       34.9       6.4       40.4         Actuated g/C Ratio       0.10       0.10       0.10       0.010       0.02       0.59       0.11       0.69         Clearance Time (s)       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0         Vehicle Extension (s)       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0		4			8	Ū		U	-	2		Ŭ	
Effective Green, g (s)       5.6       5.6       5.6       5.6       0.9       34.9       34.9       6.4       40.4         Actuated g/C Ratio       0.10       0.10       0.10       0.10       0.02       0.59       0.59       0.11       0.69         Clearance Time (s)       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       2.0       <			5.6		-	5.6		0.9	34.9		64	40.4	
Actuated g/C Ratio         0.10         0.10         0.10         0.10         0.02         0.59         0.59         0.11         0.69           Clearance Time (s)         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0													
Clearance Time (s)         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0													
Vehicle Extension (s)         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0													
Lane Grp Cap (vph)         121         165         121         149         27         2057         938         192         2388           v/s Ratio Prot         c0.04         0.02         0.01         0.02         c0.08         c0.21           v/s Ratio Perm         0.02         0.01         0.04         v/s													
v/s Ratio Prot       c0.04       0.02       0.01       0.12       c0.08       c0.21         v/s Ratio Perm       0.02       0.01       0.04       0.04       0.04       0.02       0.01       0.04         v/s Ratio Perm       0.23       0.40       0.09       0.20       0.37       0.21       0.06       0.72       0.31         Uniform Delay, d1       24.7       25.1       24.3       24.6       28.7       5.6       5.1       25.4       3.7         Progression Factor       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.													
v/s Ratio Perm       0.02       0.01       0.04         v/c Ratio       0.23       0.40       0.09       0.20       0.37       0.21       0.06       0.72       0.31         Uniform Delay, d1       24.7       25.1       24.3       24.6       28.7       5.6       5.1       25.4       3.7         Progression Factor       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00 <td< td=""><td></td><td>121</td><td></td><td></td><td>121</td><td></td><td></td><td></td><td></td><td>300</td><td></td><td></td><td></td></td<>		121			121					300			
v/c Ratio       0.23       0.40       0.09       0.20       0.37       0.21       0.06       0.72       0.31         Uniform Delay, d1       24.7       25.1       24.3       24.6       28.7       5.6       5.1       25.4       3.7         Progression Factor       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00 <td></td> <td>0.02</td> <td>0.04</td> <td></td> <td>0.01</td> <td>0.02</td> <td></td> <td>0.01</td> <td>0.12</td> <td>0.04</td> <td>0.00</td> <td>0.21</td> <td></td>		0.02	0.04		0.01	0.02		0.01	0.12	0.04	0.00	0.21	
Uniform Delay, d1         24.7         25.1         24.3         24.6         28.7         5.6         5.1         25.4         3.7           Progression Factor         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00			0.40			0.20		0.37	0.21		0.72	0.31	
Progression Factor         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00         1.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Incremental Delay, d2         1.0         1.6         0.3         0.7         8.4         0.2         0.1         12.7         0.3           Delay (s)         25.6         26.6         24.7         25.3         37.1         5.8         5.2         38.1         4.0           Level of Service         C         C         C         D         A         A         D         A           Approach Delay (s)         26.4         25.2         6.3         9.4         Approach LOS         C         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>													
Delay (s)         25.6         26.6         24.7         25.3         37.1         5.8         5.2         38.1         4.0           Level of Service         C         C         C         D         A         A         D         A           Approach Delay (s)         26.4         25.2         6.3         9.4           Approach LOS         C         C         A         A         A           Intersection Summary         Intersection Summary         Intersection Capacity ratio         0.36         A         A           HCM Volume to Capacity ratio         0.36         Sum of lost time (s)         8.0         Intersection Capacity Utilization         39.4%           Analysis Period (min)         15         ICU Level of Service         A         A	U												
Level of Service       C       C       C       C       D       A       D       A         Approach Delay (s)       26.4       25.2       6.3       9.4         Approach LOS       C       C       A       A         Intersection Summary        C       C       A         HCM Average Control Delay       10.6       HCM Level of Service       B         HCM Volume to Capacity ratio       0.36       Actuated Cycle Length (s)       58.9       Sum of lost time (s)       8.0         Intersection Capacity Utilization       39.4%       ICU Level of Service       A         Analysis Period (min)       15       15													
Approach Delay (s)     26.4     25.2     6.3     9.4       Approach LOS     C     C     A     A       Intersection Summary     Intersection Summary     Intersection Summary     B       HCM Average Control Delay     10.6     HCM Level of Service     B       HCM Volume to Capacity ratio     0.36     8.0       Actuated Cycle Length (s)     58.9     Sum of lost time (s)     8.0       Intersection Capacity Utilization     39.4%     ICU Level of Service     A       Analysis Period (min)     15     15													
Approach LOS     C     C     A       Intersection Summary       HCM Average Control Delay     10.6     HCM Level of Service     B       HCM Volume to Capacity ratio     0.36       Actuated Cycle Length (s)     58.9     Sum of lost time (s)     8.0       Intersection Capacity Utilization     39.4%     ICU Level of Service     A       Analysis Period (min)     15		U			U			U		~	U		
Intersection Summary         HCM Average Control Delay       10.6       HCM Level of Service       B         HCM Volume to Capacity ratio       0.36       Actuated Cycle Length (s)       58.9       Sum of lost time (s)       8.0         Intersection Capacity Utilization       39.4%       ICU Level of Service       A         Analysis Period (min)       15													
HCM Average Control Delay     10.6     HCM Level of Service     B       HCM Volume to Capacity ratio     0.36       Actuated Cycle Length (s)     58.9     Sum of lost time (s)     8.0       Intersection Capacity Utilization     39.4%     ICU Level of Service     A       Analysis Period (min)     15			C			C			A			A	
HCM Volume to Capacity ratio     0.36       Actuated Cycle Length (s)     58.9     Sum of lost time (s)     8.0       Intersection Capacity Utilization     39.4%     ICU Level of Service     A       Analysis Period (min)     15													
Actuated Cycle Length (s)     58.9     Sum of lost time (s)     8.0       Intersection Capacity Utilization     39.4%     ICU Level of Service     A       Analysis Period (min)     15					H	ICM Le	vel of S	ervice		В			
Intersection Capacity Utilization         39.4%         ICU Level of Service         A           Analysis Period (min)         15         5         5         5													
Analysis Period (min) 15													
		ilization			10	CU Lev	el of Sei	vice		A			
	Analysis Period (min)			15									

c Critical Lane Group

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Barrio Logan CPU 35: Main St & 28th S	St							E>			tions w Plan: AM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	仲孙		J.	<b>*</b> I+		μÇ	作る		ž	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.94		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1539	3190		1761	3314		1736	3335		1736	3332	
Flt Permitted	0.39	1.00		0.67	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	637	3190		1235	3314		1736	3335		1736	3332	
Volume (vph)	58	88	24	49	245	147	19	163	37	211	565	58
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.76	0.76	0.76	0.87	0.87	0.87
Adj. Flow (vph)	70	106	29	59	295	177	25	214	49	243	649	67
RTOR Reduction (vph)	0	22	0	0	126	0	0	24	0	0	7	0
Lane Group Flow (vph)	70	113	0	59	346	0	25	239	0	243	709	0
Confl. Peds. (#/hr)	10		12	12		10			72			27
Confl. Bikes (#/hr)			2			4			6			1
Heavy Vehicles (%)	17%	11%	2%	2%	2%	2%	4%	4%	4%	4%	4%	31%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	12.6	12.6		12.6	12.6		1.1	20.5		6.9	26.3	
Effective Green, g (s)	12.6	12.6		12.6	12.6		1.1	20.5		6.9	26.3	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.02	0.39		0.13	0.51	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	154	773		299	803		37	1315		230	1685	
v/s Ratio Prot		0.04			0.10		0.01	0.07		c0.14	c0.21	
v/s Ratio Perm	c0.11			0.05								
v/c Ratio	0.45	0.15		0.20	0.43		0.68	0.18		1.06	0.42	
Uniform Delay, d1	16.8	15.5		15.7	16.7		25.3	10.3		22.5	8.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.1		0.3	0.4		39.3	0.1		75.0	0.2	
Delay (s)	18.9	15.6		16.0	17.0		64.6	10.3		97.6	8.2	_
Level of Service	В	В		В	В		E	В		F	A	
Approach Delay (s)		16.7			16.9			15.0			30.9	
Approach LOS		В			В			В			С	
Intersection Summary												
HCM Average Control E	Delay		23.4	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.52									
Actuated Cycle Length (			52.0	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut			62.2%			el of Se			В			
Analysis Period (min)			15									
a Critical Lana Crown												

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36: Harbor Dr & 28t	131									0	Plan: AN	
	٦	-	$\mathbf{r}$	4	+	•	1	t.	1	1	ŧ	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Lane Configurations	ž	ሳሳ	*5	Υ.	44	1		e la		Ň	4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		0.95	0.95	1.0
Frpb, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.94		1.00		1.00	1.00	0.9
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.0
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	1.00	0.8
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	0.96	1.
Satd. Flow (prot)	1703	3406	1315	1719	3438	1445		1791		1649	1659	15
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	0.96	1.
Satd. Flow (perm)	1703	3406	1315	1719	3438	1445		1791		1649	1659	15
Volume (vph)	56	225	2	13	372	115	0	5	1	333	15	10
Peak-hour factor, PHF	0.87	0.87	0.87	0.86	0.86	0.86	0.75	0.75	0.75	0.86	0.86	0.
Adj. Flow (vph)	64	259	0.07	15	433	134	0.75	0.75	0.75	387	17	0.
RTOR Reduction (vph)	04	239	1	0	433	83	0	1	0	0	0	
	64	259	1	15	433	51	0	7	0	197	207	
ane Group Flow (vph)	64	259	69	15	433	51 80	0	1	0	197	207	
Confl. Peds. (#/hr)			69						6			
Confl. Bikes (#/hr)	C0/	6%	<b>C</b> 0/	E0/	E0/	3	40/	40/	-	40/	4%	
Heavy Vehicles (%)	6%		6%	5%	5%	5%	4%	4%	4%	4%	4%	4
Furn Type	Prot		ustom	Prot		ustom	Split			Split		Pe
Protected Phases	11	16 2 6		15	12 2 6	13	14	14		1 13 5		
Permitted Phases			16			12						15
Actuated Green, G (s)	9.2	39.1	33.3	1.5	31.4	44.1		13.6		29.1	29.1	29
Effective Green, g (s)	9.2	39.1	33.3	1.5	31.4	44.1		13.6		29.1	29.1	29
Actuated g/C Ratio	0.08	0.34	0.29	0.01	0.27	0.38		0.12		0.25	0.25	0.
Clearance Time (s)	4.0		4.0	4.0		4.0		4.0				
/ehicle Extension (s)	3.0		3.0	3.0		3.0		3.0				
ane Grp Cap (vph)	136	1155	380	22	936	553		211		416	419	3
//s Ratio Prot	c0.04	0.08		0.01	c0.13	0.01		c0.00		0.12	c0.12	
	00.04	0.00			00.10							0
/s Ratio Perm	0.04	0.00	0.00		00110	0.02						0.
	0.47	0.00	0.00 0.00	0.68	0.46			0.03		0.47	0.49	
//c Ratio				0.68 56.7		0.02		0.03 45.0		0.47 36.6	0.49 36.8	0.
//c Ratio Jniform Delay, d1	0.47	0.22	0.00		0.46	0.02						0. 32
//c Ratio Jniform Delay, d1 Progression Factor	0.47 50.7	0.22 27.3	0.00 29.2	56.7	0.46 34.9	0.02 0.09 22.8		45.0		36.6	36.8	0. 32 1.
//c Ratio Jniform Delay, d1 Progression Factor ncremental Delay, d2	0.47 50.7 1.00	0.22 27.3 1.00	0.00 29.2 1.00	56.7 1.00	0.46 34.9 1.00	0.02 0.09 22.8 1.00		45.0 1.00		36.6 0.91	36.8 0.91	0. 32 1.
r/c Ratio Uniform Delay, d1 Progression Factor ncremental Delay, d2 Delay (s)	0.47 50.7 1.00 2.6	0.22 27.3 1.00 0.1	0.00 29.2 1.00 0.0	56.7 1.00 62.1	0.46 34.9 1.00 0.4	0.02 0.09 22.8 1.00 0.1		45.0 1.00 0.1		36.6 0.91 0.9	36.8 0.91 0.9	0. 0. 32 1. (0 46
r/c Ratio Uniform Delay, d1 Progression Factor ncremental Delay, d2 Delay (s) Level of Service	0.47 50.7 1.00 2.6 53.3	0.22 27.3 1.00 0.1 27.4 C	0.00 29.2 1.00 0.0 29.2	56.7 1.00 62.1 118.8	0.46 34.9 1.00 0.4 35.3	0.02 0.09 22.8 1.00 0.1 22.9		45.0 1.00 0.1 45.1 D		36.6 0.91 0.9 34.1	36.8 0.91 0.9 34.5	0. 32 1.
r/c Ratio Jniform Delay, d1 Progression Factor ncremental Delay, d2 Delay (s) _evel of Service Approach Delay (s)	0.47 50.7 1.00 2.6 53.3	0.22 27.3 1.00 0.1 27.4	0.00 29.2 1.00 0.0 29.2	56.7 1.00 62.1 118.8	0.46 34.9 1.00 0.4 35.3 D	0.02 0.09 22.8 1.00 0.1 22.9		45.0 1.00 0.1 45.1		36.6 0.91 0.9 34.1	36.8 0.91 0.9 34.5 C	0. 32 1.
r/c Ratio Jniform Delay, d1 Progression Factor ncremental Delay, d2 Delay (s) .evel of Service Approach Delay (s) Approach LOS ntersection Summary	0.47 50.7 1.00 2.6 53.3 D	0.22 27.3 1.00 0.1 27.4 C 32.5	0.00 29.2 1.00 0.0 29.2 C	56.7 1.00 62.1 118.8 F	0.46 34.9 1.00 0.4 35.3 D 34.6 C	0.02 0.09 22.8 1.00 0.1 22.9 C		45.0 1.00 0.1 45.1 D 45.1		36.6 0.91 0.9 34.1	36.8 0.91 0.9 34.5 C 35.0	0. 32 1.
r/c Ratio Jniform Delay, d1 Progression Factor ncremental Delay, d2 Delay (s) .evel of Service Approach Delay (s) Approach LOS ntersection Summary	0.47 50.7 1.00 2.6 53.3 D	0.22 27.3 1.00 0.1 27.4 C 32.5	0.00 29.2 1.00 0.0 29.2 C	56.7 1.00 62.1 118.8 F	0.46 34.9 1.00 0.4 35.3 D 34.6 C	0.02 0.09 22.8 1.00 0.1 22.9	ervice	45.0 1.00 0.1 45.1 D 45.1	C	36.6 0.91 0.9 34.1	36.8 0.91 0.9 34.5 C 35.0	0. 31 1.
r/c Ratio Jniform Delay, d1 Progression Factor ncremental Delay, d2 Delay (s) .evel of Service Approach Delay (s) Approach LOS ntersection Summary HCM Average Control I	0.47 50.7 1.00 2.6 53.3 D	0.22 27.3 1.00 0.1 27.4 C 32.5	0.00 29.2 1.00 0.0 29.2 C	56.7 1.00 62.1 118.8 F	0.46 34.9 1.00 0.4 35.3 D 34.6 C	0.02 0.09 22.8 1.00 0.1 22.9 C	ervice	45.0 1.00 0.1 45.1 D 45.1	С	36.6 0.91 0.9 34.1	36.8 0.91 0.9 34.5 C 35.0	0. 31 1.
r/c Ratio Jniform Delay, d1 Progression Factor ncremental Delay, d2 Delay (s) _evel of Service Approach Delay (s) Approach LOS ntersection Summary HCM Average Control I HCM Volume to Capaci	0.47 50.7 1.00 2.6 53.3 D	0.22 27.3 1.00 0.1 27.4 C 32.5	0.00 29.2 1.00 0.0 29.2 C	56.7 1.00 62.1 118.8 F	0.46 34.9 1.00 0.4 35.3 D 34.6 C	0.02 0.09 22.8 1.00 0.1 22.9 C		45.0 1.00 0.1 45.1 D 45.1	C 32.0	36.6 0.91 0.9 34.1	36.8 0.91 0.9 34.5 C 35.0	0. 31 1.
<pre>//s Ratio Perm //c Ratio Jniform Delay, d1 Progression Factor ncremental Delay, d2 Delay (s) Level of Service Approach Delay (s) Approach LOS Intersection Summary HCM Average Control E HCM Volume to Capaci Actuated Cycle Length / Intersection Capacity UI</pre>	0.47 50.7 1.00 2.6 53.3 D Delay ty ratio (s)	0.22 27.3 1.00 0.1 27.4 C 32.5 C	0.00 29.2 1.00 0.0 29.2 C 34.3 0.40	56.7 1.00 62.1 118.8 F	0.46 34.9 1.00 0.4 35.3 D 34.6 C	0.02 0.09 22.8 1.00 0.1 22.9 C	(s)	45.0 1.00 0.1 45.1 D 45.1		36.6 0.91 0.9 34.1	36.8 0.91 0.9 34.5 C 35.0	0. 32 1.

c Critical Lane Group

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Barrio Logan CPU 37: Boston Ave & I-5	5 SB C	)n-ram	р					Ex	tisting T		tions w Plan: AN	
	۶	-	$\mathbf{r}$	•	+	•	•	Ť	1	1	ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
ane Configurations		\$			4			de.				
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
/olume (veh/h)	224	40	7	6	57	40	4	20	5	0	0	(
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.78	0.78	0.78	0.25	0.25	0.25
Hourly flow rate (vph)	243	43	8	7	64	45	5	26	6	0	0	(
Pedestrians												
_ane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Vedian storage veh)												
Jpstream signal (ft)		657										
X, platoon unblocked												
C, conflicting volume	109			51			634	657	47	653	638	8
/C1, stage 1 conf vol												
/C2, stage 2 conf vol	100			54			004	057	47	050	000	0.5
Cu, unblocked vol	109			51			634	657	47	653	638	87
C, single (s)	4.2			4.2			7.1	6.9	6.2	7.1	6.5	6.2
C, 2 stage (s)	2.3			2.3			3.5	4.4	3.3	3.5	4.0	3.3
F (s)	2.3			100			98	4.4 91	3.3 99	100	4.0	100
00 queue free %	1451			1524			340	282	1022	306	327	972
	1451			1524			340	202	1022	300	321	914
Direction, Lane #	EB 1	WB 1	NB 1									
/olume Total	295	116	37									
/olume Left	243	7	5									
/olume Right	8	45	6									
SH	1451	1524	331									
/olume to Capacity	0.17	0.00	0.11									
Queue Length 95th (ft)	15	0	9									
Control Delay (s)	6.8	0.5	17.3									
ane LOS	A	A	C									
Approach Delay (s)	6.8	0.5	17.3									
Approach LOS			С									
ntersection Summary												
Average Delay			6.1									
ntersection Capacity Uti	ilizatior	ı	31.6%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

38: Main St & 32nd	St								Т	iming F	Plan: AN	I Peak
	٦	-	$\mathbf{r}$	4	+	•	•	1	1	1	ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	<u>ቀ</u> ሴ		76	14		Υç	4	r	Ň	T.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3067		1703	3289		1770	1863	1557	1770	1821	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3067		1703	3289		1770	1863	1557	1770	1821	
Volume (vph)	9	103	158	314	317	74	110	50	26	39	83	12
Peak-hour factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91	0.89	0.89	0.89	0.84	0.84	0.84
Adj. Flow (vph)	10	117	180	345	348	81	124	56	29	46	99	14
RTOR Reduction (vph)	0	152	0	0	22	0	0	0	22	0	6	0
Lane Group Flow (vph)	10	145	0	345	407	0	124	56	7	46	107	0
Confl. Peds. (#/hr)			1			6			4			16
Confl. Bikes (#/hr)			2			4			2			5
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	0.5	9.5		17.6	26.6		5.8	14.7	14.7	3.0	11.9	
Effective Green, g (s)	0.5	9.5		17.6	26.6		5.8	14.7	14.7	3.0	11.9	
Actuated g/C Ratio	0.01	0.16		0.29	0.44		0.10	0.24	0.24	0.05	0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	14	479		493	1439		169	450	376	87	356	
v/s Ratio Prot	0.01	0.05		c0.20	c0.12		c0.07	c0.03		0.03	c0.06	
v/s Ratio Perm									0.00			
v/c Ratio	0.71	0.30		0.70	0.28		0.73	0.12	0.02	0.53	0.30	
Uniform Delay, d1	30.1	22.7		19.2	11.0		26.7	18.0	17.6	28.2	20.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	100.1	0.4		4.3	0.1		15.2	0.1	0.0	5.7	0.5	
Delay (s)	130.2	23.1		23.6	11.1		41.9	18.1	17.6	33.9	21.4	
Level of Service	F	С		С	В		D	В	В	С	С	
Approach Delay (s)		26.6			16.6			32.2			25.0	
Approach LOS		С			В			С			С	
Intersection Summary												
HCM Average Control D	Delay		21.9	F	ICM Lev	vel of S	ervice		С			
HCM Volume to Capaci	ty ratio		0.50									
Actuated Cycle Length (	(s)		60.8	5	Sum of l	ost time	(s)		16.0			
Intersection Capacity Ut	ilization		49.2%	I	CU Leve	el of Sei	vice		А			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations		ž	To.			*	цч,		J.	÷	15	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00	1.00	0.88	
Frt		1.00	0.93			1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00			0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1755	1735			1782	1579		1719	1810	2707	
Flt Permitted		0.58	1.00			0.70	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1076	1735			1308	1579		1719	1810	2707	
Volume (vph)	36	26	29	24	112	11	244	47	78	164	156	216
Peak-hour factor, PHF	0.92	0.90	0.90	0.90	0.78	0.78	0.78	0.92	0.73	0.73	0.73	0.92
Adj. Flow (vph)	39	29	32	27	144	14	313	51	107	225	214	235
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	68	39	0	0	158	364	0	107	225	449	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot		ustom	
Protected Phases	4		4			4			5	2	0.0	
Permitted Phases	4	4 27.8	27.8		4	27.8	4 27.8		11.7	18.9	2 3 43.1	
Actuated Green, G (s) Effective Green, g (s)		27.8	27.8			27.8	27.8		11.7	18.9	43.1	
Actuated g/C Ratio		0.27	0.27			0.27	0.27		0.11	0.19	43.1	
Clearance Time (s)		4.0	4.0			4.0	4.0		4.0	4.0	0.42	
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		293	473			356	430		197	335	1144	
v/s Ratio Prot		295	0.02			330			0.06	c0.12	1144	
v/s Ratio Perm		0.06	0.02			0.12	c0.23		0.00	50.12	0.17	
v/c Ratio		0.23	0.08			0.44	0.85		0.54	0.67	0.39	
Uniform Delay, d1		28.8	27.6			30.7	35.1		42.6	38.7	20.4	
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.4	0.1			0.9	14.2		3.0	5.2	0.2	
Delay (s)		29.2	27.7			31.6	49.3		45.7	43.9	20.6	
Level of Service		С	С			С	D		D	D	С	
Approach Delay (s)			28.5			44.0				30.7		
Approach LOS			С			D				С		
Intersection Summary												
HCM Average Control E			38.5	H	ICM Lev	el of S	ervice		D			
HCM Volume to Capaci			0.78									
Actuated Cycle Length (			102.0		um of l				16.0			
Intersection Capacity Ut	ilizatior	ı	60.9%	10	CU Leve	el of Se	rvice		В			
Analysis Period (min)			15									

С	Critical	Lane	Group	
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Barrio Logan CPU 39: 32nd St & Waba	ash St							۲	kisting Conditions w LRT Timing Plan: AM Peak
	<del>لي</del>	1	ŧ	~	6	¥	~	ŧ٧	
Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2	
Lane Configurations		ž	4%			24			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			4.0			
Lane Util. Factor		1.00	0.95			0.97			
Frt		1.00	0.99			0.99			
Flt Protected		0.95	1.00			0.95			
Satd. Flow (prot)		1765	3410			3357			
Flt Permitted		0.95	1.00			0.94			
Satd. Flow (perm)		1765	3410			3292			
Volume (vph)	30	191	161	12	12	424	23	2	
Peak-hour factor, PHF	0.92	0.83	0.83	0.83	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	33	230	194	14	13	461	25	2	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	263	208	0	0	501	0	0	
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%	
Turn Type	Prot	Prot			Perm				
Protected Phases	1	1	6			3			
Permitted Phases					3				
Actuated Green, G (s)		19.1	26.3			20.2			
Effective Green, g (s)		19.1	26.3			20.2			
Actuated g/C Ratio		0.19	0.26			0.20			
Clearance Time (s)		4.0	4.0			4.0			
Vehicle Extension (s)		3.0	3.0			3.0			
Lane Grp Cap (vph)		331	879			652			
v/s Ratio Prot		c0.15	0.06						
v/s Ratio Perm						c0.15			
v/c Ratio		0.79	0.24			0.77			
Uniform Delay, d1		39.6	29.9			38.7			
Progression Factor		1.00	1.00			1.00			
Incremental Delay, d2		12.4	0.1			5.4			
Delay (s)		51.9	30.1			44.1			
Level of Service		D	С			D			
Approach Delay (s)			42.3			44.1			
Approach LOS			D			D			
Intersection Summary									

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Barrio Logan CPU 40: Harbor Dr & 32n	d St							Ex			tions w Plan: AM	
	≯	+	*	4	ł	×	≺	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	ተተ	7*	74	**	7	h	44	٣	7	**	۴
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1518	1687	3374	1509	1719	3438	1483	1719	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1518	1687	3374	1509	1719	3438	1483	1719	3438	1538
Volume (vph)	94	141	99	207	316	276	20	105	19	89	739	136
Peak-hour factor, PHF	0.79	0.79	0.79	0.86	0.86	0.86	0.88	0.88	0.88	0.81	0.81	0.81
Adj. Flow (vph)	119	178	125	241	367	321	23	119	22	110	912	168
RTOR Reduction (vph)	0	0	115	0	0	275	0	0	19	0	0	104
Lane Group Flow (vph)	119	178	10	241	367	46	23	119	3	110	912	64
Confl. Bikes (#/hr)			3						16			
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		ustom	Prot		custom	Prot		Perm	Prot		ustom
Protected Phases	3	1426	15	13	1826		15	12		11 1 5	16 1 5	315
Permitted Phases			14			18			12			16
Actuated Green, G (s)	8.3	8.5	6.6	15.5	15.7	11.5	2.3	12.2	12.2	12.9	26.8	31.1
Effective Green, g (s)	8.3	8.5	6.6	15.5	15.7	11.5	2.3	12.2	12.2	12.9	26.8	31.1
Actuated g/C Ratio	0.10	0.10	0.08	0.19	0.19	0.14	0.03	0.15	0.15	0.16	0.33	0.38
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	176	360	124	322	653	214	49	517	223	273	1136	666
v/s Ratio Prot	0.07	0.05	0.00	c0.14	c0.11		0.01	0.03	0.00	c0.06	c0.27	0.02
v/s Ratio Perm	0.00	0.40	0.00	0.75	0.50	0.03	0.47	0.00	0.00	0.40	0.00	0.02
v/c Ratio	0.68	0.49	0.08	0.75	0.56	0.21	0.47	0.23	0.01	0.40	0.80	0.10
Uniform Delay, d1	35.1	34.3	34.4	31.0	29.6	30.8	38.8	30.3	29.3	30.6	24.7	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.11	0.85	2.48
Incremental Delay, d2	9.8	1.1	0.3	9.2	1.1	0.5	6.9	0.2	0.0	0.9	4.0	0.1
Delay (s)	44.9	35.3	34.7	40.1	30.7	31.3	45.7	30.5	29.4	34.9	25.1	39.7
Level of Service	D	D	С	D	C	С	D	C	С	С	C 29.1	D
Approach Delay (s)		37.9 D			33.4 C			32.5 C			28.1 C	
Approach LOS		D			C			C			U	
Intersection Summary												
HCM Average Control D	elay		31.7	F	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit	ty ratio		0.67									
Actuated Cycle Length (	s)		81.1	5	Sum of I	ost time	(s)		20.0			
Intersection Capacity Ut	ilizatior	ı	48.0%	l.	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									
c Critical Lane Group												

Synchro 6 Report Page 42 41: Main St & I-15 Ramps Timing Plan: AM Peak ٭ ← ۰. 1 -Movement EBL EBT WBT WBR SBL SBR Lane Configurations 14 44 44 Ideal Flow (vphpl) 1900 1900 1900 1900 1900 1900 Total Lost time (s) 4.0 4.0 4.0 4.0 4.0 Lane Util. Factor 1.00 0.95 0.95 1.00 1.00 Frpb, ped/bikes 1.00 1.00 1.00 1.00 0.99 Flpb, ped/bikes 1.00 1.00 1.00 1.00 1.00 Frt 1.00 1.00 1.00 0.85 0.90 Flt Protected 0.95 1.00 1.00 1.00 0.99 Satd. Flow (prot) 1770 1583 1643 3539 3539 Flt Permitted 1.00 1.00 1.00 0.99 0.95 Satd. Flow (perm) 1770 3539 3539 1583 1643 Volume (vph) 36 139 390 107 108 268 Peak-hour factor, PHF 0.86 0.86 0.93 0.93 0.82 0.82 Adj. Flow (vph) 42 132 327 162 419 115 RTOR Reduction (vph) 0 0 0 83 141 0 Lane Group Flow (vph) 42 162 419 32 318 0 Confl. Peds. (#/hr) 2 2 Confl. Bikes (#/hr) 2 Turn Type Prot Perm Protected Phases 5 4 2 6 Permitted Phases 6 13.4 1.9 16.4 Actuated Green, G (s) 10.5 10.5 13.4 Effective Green, g (s) 1.9 16.4 10.5 10.5 Actuated g/C Ratio 0.43 0.28 0.28 0.35 0.05 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 89 1535 983 440 582 v/s Ratio Prot c0.02 0.05 c0.12 c0.19 0.02 v/s Ratio Perm v/c Ratio 0.47 0.11 0.43 0.07 0.55 Uniform Delay, d1 17.5 6.3 11.2 10.1 9.8 1.00 Progression Factor 1.00 1.00 1.00 1.00 Incremental Delay, d2 3.9 0.3 0.1 0.0 1.1 Delay (s) 21.4 6.4 11.5 10.1 10.8 Level of Service С А В В В Approach Delay (s) 10.8 9.5 11.2 Approach LOS В А В Intersection Summary HCM Average Control Delay 10.8 В HCM Level of Service HCM Volume to Capacity ratio 0.49 12.0 Actuated Cycle Length (s) 37.8 Sum of lost time (s) 46.8% Intersection Capacity Utilization ICU Level of Service А Analysis Period (min) 15 c Critical Lane Group

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Barrio Logan CPU

Synchro 6 Report Page 43

Existing Conditions w LRT

Barrio Logan CPU 1: Commercial St &	16th S	t						Ex		Condit Timing F		
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Movement	EBL2	EBT	EBR	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	SWR
Lane Configurations		đ,		4			474			414		<del>ام</del>
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0			4.0			4.0		4.0
Lane Util. Factor		1.00		1.00			0.95			0.95		1.00
Frpb, ped/bikes		1.00		1.00			0.99			0.98		1.00
Flpb, ped/bikes		1.00		1.00			0.99			1.00		1.00
Frt		0.99		0.98			0.97			0.93		0.86
Flt Protected		1.00		1.00			0.98			0.99		1.00
Satd. Flow (prot)		1832		1830			3318			3193		1611
Flt Permitted		0.96		1.00			0.91			0.94		1.00
Satd. Flow (perm)		1762		1830			3056			3013		1611
Volume (vph)	18	131	11	192	24	14	21	12	6	16	19	20
Peak-hour factor, PHF	0.92	0.69	0.69	0.87	0.87	0.78	0.78	0.92	0.73	0.73	0.73	0.92
Adj. Flow (vph)	20	190	16	221	28	18	27	13	8	22	26	22
RTOR Reduction (vph)	0	5	0	0	0	0	6	0	0	12	0	0
Lane Group Flow (vph)	0	221	0	249	0	0	52	0	0	44	0	22
Confl. Peds. (#/hr)	11		9		11	28		7	7		28	
Confl. Bikes (#/hr)			1		2			3				
Turn Type	Perm					Perm			Perm		c	ustom
Protected Phases		4		8			2			6		9
Permitted Phases	4					2			6			
Actuated Green, G (s)		12.8		12.8			30.5			30.5		0.8
Effective Green, g (s)		12.8		12.8			30.5			30.5		0.8
Actuated g/C Ratio		0.23		0.23			0.54			0.54		0.01
Clearance Time (s)		4.0		4.0			4.0			4.0		4.0
Vehicle Extension (s)		3.0		3.0			3.0			3.0		3.0
Lane Grp Cap (vph)		402		418			1661			1638		23
v/s Ratio Prot				c0.14								c0.01
v/s Ratio Perm		0.13					c0.02			0.01		
v/c Ratio		0.55		0.60			0.03			0.03		0.96
Uniform Delay, d1		19.1		19.3			5.9			5.9		27.6
Progression Factor		1.00		1.00			1.00			1.00		1.00
Incremental Delay, d2		1.6		2.3			0.0			0.0		166.5
Delay (s)		20.7		21.6			6.0			6.0		194.2
Level of Service		C		C			A			A		F
Approach Delay (s) Approach LOS		20.7 C		21.6 C			6.0 A			6.0 A		
Intersection Summary												
HCM Average Control E	)elav		24.6	Ļ	ICM Lev	vel of S	ervice		С			
HCM Volume to Capaci			0.21				CIVICE		U			
Actuated Cycle Length (			56.1		Sum of I	ost time	(s)		12.0			
Intersection Capacity Ut			58.7%		CU Leve				12.0 B			
Analysis Period (min)	mzauon		15				100		5			
c Critical Lane Group			.5									
shindar Land Oroup												

Synchro 6 Report Page 1

Barrio Logan CPU 2: National Ave & 16	6th St							Ex			tions w Plan: PM	
	۶	-	•	4	+	×	1	1	۲	1	Ŧ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		<b>4</b> 1⊅		74	Þ			10			1.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	74	8	3	90	25	15	41	7	16	25	7
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.69	0.69	0.69	0.67	0.67	0.67
Hourly flow rate (vph)	9	86	9	4	118	33	22	59	10	24	37	10
Pedestrians		14			10			37			27	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			3			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					668							
pX, platoon unblocked												
vC, conflicting volume	178			132			316	333	95	281	321	176
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	178			132			316	333	95	281	321	176
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			96	89	99	96	93	99
cM capacity (veh/h)	1364			1406			525	550	907	544	558	809
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	52	52	4	151	91	72						
Volume Left	9	0	4	0	22	24						
Volume Right	0	9	0	33	10	10						
cSH	1364	1700	1406	1700	568	579						
Volume to Capacity	0.01	0.03	0.00	0.09	0.16	0.12						
Queue Length 95th (ft)	0.01	0.03	0.00	0.09	14	11						
Control Delay (s)	1.4	0.0	7.6	0.0	12.5	12.1						
Lane LOS	1.4 A	0.0	7.0 A	0.0	12.5 B	12.1 B						
Approach Delay (s)	0.7		0.2		12.5	12.1						
Approach LOS	0.7		0.2		12.5 B	12.1 B						
					D	В						
Intersection Summary												
Average Delay			5.0									
Intersection Capacity Ut	ilization	l.	25.8%	10	CU Lev	el of Ser	vice		A			
Analysis Period (min)			15									

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Inverse         EBL         EBT         EBR         WBL         WBT         WBR         NBL         NBT         NBR         SBL         SBT
ane Configurations         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1
Iteal Flow (vphpl)         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         100         100         100
Iteal Flow (vphpl)         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         100         100         100
ane Util. Factor         1.00         1.00         1.00         1.00         1.00         1.00           rpb, ped/bikes         1.00         0.99         1.00         0.99         1.00         0.99           lpb, ped/bikes         0.98         1.00         0.99         1.00         1.00         1.00           lpb, ped/bikes         0.98         1.00         0.99         1.00         1.00         1.00           rt         1.00         0.95         1.00         0.97         0.98         0.97           lt Protected         0.95         1.00         0.95         1.00         0.98         1.00           atd. Flow (prot)         1738         1758         1748         1802         1789         1785           atd. Flow (perm)         1281         1758         1201         1802         1685         1768           olume (vph)         5         73         31         7         54         11         34         55         13         3         23           eak-hour factor, PHF         0.63         0.63         0.75         0.75         0.85         0.85         0.77         0.77         0.7           dj. Flow (vph)         8         <
ane Util. Factor         1.00         1.00         1.00         1.00         1.00         1.00           rpb, ped/bikes         1.00         0.99         1.00         0.99         1.00         0.99           lpb, ped/bikes         0.98         1.00         0.99         1.00         1.00         1.00           lpb, ped/bikes         0.98         1.00         0.99         1.00         1.00         1.00           rt         1.00         0.95         1.00         0.97         0.98         0.97           lt Protected         0.95         1.00         0.95         1.00         0.98         1.00           atd. Flow (prot)         1738         1758         1748         1802         1789         1785           atd. Flow (perm)         1281         1758         1201         1802         1685         1768           olume (vph)         5         73         31         7         54         11         34         55         13         3         23           eak-hour factor, PHF         0.63         0.63         0.75         0.75         0.85         0.85         0.77         0.77         0.7           dj. Flow (vph)         8         <
hyp. ped/bikes         0.98         1.00         0.99         1.00         1.00         1.00           rt         1.00         0.96         1.00         0.97         0.98         0.97           It Protected         0.95         1.00         0.95         1.00         0.98         1.00           atd. Flow (prot)         1738         1758         1748         1802         1789         1785           It Permitted         0.70         1.00         0.65         1.00         0.93         0.99           atd. Flow (perm)         1281         1758         1201         1802         1685         1768           olume (vph)         5         73         31         7         54         11         34         55         13         3         23           eak-hour factor, PHF         0.63         0.63         0.75         0.75         0.85         0.85         0.77         0.77         0.7           dj. Flow (vph)         8         116         49         9         72         15         40         65         15         4         30         1           TOR Reduction (vph)         8         135         9         75         0
1.00         0.96         1.00         0.97         0.98         0.97           It Protected         0.95         1.00         0.95         1.00         0.98         1.00           atd. Flow (prot)         1738         1758         1748         1802         1789         1785           it Permitted         0.70         1.00         0.65         1.00         0.93         0.99           atd. Flow (perm)         1281         1758         1201         1802         1685         1768           olume (vph)         5         73         31         7         54         11         34         55         13         3         23           eak-hour factor, PHF         0.63         0.63         0.75         0.75         0.85         0.85         0.77         0.77         0.7           dj. Flow (vph)         8         116         49         9         72         15         40         65         15         4         30         1           TOR Reduction (vph)         0         30         0         12         0         6         0         0         4           ane Group Flow (vph)         8         135         9         75
tr     1.00     0.96     1.00     0.97     0.98     0.97       It Protected     0.95     1.00     0.95     1.00     0.98     1.00       atd. Flow (prot)     1738     1758     1748     1802     1789     1785       It Permitted     0.70     1.00     0.65     1.00     0.93     0.99       atd. Flow (perm)     1281     1758     1201     1802     1685     1768       olume (vph)     5     73     31     7     54     11     34     55     13     3     23       eak-hour factor, PHF     0.63     0.63     0.75     0.75     0.75     0.85     0.85     0.77     0.77     0.7       dj. Flow (vph)     8     116     49     9     72     15     40     65     15     4     30     1       TOR Reduction (vph)     0     30     0     12     0     6     0     0     4       ane Group Flow (vph)     8     135     0     9     75     0     0     114     0     0     40
atd. Flow (prot)         1738         1758         1748         1802         1789         1785           It Permitted         0.70         1.00         0.65         1.00         0.93         0.99           atd. Flow (perm)         1281         1758         1201         1802         1685         1768           olume (vph)         5         73         31         7         54         11         34         55         13         3         23           eak-hour factor, PHF         0.63         0.63         0.75         0.75         0.85         0.85         0.77         0.77         0.7           jc. Flow (vph)         8         116         49         9         72         15         40         65         15         4         30         1           TOR Reduction (vph)         0         30         0         0         120         0         6         0         0         40
It Permitted         0.70         1.00         0.65         1.00         0.93         0.99           atd. Flow (perm)         1281         1758         1201         1802         1685         1768           olume (vph)         5         73         31         7         54         11         34         55         13         3         23           eak-hour factor, PHF         0.63         0.63         0.75         0.75         0.75         0.85         0.85         0.77         0.77         0.7           jc. Flow (vph)         8         116         49         9         72         15         40         65         15         4         30         1           TOR Reduction (vph)         0         30         0         122         0         0         6         0         4           ane Group Flow (vph)         8         135         9         75         0         114         0         40
atd. Flow (perm)         1281         1758         1201         1802         1685         1768           olume (vph)         5         73         31         7         54         11         34         55         13         3         23           eak-hour factor, PHF         0.63         0.63         0.75         0.75         0.75         0.85         0.85         0.77         0.77         0.7           dj. Flow (vph)         8         116         49         9         72         15         40         65         15         4         30         1           TOR Reduction (vph)         0         30         0         0         12         0         0         6         0         4           ane Group Flow (vph)         8         135         0         9         75         0         0         114         0         0         40
olume (vph)         5         73         31         7         54         11         34         55         13         3         23           eak-hour factor, PHF         0.63         0.63         0.75         0.75         0.75         0.85         0.85         0.77         0.77         0.7           dj. Flow (vph)         8         116         49         9         72         15         40         65         15         4         30         1           TOR Reduction (vph)         0         30         0         12         0         6         0         4           ane Group Flow (vph)         8         135         0         9         75         0         0         114         0         0         40
olume (vph)         5         73         31         7         54         11         34         55         13         3         23           eak-hour factor, PHF         0.63         0.63         0.75         0.75         0.75         0.85         0.85         0.77         0.77         0.7           dj. Flow (vph)         8         116         49         9         72         15         40         65         15         4         30         1           TOR Reduction (vph)         0         30         0         12         0         6         0         4           ane Group Flow (vph)         8         135         0         9         75         0         0         114         0         0         40
eak-hour factor, PHF         0.63         0.63         0.75         0.75         0.75         0.85         0.85         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77<
dj. Flow (vph) 8 116 49 9 72 15 40 65 15 4 30 1 TOR Reduction (vph) 0 30 0 0 12 0 0 6 0 0 4 ane Group Flow (vph) 8 135 0 9 75 0 0 114 0 0 40
TOR Reduction (vph)         0         30         0         12         0         6         0         4           ane Group Flow (vph)         8         135         0         9         75         0         114         0         40
ane Group Flow (vph) 8 135 0 9 75 0 0 114 0 0 40
onfl. Bikes (#/hr) 4 3
urn Type Perm Perm Perm Perm
rotected Phases 4 8 2 6
ernitted Phases 4 8 2 6
cluated Green, G (s) 8.2 8.2 8.2 8.2 22.5 22.5
ffective Green, g (s) 8.2 8.2 8.2 8.2 22.5 22.5
ctuated g/C Ratio 0.21 0.21 0.21 0.21 0.58 0.58
learance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
ehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0
ane Grp Cap (vph) 271 372 254 382 980 1028
(s Ratio Prot c0.08 0.04
/s Ratio Perm 0.01 0.01 c0.07 0.02
/c Ratio 0.03 0.36 0.04 0.20 0.12 0.04
niform Delay, d1 12.1 13.0 12.1 12.5 3.6 3.5
rogression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00
cremental Delay, d2 0.0 0.6 0.1 0.3 0.1 0.0
elay (s) 12.1 13.6 12.2 12.8 3.7 3.5
evel of Service B B B B A A
pproach Delay (s) 13.6 12.7 3.7 3.5
pproach LOS B B A A
tersection Summary
CM Average Control Delay 9.6 HCM Level of Service A
CM Volume to Capacity ratio 0.18
ctuated Cycle Length (s) 38.7 Sum of lost time (s) 8.0
tersection Capacity Utilization 32.1% ICU Level of Service A
nalysis Period (min) 15
Critical Lane Group

Synchro 6 Report Page 3

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			de.			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	8	22	17	1	23	8	11	58	2	6	25	7
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.81	0.81	0.81	0.56	0.56	0.56
Hourly flow rate (vph)	11	30	23	1	32	11	14	72	2	11	45	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	64	44	88	68								
Volume Left (vph)	11	1	14	11								
Volume Right (vph)	23	11	2	13								
Hadj (s)	-0.15	-0.11	0.05	-0.04								
Departure Headway (s)	4.1	4.2	4.3	4.2								
Degree Utilization, x	0.07	0.05	0.10	0.08								
Capacity (veh/h)	832	819	815	833								
Control Delay (s)	7.5	7.4	7.7	7.5								
Approach Delay (s)	7.5	7.4	7.7	7.5								
Approach LOS	A	А	Α	Α								
Intersection Summary												
Delay			7.6									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	า	20.7%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU 5: Main St & Sigsbe	e St							E>	tisting T		tions w Plan: PM	
	≯	+	*	4	ł	*	•	1	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			1			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	4	1	3	10	0	31	0	39	1	20	27	1
Peak Hour Factor	0.50	0.50	0.50	0.79	0.79	0.79	0.62	0.62	0.62	0.67	0.67	0.67
Hourly flow rate (vph)	8	2	6	13	0	39	0	63	2	30	40	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	16	52	65	72								
Volume Left (vph)	8	13	0	30								
Volume Right (vph)	6	39	2	1								
Hadj (s)	-0.09	-0.37	0.02	0.10								
Departure Headway (s)	4.2	3.8	4.1	4.2								
Degree Utilization, x	0.02	0.06	0.07	0.08								
Capacity (veh/h)	830	901	845	836								
Control Delay (s)	7.2	7.1	7.5	7.6								
Approach Delay (s)	7.2	7.1	7.5	7.6								
Approach LOS	Α	A	А	Α								
Intersection Summary												
Delay			7.4									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	n .	21.1%	- 10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 6: Harbor Dr & Sigsl	hee St						Existing Conditions w LR Timing Plan: PM Peal
o. Harber bi a eige	•		+	•	7	1	<b>3</b>
	-	-	-			•	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	۲	ተቀ	41>		14		
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	82	1163	314	13	23	18	
Peak Hour Factor	0.96	0.96	0.92	0.92	0.76	0.76	
Hourly flow rate (vph)	85	1211	341	14	30	24	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					Raised		
Median storage veh)					0		
Upstream signal (ft)			1319				
pX, platoon unblocked							
vC, conflicting volume	355				1125	178	
vC1, stage 1 conf vol					348		
vC2, stage 2 conf vol					777		
vCu, unblocked vol	355				1125	178	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)	2.2				3.5	3.3	
p0 queue free %	93				86	97	
cM capacity (veh/h)	1200				223	835	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	
Volume Total	85	606	606	228	128	54	
Volume Left	85	0	0	0	0	30	
Volume Right	0	0	0	0	14	24	
cSH	1200	1700	1700	1700	1700	329	
Volume to Capacity	0.07	0.36	0.36	0.13	0.08	0.16	
Queue Length 95th (ft)	6	0	0	0	0	14	
Control Delay (s)	8.2	0.0	0.0	0.0	0.0	18.1	
Lane LOS	А					С	
Approach Delay (s)	0.5			0.0		18.1	
Approach LOS						С	
Intersection Summary							
Average Delay			1.0				
Intersection Capacity Ut	ilization		42.1%	1	CU Leve	el of Service	A
Analysis Period (min)			15				

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Barrio Logan CPU 7: Logan Ave & Bea	rdsley	' St						Ex	tisting T		ions w lan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		Ţ.		)r	ţ.			40			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	210	32	24	65	0	27	0	73	154	73	16
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.86	0.86	0.86	0.81	0.81	0.81
Hourly flow rate (vph)	0	280	43	28	76	0	31	0	85	190	90	20
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	323	28	76	116	300							
Volume Left (vph)	0	28	0	31	190							
Volume Right (vph)	43	0	0	85	20							
Hadj (s)	-0.05	0.53	0.03	-0.35	0.12							
Departure Headway (s)	5.3	6.7	6.2	5.3	5.4							
Degree Utilization, x	0.48	0.05	0.13	0.17	0.45							
Capacity (veh/h)	640	490	527	605	627							
Control Delay (s)	13.1	8.8	8.9	9.3	12.7							
Approach Delay (s)	13.1	8.9		9.3	12.7							
Approach LOS	В	A		Α	В							
Intersection Summary												
Delay			11.9									
HCM Level of Service			В									
Intersection Capacity Ut	ilizatior	۱	46.3%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 8: National Ave & Be	eardsle	ey St						E>	disting T	Condit iming P		
	≯	+	*	4	+	•	•	Ť	*	*	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ţ,		J.	Þ			610			1	
Sign Control		Stop		· ·	Stop			Stop			Stop	
Volume (vph)	19	96	2	33	77	12	9	43	43	29	83	11
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.68	0.68	0.68	0.77	0.77	0.77
Hourly flow rate (vph)	25	128	3	42	99	15	13	63	63	38	108	14
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	25	131	42	114	140	160						
Volume Left (vph)	25	0	42	0	13	38						
Volume Right (vph)	0	3	0	15	63	14						
Hadj (s)	0.53	0.02	0.53	-0.06	-0.22	0.03						
Departure Headway (s)	6.0	5.5	6.0	5.4	4.7	4.9						
Degree Utilization, x	0.04	0.20	0.07	0.17	0.18	0.22						
Capacity (veh/h)	563	620	565	628	712	682						
Control Delay (s)	8.1	8.6	8.2	8.3	8.8	9.3						
Approach Delay (s)	8.5		8.3		8.8	9.3						
Approach LOS	А		Α		А	А						
Intersection Summary												
Delay			8.7									
HCM Level of Service			А									
Intersection Capacity Uti	ilization		30.3%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU 9: Newton Ave & Be	ardsle	ey St						Ex	disting T	Condit iming F		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		¢.			\$			1			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	28	1	6	47	19	1	66	16	44	81	9
Peak Hour Factor	0.65	0.65	0.65	0.82	0.82	0.82	0.80	0.80	0.80	0.78	0.78	0.78
Hourly flow rate (vph)	8	43	2	7	57	23	1	82	20	56	104	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	52	88	104	172								
Volume Left (vph)	8	7	1	56								
Volume Right (vph)	2	23	20	12								
Hadj (s)	0.05	-0.11	-0.08	0.06								
Departure Headway (s)	4.7	4.5	4.3	4.4								
Degree Utilization, x	0.07	0.11	0.13	0.21								
Capacity (veh/h)	710	745	789	779								
Control Delay (s)	8.0	8.0	8.0	8.6								
Approach Delay (s)	8.0	8.0	8.0	8.6								
Approach LOS	A	А	А	A								
Intersection Summary												
Delay			8.2									
HCM Level of Service			А									
Intersection Capacity Uti	ilizatior	n	28.4%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 10: Main St & Beard	sley S	St						Ex	disting T	Condit iming P		
	۶	-	$\mathbf{r}$	4	+	×	1	1	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			40			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	22	49	4	15	33	9	0	25	31	15	39	17
Peak Hour Factor	0.85	0.85	0.85	0.79	0.79	0.79	0.74	0.74	0.74	0.68	0.68	0.68
Hourly flow rate (vph)	26	58	5	19	42	11	0	34	42	22	57	25
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	88	72	76	104								
Volume Left (vph)	26	19	0	22								
Volume Right (vph)	5	11	42	25								
Hadj (s)	0.06	-0.01	-0.30	-0.07								
Departure Headway (s)	4.4	4.4	4.1	4.3								
Degree Utilization, x	0.11	0.09	0.09	0.12								
Capacity (veh/h)	774	772	835	796								
Control Delay (s)	8.0	7.8	7.5	7.9								
Approach Delay (s)	8.0	7.8	7.5	7.9								
Approach LOS	A	А	A	A								
Intersection Summary												
Delay			7.8									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	1	23.7%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Novement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	7	ተቀ	个顶		Υ.		
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	60	1167	329	16	26	16	
Peak Hour Factor	0.96	0.96	0.93	0.93	0.81	0.81	
Hourly flow rate (vph)	62	1216	354	17	32	20	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				1	Raised		
Median storage veh)					0		
Upstream signal (ft)			658				
oX, platoon unblocked							
C, conflicting volume	371				1095	185	
vC1, stage 1 conf vol					362		
VC2, stage 2 conf vol					733		
Cu, unblocked vol	371				1095	185	
C, single (s)	4.3				6.8	6.9	
C, 2 stage (s)					5.8		
F (s)	2.3				3.5	3.3	
0 queue free %	94				86	98	
cM capacity (veh/h)	1129				235	825	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	
Volume Total	62	608	608	236	135	52	
Volume Left	62	0	0	0	0	32	
Volume Right	0	0	0	0	17	20	
cSH	1129	1700	1700	1700	1700	323	
Volume to Capacity	0.06	0.36	0.36	0.14	0.08	0.16	
Queue Length 95th (ft)	4	0	0	0	0	14	
Control Delay (s)	8.4	0.0	0.0	0.0	0.0	18.3	
Lane LOS	А					С	
Approach Delay (s)	0.4			0.0		18.3	
Approach LOS						С	
ntersection Summary							
Average Delay			0.9				
ntersection Capacity Ut	ilization		42.3%	10	CU Leve	el of Serv	ice A

Barrio Logan CPU 12: Kearney St & Ce	esar E.	Chav	ez Pkv	vy				E>			tions w Plan: PM	
	۶	+	*	4	t	×	<	1	1	×	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				J.	4		Υç	4			41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor				0.95	0.95		1.00	1.00			0.95	
Frt				1.00	0.94		1.00	1.00			0.99	
Flt Protected				0.95	0.98		0.95	1.00			1.00	
Satd. Flow (prot)				1478	1435		1626	1712			3225	
Flt Permitted				0.95	0.98		0.95	1.00			1.00	
Satd. Flow (perm)				1478	1435		1626	1712			3225	
Volume (vph)	0	0	0	415	54	113	189	262	0	0	250	15
Peak-hour factor, PHF	0.25	0.25	0.25	0.82	0.82	0.82	0.92	0.92	0.92	0.77	0.77	0.77
Adj. Flow (vph)	0	0	0	506	66	138	205	285	0	0	325	19
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	0	0	354	330	0	205	285	0	0	338	0
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%
Turn Type				Split			Split					
Protected Phases				. 8	8		. 6	6			2	
Permitted Phases												
Actuated Green, G (s)				18.7	18.7		14.5	14.5			11.5	
Effective Green, g (s)				18.7	18.7		14.5	14.5			11.5	
Actuated g/C Ratio				0.33	0.33		0.26	0.26			0.20	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				487	473		416	438			654	
v/s Ratio Prot				c0.24	0.23		0.13	c0.17			c0.10	
v/s Ratio Perm												
v/c Ratio				0.73	0.70		0.49	0.65			0.52	
Uniform Delay, d1				16.7	16.5		18.0	18.8			20.1	
Progression Factor				1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2				5.4	4.4		0.9	3.4			0.7	
Delay (s)				22.1	21.0		18.9	22.3			20.8	
Level of Service				С	С		В	С			С	
Approach Delay (s)		0.0			21.5			20.9			20.8	
Approach LOS		А			С			С			С	
Intersection Summary												
HCM Average Control D			21.2	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit	y ratio		0.65									
Actuated Cycle Length (			56.7	S	Sum of I	ost time	(s)		12.0			
Intersection Capacity Ut			44.2%	10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									
c Critical Lane Group												

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Barrio Logan CPU 13: Logan Ave & Ce	sar E.	Chave	ez Pkv	w				Ex			tions w Plan: PM	
	≯	-	¥	4	+	×	•	Ť	1	1	ţ	∢
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	TA.		74	+	7	45	44	٣	7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1761	1806		1763	1863	1553	1530	3059	1328	1530	3010	
Flt Permitted	0.74	1.00		0.43	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1376	1806		795	1863	1553	1530	3059	1328	1530	3010	
Volume (vph)	97	205	44	9	19	28	9	254	339	114	394	39
Peak-hour factor, PHF	0.86	0.86	0.86	0.82	0.82	0.82	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	113	238	51	11	23	34	10	289	385	120	415	41
RTOR Reduction (vph)	0	15	0	0	0	26	0	0	231	0	8	0
Lane Group Flow (vph)	113	274	0	11	23	8	10	289	154	120	448	0
Confl. Peds. (#/hr)	10		13	13		10			27			27
Confl. Bikes (#/hr)			4			2			3			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8			2			
Actuated Green, G (s)	11.2	11.2		11.2	11.2	11.2	0.7	19.0	19.0	5.4	23.7	
Effective Green, g (s)	11.2	11.2		11.2	11.2	11.2	0.7	19.0	19.0	5.4	23.7	
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.01	0.40	0.40	0.11	0.50	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	324	425		187	438	365	23	1221	530	174	1499	
v/s Ratio Prot		c0.15			0.01		0.01	0.09		c0.08	c0.15	
v/s Ratio Perm	0.08			0.01		0.01			0.12			
v/c Ratio	0.35	0.65		0.06	0.05	0.02	0.43	0.24	0.29	0.69	0.30	
Uniform Delay, d1	15.2	16.4		14.1	14.1	14.0	23.3	9.5	9.7	20.3	7.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	3.4		0.1	0.1	0.0	12.6	0.1	0.3	10.8	0.1	
Delay (s)	15.8	19.8		14.2	14.1	14.0	35.9	9.6	10.0	31.1	7.2	
Level of Service	В	В		В	В	В	D	Α	В	С	A	
Approach Delay (s)		18.7			14.1			10.2			12.2	
Approach LOS		В			В			В			В	
Intersection Summary												
HCM Average Control D	elay		13.0	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capacit	ty ratio		0.44									
Actuated Cycle Length (					Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut	ilization		57.5%	10	CU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group												

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	ž	ţ,	35	Ъ	×	41>	μ	4	ř	
Volume (vph)	88	75	51	57	16	476	77	330	65	
Turn Type	Perm		Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6		
Permitted Phases	4		8		2		6		6	
Detector Phases	4	4	8	8	2	2	6	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	42.0	42.0	42.0	42.0	38.0	38.0	38.0	38.0	38.0	
Total Split (%) 5	52.5%	52.5%	52.5%	52.5%	47.5%	47.5%	47.5%	47.5%	47.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Intersection Summary										

Natural Cycle: 65 Control Type: Actuated-Coordinated

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy

A 02	<i>▲</i> _{ø4}
38 s	42 s
<b>\$</b> ⊳ ø6	<b>↓</b> ø8
38 s	42 s

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Barrio Logan CPU 14: National Ave & 0	Cesar E	E. Cha	avez P	kwy				Ex			tions w Plan: PM	
	۶	-	$\mathbf{r}$	1	+	•	•	Ť	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	Т.		)r	Þ		ЯÇ	<b>†</b> Ъ		7	1	٣
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1771		1770	1704		1612	3194		1530	1610	1369
Flt Permitted	0.51	1.00		0.60	1.00		0.55	1.00		0.44	1.00	1.00
Satd. Flow (perm)	957	1771		1112	1704		927	3194		706	1610	1369
Volume (vph)	88	75	36	51	57	75	16	476	30	77	330	65
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.89	0.89	0.89	0.93	0.93	0.93
Adj. Flow (vph)	97	82	40	55	62	82	18	535	34	83	355	70
RTOR Reduction (vph)	0	35	0	0	72	0	0	2	0	0	0	15
Lane Group Flow (vph)	97	87	0	55	72	0	18	567	0	83	355	55
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	9.4	9.4		9.4	9.4		62.6	62.6		62.6	62.6	62.6
Effective Green, g (s)	9.4	9.4		9.4	9.4		62.6	62.6		62.6	62.6	62.6
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78		0.78	0.78	0.78
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	112	208		131	200		725	2499		552	1260	1071
v/s Ratio Prot		0.05			0.04			0.18			c0.22	
v/s Ratio Perm	c0.10			0.05			0.02			0.12		0.04
v/c Ratio	0.87	0.42		0.42	0.36		0.02	0.23		0.15	0.28	0.05
Uniform Delay, d1	34.7	32.8		32.8	32.5		1.9	2.3		2.1	2.4	2.0
Progression Factor	1.00	1.00		1.00	1.00		0.69	0.68		1.00	1.00	1.00
Incremental Delay, d2	45.8	1.4		2.2	1.1		0.1	0.2		0.6	0.6	0.1
Delay (s)	80.5	34.1		34.9	33.6		1.4	1.8		2.7	3.0	2.1
Level of Service	F	С		С	C		A	A		A	A	A
Approach Delay (s)		54.7			34.0			1.8			2.8	
Approach LOS		D			С			A			A	
Intersection Summary												
HCM Average Control E	Delay		14.0	F	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.36									
Actuated Cycle Length (	(s)		80.0	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut	ilization		46.5%	10	CU Lev	el of Se	rvice		А			
Analysis Period (min)			15									
c Critical Lane Group												

K:\SND_TPTO\095707000\Synchro\EX PM.sy7 KHA Kimley-Horn and Associates, Inc. Synchro 6 Report Page 2 Barrio Logan CPU Existing Conditions w LRT Timing Plan: PM Peak 15: Newton Ave & Cesar E. Chavez Pkwy ٦ ∢ ← ∕• 1 EBT WBL WBT NBL NBT Lane Group EBL SBL SBT Lane Configurations 41. ¥ Т. 1a Ъ Volume (vph) 52 55 13 21 459 44 316 8 Turn Type Perm Perm Perm Perm Protected Phases 4 8 2 6 Permitted Phases 4 8 2 6 Detector Phases 4 2 2 6 4 8 8 6 Minimum Initial (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Minimum Split (s) 31.0 31.0 27.0 27.0 27.0 31.0 31.0 27.0 40.0 40.0 Total Split (s) 40.0 40.0 40.0 40.0 40.0 40.0 Total Split (%) 50.0% 50.0% 50.0% 50.0% 50.0% 50.0% 50.0% 50.0% Yellow Time (s) 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 All-Red Time (s) 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 Lead/Lag Lead-Lag Optimize? Recall Mode None None None C-Min C-Min C-Min C-Min Intersection Summary Cycle Length: 80 Actuated Cycle Length: 80 Offset: 18 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy

↑ _{ø2}	<i>▲</i> _{ø4}
40 s	40 s
<b>↓</b> ~ _{ø6}	<b>↓</b> ø8
40 s	40 s

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Movement         EBL         EBT         EBR         WBL         WBT         WBT         NBT         NBR         SBL         SBT         SBR           Lane Configurations         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         0         0.96         1         0         0.95         1         0         0.99         1         0         0.99         1         0         0.99         1         0         0.99         1         0         0         0.99         1         0         0         0.99         1         0         0         0.99         1         0         0         0.99         1         0         0         9         1         0         0         1         1         1         1         1         1	Barrio Logan CPU 15: Newton Ave & C	esar E	. Cha	vez Pk	wy				E>			tions w Plan: PM	
Lane Configurations         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T		۶	-	$\mathbf{r}$	1	+	•	•	1	1	1	ţ	~
Ideal Flow (vphp)       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       1900       19	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost time (s)       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0       4.0         Lane Util. Factor       1.00       1.00       1.00       1.00       1.00       0.95       1.00       0.99       1.00       0.99       1.00       0.99       1.00       0.99       1.00       0.99       1.00       0.99       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.55       1.00       0.55       1.00       0.50       0.0       2.0       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00       1.00 <td< td=""><td>Lane Configurations</td><td>ž</td><td>ĥ</td><td></td><td>J.</td><td>ħ</td><td></td><td>μÇ</td><td>个门</td><td></td><td>ž</td><td>î.</td><td></td></td<>	Lane Configurations	ž	ĥ		J.	ħ		μÇ	个门		ž	î.	
Lane Util. Factor       1.00       1.00       1.00       1.00       0.95       1.00       0.99         Frt       1.00       0.96       1.00       0.99       1.00       0.99       1.00       0.99         Fit Protected       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Frt       1.00       0.96       1.00       0.99       1.00       0.99       1.00       0.99         Fit Protected       0.95       1.00       0.95       1.00       0.95       1.00       0.99       1.00         Stdt. Flow (port)       1770       1770       1786       1770       1675       1612       3201       754       1680         Stdt. Flow (perm)       1311       1786       1770       177       0.77       0.77       0.87       0.87       0.87       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.87       0.87       0.87       0.87       0.87       0.87       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87       0.87 </td <td>Total Lost time (s)</td> <td>4.0</td> <td>4.0</td> <td></td> <td>4.0</td> <td>4.0</td> <td></td> <td>4.0</td> <td>4.0</td> <td></td> <td>4.0</td> <td>4.0</td> <td></td>	Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Fit Protected       0.95       1.00       0.95       1.00       0.95       1.00       0.95       1.00         Satd. Flow (prot)       1770       1786       1770       1675       1612       3201       1612       1680         Satd. Flow (perm)       1311       1786       1232       1675       902       3201       754       1680         Volume (vph)       52       55       21       13       21       42       8       459       23       44       316       22         Peak-hour factor, PHF       0.74       0.74       0.77       0.77       0.77       0.77       0.87       0.87       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.89       0.70       77       0.77       0.77       0.77       0.87       0.87       0.88       0.88       0.89       0.80       0.88       0.88       0.88       0.88       0.88       0.88       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80       0.80 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Satd. Flow (prot)       1770       1786       1770       1675       1612       3201       1612       1680         Fit Permitted       0.70       1.00       0.66       1.00       0.53       1.00       0.44       1.00         Satd. Flow (pprm)       1311       1786       1232       1675       902       3201       754       1680         Volume (vph)       52       55       21       13       21       42       8       459       23       44       316       22         Peak-hour factor, PHF       0.74       0.74       0.77       0.77       0.87       0.87       0.87       0.88       0.88       0.88       0.88         Adj. Flow (vph)       70       74       28       17       27       55       9       528       26       50       359       25         RTOR Reduction (vph)       0       25       0       0       50       0       2%       2%       2%       2%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12% </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Fit Permitted       0.70       1.00       0.66       1.00       0.53       1.00       0.44       1.00         Satd. Flow (perm)       1311       1786       1232       1675       902       3201       754       1680         Volume (vph)       52       55       21       13       21       42       8       459       23       44       316       22         Peak-hour factor, PHF       0.74       0.74       0.77       0.77       0.77       0.87       0.87       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.88       0.83       0       100       10       0.70       77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77       0.77													
Satd. Flow (perm)       1311       1786       1232       1675       902       3201       754       1680         Volume (vph)       52       55       21       13       21       42       8       459       23       44       316       22         Peak-hour factor, PHF       0.74       0.74       0.77       0.77       0.87       0.87       0.87       0.88       0.88       0.88       0.88         Adj, Flow (vph)       70       74       28       17       27       55       9       528       26       50       359       25         RTOR Reduction (vph)       70       77       0       17       32       0       9       552       0       50       383       0         Heavy Vehicles (%)       2%       2%       2%       2%       2%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12% <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>													
Volume (vph)         52         55         21         13         21         42         8         459         23         44         316         22           Peak-hour factor, PHF         0.74         0.74         0.77         0.77         0.87         0.87         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.88         0.89         25         0         0         0         1         0         10           Lane Group Flow (vph)         70         77         0         17         32         0         9         552         0         0         383         0           Heavy Vehicles (%)         2%         2%         2%         2%         2%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%													
Peak-hour factor, PHF       0.74       0.74       0.77       0.77       0.87       0.87       0.87       0.88       0.88       0.88       0.88         Adj. Flow (vph)       70       74       28       17       27       55       9       528       26       50       359       25         RTOR Reduction (vph)       0       25       0       0       50       0       0       2       0       0       1       0         Lane Group Flow (vph)       70       77       0.17       32       0       9       552       0       50       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12% </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Adj. Flow (vph)       70       74       28       17       27       55       9       528       26       50       359       25         RTOR Reduction (vph)       0       25       0       0       50       0       0       2       0       0       1       0         Lane Group Flow (vph)       70       77       0       17       32       0       9       552       0       50       383       0         Heavy Vehicles (%)       2%       2%       2%       2%       2%       2%       2%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%													
RTOR Reduction (vph)       0       25       0       0       50       0       0       2       0       0       1       0         Lane Group Flow (vph)       70       77       0       17       32       0       9       552       0       50       383       0         Heavy Vehicles (%)       2%       2%       2%       2%       2%       2%       2%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%       12%													
Lane Group Flow (vph)         70         77         0         17         32         0         9         552         0         50         383         0           Heavy Vehicles (%)         2%         2%         2%         2%         2%         2%         2%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12% <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>													
Heavy Vehicles (%)         2%         2%         2%         2%         2%         2%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12%         12% <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>													
Turn Type         Perm         Perm         Perm         Perm           Protected Phases         4         8         2         6           Permitted Phases         4         8         2         6           Actuated Green, G (s)         7.8         7.8         7.8         64.2         64.2         64.2           Effective Green, g (s)         7.8         7.8         7.8         64.2         64.2         64.2           Actuated g/C Ratio         0.10         0.10         0.10         0.80         0.80         0.80         0.80           Clearance Time (s)         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0								-					
Protected Phases         4         8         2         6           Permitted Phases         4         8         2         6           Actuated Green, G (s)         7.8         7.8         7.8         7.8         64.2         64.2         64.2           Actuated Green, g (s)         7.8         7.8         7.8         7.8         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2			2%	2%		2%	2%		12%	12%		12%	12%
Permitted Phases         4         8         2         6           Actuated Green, G (s)         7.8         7.8         7.8         7.8         64.2         64.2         64.2         64.2           Effective Green, g (s)         7.8         7.8         7.8         7.8         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2		Perm			Perm			Perm			Perm		
Actuated Green, G (s)       7.8       7.8       7.8       7.8       7.8       64.2       64.2       64.2       64.2         Effective Green, g (s)       7.8       7.8       7.8       7.8       64.2       64.2       64.2       64.2         Actuated g/C Ratio       0.10       0.10       0.10       0.10       0.80       0.80       0.80         Clearance Time (s)       4.0       4.0       4.0       4.0       4.0       4.0       4.0         Vehicle Extension (s)       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0       3.0         Lane Grp Cap (vph)       128       174       120       163       724       2569       605       1348         v/s Ratio Perm       0.04       0.02       0.17       c0.23       v/s       katio Perm       c0.05       0.01       0.01       0.07       vc Ratio       0.55       0.44       0.14       0.20       0.01       0.22       0.08       0.28       Uniform Delay, d1       34.4       34.0       33.0       33.2       1.6       1.9       1.7       2.0       Progression Factor       1.00       1.00       0.32       0.49       0.92       1.08			4			8			2			6	
Effective Green, g (s)         7.8         7.8         7.8         7.8         7.8         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2         64.2 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Actuated g/C Ratio         0.10         0.10         0.10         0.10         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80         0.80 <td>, , ,</td> <td></td> <td>_</td>	, , ,												_
Clearance Time (s)         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         4.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         1.0	, , , ,												
Vehicle Extension (s)         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0													_
Lane Grp Cap (vph)         128         174         120         163         724         2569         605         1348           v/s Ratio Prot         0.04         0.02         0.17         c0.23           v/s Ratio Perm         c0.05         0.01         0.01         0.07           v/c Ratio         0.55         0.44         0.14         0.22         0.08         0.28           Uniform Delay, d1         34.4         34.0         33.0         33.2         1.6         1.9         1.7         2.0           Progression Factor         1.00         1.00         1.00         0.32         0.49         0.92         1.08           Incremental Delay, d2         4.7         1.8         0.5         0.6         0.0         0.2         0.3         0.5           Delay (s)         39.1         35.8         33.6         33.8         0.5         1.1         1.8         2.7           Level of Service         D         D         C         C         A         A         A           Approach Delay (s)         37.2         33.8         1.1         2.6         A           Approach LOS         D         C         A         A         A													
v/s Ratio Prot     0.04     0.02     0.17     c0.23       v/s Ratio Perm     c0.05     0.01     0.01     0.07       v/c Ratio     0.55     0.44     0.14     0.20     0.01     0.22       v/s Ratio Perm     c0.55     0.44     0.14     0.20     0.01     0.22     0.08     0.28       Uniform Delay, d1     34.4     34.0     33.0     33.2     1.6     1.9     1.7     2.0       Progression Factor     1.00     1.00     1.00     0.32     0.49     0.92     1.08       Incremental Delay, d2     4.7     1.8     0.5     0.6     0.0     0.2     0.3     0.5       Delay (s)     39.1     35.8     33.6     33.8     0.5     1.1     1.8     2.7       Level of Service     D     D     C     C     A     A     A       Approach Delay (s)     37.2     33.8     1.1     2.6       Approach LOS     D     C     A     A       Intersection Summary     HCM Average Control Delay     9.1     HCM Level of Service     A       HCM Volume to Capacity ratio     0.31     A     40.8%     ICU Level of Service     A       Analysis Period (min)     15     40.8% <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
v/s Ratio Perm         c0.05         0.01         0.01         0.07           v/c Ratio         0.55         0.44         0.14         0.20         0.01         0.22         0.08         0.28           Uniform Delay, d1         34.4         34.0         33.0         33.2         1.6         1.9         1.7         2.0           Progression Factor         1.00         1.00         1.00         0.32         0.49         0.92         1.08           Incremental Delay, d2         4.7         1.8         0.5         0.6         0.0         0.2         0.3         0.5           Delay (s)         39.1         35.8         33.6         33.8         0.5         1.1         1.8         2.7           Level of Service         D         D         C         C         A         A         A           Approach Delay (s)         37.2         33.8         1.1         2.6         Approach LOS         D         C         A         A           Actorate LOS         D         C         A         A         A         A           HCM Average Control Delay         9.1         HCM Level of Service         A         A           HCM Volume to Capacity rati		128			120			724			605		
v/c Ratio       0.55       0.44       0.14       0.20       0.01       0.22       0.08       0.28         Uniform Delay, d1       34.4       34.0       33.0       33.2       1.6       1.9       1.7       2.0         Progression Factor       1.00       1.00       1.00       0.32       0.49       0.92       1.08         Incremental Delay, d2       4.7       1.8       0.5       0.6       0.0       0.2       0.3       0.5         Delay (s)       39.1       35.8       33.6       33.8       0.5       1.1       1.8       2.7         Level of Service       D       D       C       C       A       A       A         Approach LOS       D       C       C       A       A       A         Hersection Summary       HCM Average Control Delay       9.1       HCM Level of Service       A         HCM Volume to Capacity ratio       0.31       A       A       A         Actuated Cycle Length (s)       80.0       Sum of lost time (s)       8.0       Intersection Capacity Utilization       40.8%       ICU Level of Service       A		0.05	0.04		0.04	0.02		0.01	0.17		0.07	c0.23	
Uniform Delay, d1         34.4         34.0         33.0         33.2         1.6         1.9         1.7         2.0           Progression Factor         1.00         1.00         1.00         1.00         0.32         0.49         0.92         1.08           Incremental Delay, d2         4.7         1.8         0.5         0.6         0.0         0.2         0.3         0.5           Delay (s)         39.1         35.8         33.6         33.8         0.5         1.1         1.8         2.7           Level of Service         D         D         C         C         A         A         A           Approach Delay (s)         37.2         33.8         1.1         2.6           Approach LOS         D         C         A         A         A           Intersection Summary         HCM Average Control Delay         9.1         HCM Level of Service         A           HCM Volume to Capacity ratio         0.31         -         -         -           Actuated Cycle Length (s)         80.0         Sum of lost time (s)         8.0         -           Intersection Capacity (Utilization         40.8%         ICU Level of Service         A         -									0.00			0.00	
Progression Factor         1.00         1.00         1.00         1.00         0.32         0.49         0.92         1.08           Incremental Delay, d2         4.7         1.8         0.5         0.6         0.0         0.2         0.3         0.5           Delay (s)         39.1         35.8         33.6         33.8         0.5         1.1         1.8         2.7           Level of Service         D         D         C         C         A         A         A           Approach Delay (s)         37.2         33.8         1.1         2.6           Approach LOS         D         C         A         A         A           Intersection Summary          C         A         A         A           HCM Average Control Delay         9.1         HCM Level of Service         A         A           Actuated Cycle Length (s)         80.0         Sum of lost time (s)         8.0         Intersection Capacity Utilization         40.8%         ICU Level of Service         A													
Incremental Delay, d2         4.7         1.8         0.5         0.6         0.0         0.2         0.3         0.5           Delay (s)         39.1         35.8         33.6         33.8         0.5         1.1         1.8         2.7           Level of Service         D         D         C         C         A         A         A           Approach Delay (s)         37.2         33.8         1.1         2.6         Approach LOS         D         C         A         A           Approach LOS         D         C         A         A         A           Intersection Summary         HCM Average Control Delay         9.1         HCM Level of Service         A           HCM Volume to Capacity ratio         0.31													
Delay (s)         39.1         35.8         33.6         33.8         0.5         1.1         1.8         2.7           Level of Service         D         D         C         C         A         A         A           Approach Delay (s)         37.2         33.8         1.1         2.6           Approach Delay (s)         37.2         33.8         1.1         2.6           Approach LOS         D         C         A         A           Intersection Summary         HCM Average Control Delay         9.1         HCM Level of Service         A           HCM Volume to Capacity ratio         0.31         Actuated Cycle Length (s)         80.0         Sum of lost time (s)         8.0           Intersection Capacity Utilization         40.8%         ICU Level of Service         A         A	U												
Level of Service       D       D       C       C       A       A       A       A         Approach Delay (s)       37.2       33.8       1.1       2.6         Approach LOS       D       C       A       A       A         Intersection Summary       0       C       A       A         HCM Average Control Delay       9.1       HCM Level of Service       A         HCM Volume to Capacity ratio       0.31       A       A         Actuated Cycle Length (s)       80.0       Sum of lost time (s)       8.0         Intersection Capacity Utilization       40.8%       ICU Level of Service       A         Analysis Period (min)       15       15       A													
Approach Delay (s)     37.2     33.8     1.1     2.6       Approach LOS     D     C     A     A       Intersection Summary     HCM Average Control Delay     9.1     HCM Level of Service     A       HCM Volume to Capacity ratio     0.31     A     A       Actuated Cycle Length (s)     80.0     Sum of lost time (s)     8.0       Intersection Capacity Utilization     40.8%     ICU Level of Service     A													_
Approach LOS     D     C     A     A       Intersection Summary     Intersection Summary     Intersection Summary     Intersection Capacity ratio     0.31       HCM Volume to Capacity ratio     0.31     Intersection Capacity (s)     80.0     Sum of lost time (s)     8.0       Intersection Capacity Utilization     40.8%     ICU Level of Service     A       Analysis Period (min)     15		D			U			A			A		
Intersection Summary       HCM Average Control Delay       9.1       HCM Level of Service       A         HCM Volume to Capacity ratio       0.31       Actuated Cycle Length (s)       80.0       Sum of lost time (s)       8.0         Intersection Capacity Utilization       40.8%       ICU Level of Service       A         Analysis Period (min)       15       15													
HCM Average Control Delay         9.1         HCM Level of Service         A           HCM Volume to Capacity ratio         0.31	Approach LOS		D			C			A			A	
HCM Volume to Capacity ratio     0.31       Actuated Cycle Length (s)     80.0     Sum of lost time (s)     8.0       Intersection Capacity Utilization     40.8%     ICU Level of Service     A       Analysis Period (min)     15													
Actuated Cycle Length (s)     80.0     Sum of lost time (s)     8.0       Intersection Capacity Utilization     40.8%     ICU Level of Service     A       Analysis Period (min)     15					H	ICM Le	vel of S	ervice		A			
Intersection Capacity Utilization         40.8%         ICU Level of Service         A           Analysis Period (min)         15         15         16         16													
Analysis Period (min) 15								· · /					
		ilization			10	CU Lev	el of Se	rvice		A			_
				15									

Synchro 6 Report Page 2 Barrio Logan CPU Existing Conditions w LRT Timing Plan: PM Peak 16: Main St & Cesar E. Chavez Pkwy ٦ < ← 1 EBT WBL WBT NBL NBT Lane Group EBL SBL SBT Lane Configurations 269 41. η Т. Ta Υç Volume (vph) 53 34 22 455 26 18 4 Turn Type Perm Perm Perm Perm Protected Phases 4 8 2 6 Permitted Phases 4 8 2 6 Detector Phases 4 2 2 6 4 8 8 6 Minimum Initial (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Minimum Split (s) 31.0 31.0 27.0 27.0 27.0 27.0 31.0 31.0 39.0 Total Split (s) 41.0 41.0 41.0 41.0 39.0 39.0 39.0 Total Split (%) 51.3% 51.3% 51.3% 51.3% 48.8% 48.8% 48.8% 48.8% Yellow Time (s) 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 All-Red Time (s) 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 Lead/Lag Lead-Lag Optimize? Recall Mode None None None C-Min C-Min C-Min C-Min Intersection Summary Cycle Length: 80 Actuated Cycle Length: 80 Offset: 3 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60 Control Type: Actuated-Coordinated

Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy

	<i>▲</i> _{ø4}	
39 s	41 s	
<b>↓</b> _{ø6}	<b>4</b> ∅8	
39 s	41 s	

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Barrio Logan CPU 16: Main St & Cesar	E. Ch	avez F	Pkwy					Ex			tions w Plan: PM	
	≯	+	*	4	+	•	•	1	1	1	ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	τ.		76	To		45	个门		7	î»	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.98	1.00		0.98	1.00	
Frt	1.00	0.98		1.00	0.89		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1744	1807		1734	1621		1529	3087		1530	1602	
Flt Permitted	0.68	1.00		0.73	1.00		0.55	1.00		0.46	1.00	
Satd. Flow (perm)	1240	1807		1331	1621		887	3087		739	1602	
Volume (vph)	53	34	7	18	22	60	4	455	19	26	269	34
Peak-hour factor, PHF	0.94	0.94	0.94	0.76	0.76	0.76	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	56	36	7	24	29	79	4	500	21	29	296	37
RTOR Reduction (vph)	0	6	0	0	65	0	0	2	0	0	3	0
Lane Group Flow (vph)	56	37	0	24	43	0	4	519	0	29	330	0
Confl. Peds. (#/hr)	19		24	24		19	16		20	20		16
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.7	13.7		13.7	13.7		58.3	58.3		58.3	58.3	
Effective Green, g (s)	13.7	13.7		13.7	13.7		58.3	58.3		58.3	58.3	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.73	0.73		0.73	0.73	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	212	309		228	278		646	2250		539	1167	
v/s Ratio Prot		0.02			0.03			0.17			c0.21	
v/s Ratio Perm	c0.05			0.02			0.00			0.04		
v/c Ratio	0.26	0.12		0.11	0.15		0.01	0.23		0.05	0.28	
Uniform Delay, d1	28.8	28.1		28.0	28.2		3.0	3.5		3.1	3.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.73	0.66	
Incremental Delay, d2	0.7	0.2		0.2	0.3		0.0	0.2		0.2	0.6	
Delay (s)	29.4	28.2		28.2	28.5		3.0	3.8		2.4	3.0	
Level of Service	С	С		С	С		Α	Α		А	Α	
Approach Delay (s)		28.9			28.4			3.8			3.0	
Approach LOS		С			С			А			А	
Intersection Summary												
HCM Average Control D	Delay		8.7	H	ICM Le	vel of S	ervice		А			
HCM Volume to Capacit			0.28									
Actuated Cycle Length (			80.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		45.0%	10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	4%	LDIX	1000	<b>†</b> Ъ	WDI	NDL NG	10	NDIX	ODL	4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0	1300	4.0	4.0	1300	4.0	4.0	1300	1300	4.0	4.
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.0
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99			1.00	0.9
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.0
Frt	1.00	1.00		1.00	0.97		1.00	0.95			1.00	0.8
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.0
Satd. Flow (prot)	1641	3272		1421	3159		1363	1315			1596	136
Flt Permitted	0.95	1.00		0.95	1.00		0.71	1.00			0.83	1.0
Satd. Flow (perm)	1641	3272		1421	3159		1024	1315			1364	136
Volume (vph)	375	713	12	19	166	43	1024	63	35	33	30	24
Peak-hour factor, PHF	0.96	0.96	0.96	0.91	0.91	43 0.91	0.85	0.85	0.85	0.93	0.93	0.9
	391	743	0.96	21	182	47	0.85	0.85	0.85	0.93	0.93	26
Adj. Flow (vph) RTOR Reduction (vph)	391	143	0	21	182	47	0	14	41	35	32	20
	391	754	0	21	210	0	13	101	0	0	67	20
Lane Group Flow (vph)	391	/ 54	11	21	210	6	4	101	1	1	67	ť
Confl. Peds. (#/hr)			9			14	4		3	1		
Confl. Bikes (#/hr) Heavy Vehicles (%)	10%	10%	9 10%	27%	10%	10%	32%	32%	43%	16%	16%	16
	Prot	10 /6	10 /6	Prot	10 /6	10 /6	Perm	JZ /0	43 /0	Perm	10 /6	Per
Turn Type Protected Phases		14.2.6			1826		Penn	12			1 5 16	Per
Permitted Phases	3	14 2 6		13	1826		12	12		1 5 16	1516	15
Actuated Green, G (s)	27.9	44.1		2.8	19.0		13.6	13.6		1010	22.2	22
Effective Green, g (s)	27.9	44.1		2.8	19.0		13.6	13.6			22.2	22
	0.29	44.1 0.45		2.8	0.20		0.14	0.14			0.23	0.2
Actuated g/C Ratio	4.0	0.45		4.0	0.20		4.0	4.0			0.23	0.
Clearance Time (s)	3.0			3.0				4.0 3.0				
Vehicle Extension (s)		1 100			0.1.0		3.0				0.10	0
ane Grp Cap (vph)	472	1486		41	618		143	184			312	3
/s Ratio Prot	c0.24	c0.23		0.01	0.07		0.04	c0.08			0.05	
/s Ratio Perm		0.54		0.54	0.04		0.01	0.55			c0.05	0.0
//c Ratio	0.83	0.51		0.51	0.34		0.09	0.55			0.21	0.
Jniform Delay, d1	32.4	18.8		46.5	33.6		36.4	38.9			30.4	30
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.28	4.
ncremental Delay, d2	11.4	0.3		10.4	0.3		0.3	3.5			0.3	C
Delay (s)	43.8	19.1		56.9	34.0		36.6	42.4			39.2	121
evel of Service	D	В		E	С		D	D			D	
Approach Delay (s)		27.5			35.9			41.8			105.2	
Approach LOS		С			D			D			F	
ntersection Summary												
HCM Average Control E	Delay		43.6	H	ICM Le	vel of Se	ervice		D			
ICM Volume to Capaci			0.59									
Actuated Cycle Length			97.1	S	Sum of I	ost time	(s)		24.0			
ntersection Capacity Ut		ı	50.3%			el of Ser	(-)		A			
Analysis Period (min)			15									

c Critical Lane Group

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18: Logan Ave & I-5	SB O	n-ram	0						Т	iming F	Plan: PM	l Peal
	۶	-	$\mathbf{i}$	4	+	*	1	Ť	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ž	ĥ		×	Þ				P ^r			
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
/olume (veh/h)	473	267	5	0	73	51	0	0	10	0	0	(
Peak Hour Factor	0.93	0.93	0.93	0.72	0.72	0.72	0.56	0.56	0.56	0.25	0.25	0.25
Hourly flow rate (vph)	509	287	5	0	101	71	0	0	18	0	0	(
Pedestrians												
ane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)		667										
Jpstream signal (ft)		667										
X, platoon unblocked	172			292			1408	1479	290	1459	1446	137
C1, stage 1 conf vol	172			292			1400	1479	290	1409	1440	131
C2, stage 2 conf vol												
Cu, unblocked vol	172			292			1408	1479	290	1459	1446	137
C, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
C, 2 stage (s)								0.0	0.2		0.0	0.2
F (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
00 queue free %	64			100			100	100	98	100	100	100
cM capacity (veh/h)	1405			1269			84	80	749	75	84	912
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1							
/olume Total	509	292	0	172	18							
/olume Left	509	292	0	0	0							
/olume Right	0	5	0	71	18							
SH	1405	1700	1700	1700	749							
Volume to Capacity	0.36	0.17	0.00	0.10	0.02							
Queue Length 95th (ft)	42	0.17	0.00	0.10	2							
Control Delay (s)	9.0	0.0	0.0	0.0	9.9							
ane LOS	A	0.0	0.0	0.0	A							
Approach Delay (s)	5.7		0.0		9.9							
Approach LOS					A							
ntersection Summary												
Average Delay			4.8									
ntersection Capacity Ut	ilization	I	39.8%	[(	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									

Novement         EBL         EBT         WBT         WBR         SBL         SBR           Lane Configurations         A         A         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T         T	Barrio Logan CPU 19: National Ave & S	SR-75	Off-ra	mn				Existing Conditions w LR Timing Plan: PM Peal
Movement         EBL         EBT         WBT         WBR         SBL         SBR           Lane Configurations         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑				••••	•	5	2	<b>0 •</b> • • • •
Lane Configurations         A         N         7'           Sign Control         Free         Free         Stop           Grade         0%         0%         0%           Volume (veh/h)         0         160         134         0         72         133           Peak Hour Factor         0.87         0.87         0.86         0.83         0.83         0.83           Hourly flow rate (vph)         0         184         156         0         87         160           Pedestrians         Lane Width (ft)         Walking Speed (ft/s)         Percent Blockage         Right turn flare (veh)           Median type         TWLTL         Median storage veh)         1         100         875           yC, conflicting volume         156         340         156         vC1, stage 1 conf vol         156           vC1, stage 1 conf vol         156         340         156         156         154           tC2, stage 2 conf vol         184         vC1, unblocked vol         156         3.40         156           vC2, stage 2 conf vol         5.5         3.3         p0         queue free %         100         87         82           vGume Free %         100         87		-	-			•	•	
Sign Control         Free         Free         Stop           Grade         0%         0%         0%           Volume (veh/h)         0         160         134         0         72         133           Peak Hour Factor         0.87         0.86         0.86         0.83         0.83           Hourly flow rate (vph)         0         184         156         0         87         160           Pedestrians		EBL			WBR			
Grade       0%       0%       0%         Volume (veh/h)       0       160       134       0       72       133         Peak Hour Factor       0.87       0.87       0.86       0.83       0.83       0.83         Hourly flow rate (vph)       0       184       156       0       87       160         Pedestrians       Eane Width (ft)       Walking Speed (ft/s)       Percent Blockage       87       160         Percent Blockage       Right turn flare (veh)       1       100       875       1         Median storage veh)       1       1100       875       1       156         yC, conflicting volume       156       340       156       156         vC2, stage 1 conf vol       156       340       156       156         vC2, stage 2 conf vol       184       156       156       156         vC2, stage (s)       5.4       5.4       156       156         tf (s)       2.2       3.5       3.3       20       20       2890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2       100       87       82         Volume Total       184       156       87	Lane Configurations		4	4		3	٢	
Volume (veh/h)         0         160         134         0         72         133           Peak Hour Factor         0.87         0.87         0.86         0.80         0.83         0.83           Hourly flow rate (vph)         0         184         156         0         87         160           Pedestrians         Lane Width (ft)         1         0         184         156         0         87         160           Pedestrians         Lane Width (ft)         1         1         0         160         184         156         160         17           Walking Speed (ft/s)         Percent Blockage         TWLTL         Median storage veh)         1         1         100         875         160         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156	Sign Control		Free	Free		Stop		
Peak Hour Factor       0.87       0.87       0.86       0.83       0.83         Hourly flow rate (vph)       0       184       156       0       87       160         Pedestrians       Lane Width (ft)       Valking Speed (ft/s)       Percent Blockage       1       160         Percent Blockage       Right turn flare (veh)       1       100       875       1         Median storage veh)       1       1100       875       1       156         VC, conflicting volume       156       340       156       156         vC2, stage 1 conf vol       156       340       156         vC1, stage 1 conf vol       156       340       156         vC2, stage 2 conf vol       184       156       156         vC2, stage 2 conf vol       184       156       156         vC1, stage 1 conf vol       156       340       156         vC1, stage 1 conf vol       156       340<	Grade		0%	0%		0%		
Hourly flow rate (vph)       0       184       156       0       87       160         Pedestrians <t< td=""><td>Volume (veh/h)</td><td>0</td><td>160</td><td>134</td><td>0</td><td>72</td><td>133</td><td></td></t<>	Volume (veh/h)	0	160	134	0	72	133	
Pedestrians       Image: Control of Control Delay (s)         Lane Width (ft)       Walking Speed (ft/s)         Percent Blockage       Right turn flare (veh)         Median type       TWLTL         Median storage veh)       1         Upstream signal (ft)       1100         Upstream signal (ft)       1100         VC, conflicting volume       156         vC2, stage 2 conf vol       184         vC2, stage 2 conf vol       184         vC2, stage 2 conf vol       184         vC4, unblocked vol       156         tf (s)       2.2       3.5         go queue free %       100       87       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 2       Volume Total         Volume Left       0       0       160       cSH       1700         CH       1700       692       890       100       CSH       100         Control Delay (s)       0.0       0       160       160       160       160         Control Delay (s)       0.0       0.11       16       160       160       160       160       160       160 <td>Peak Hour Factor</td> <td>0.87</td> <td>0.87</td> <td>0.86</td> <td>0.86</td> <td>0.83</td> <td>0.83</td> <td></td>	Peak Hour Factor	0.87	0.87	0.86	0.86	0.83	0.83	
Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type TWLTL Median storage veh) Upstream signal (ft) 1100 875 PX, platoon unblocked vC, conflicting volume 156 VC, stage 1 conf vol VC, stage 2 conf vol 156 VC, stage 2 conf vol 156 VC, stage 2 conf vol 156 VC, stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 154 VC, conflot 184 VC, unblocked vol 156 VC, a stage (s) 156 VC, a stage (s) 154 VC, conflot 184 VC, unblocked vol 156 VC, a stage (s) 154 VC, conflot 184 VC, unblocked vol 156 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 154 VC, a stage (s) 155 VC, a stage (s) 155 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC, a stage (s) 156 VC,	Hourly flow rate (vph)	0	184	156	0	87	160	
Walking Speed (ft/s)         Percent Blockage         Right turn flare (veh)         Median type       TWLTL         Median storage veh)       1         Upstream signal (ft)       1100       875         pX, platon unblocked       156         vC1, stage 1 conf vol       156         vC2, stage 2 conf vol       184         vCu, unblocked vol       156         vC2, stage 2 conf vol       184         vCu, unblocked vol       156         vC2, stage 2 conf vol       184         vCu, unblocked vol       156         vC2, stage 2 conf vol       184         vC1, stage 1       6.4         6.2       5.4         tF (s)       2.2       3.5       3.3         p0 queue free %       100       877       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       7       0         Volume Left       0       0       160       cSH       1700         Volume to Capacity       0.11       0.99       99       Volume Left       0.011 <td>Pedestrians</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Pedestrians							
Percent Blockage       TWLTL         Median type       TWLTL         Median type       1         Upstream signal (ft)       1100       875         pX, platoon unblocked       5         vC, conflicting volume       156       340       156         vC2, stage 1 conf vol       184       56       54         vC2, stage 2 conf vol       184       56       54         vC1, stage 1 conf vol       156       340       156         vC2, stage 2 conf vol       156       54       54         tF (s)       2.2       3.5       3.3         p0 queue free %       100       87       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       7       0         Volume Eaft       0       0       160       cSH       1700         CSH       1700       1700       692       890       160         Volume Left       0       0       160       160       160         cSH       1700       1700       692       890       160	Lane Width (ft)							
Percent Blockage       TWLTL         Median type       TWLTL         Median type       1         Upstream signal (ft)       1100       875         pX, platoon unblocked       5         vC, conflicting volume       156       340       156         vC2, stage 1 conf vol       184       56       54         vC2, stage 2 conf vol       184       56       54         vC1, stage 1 conf vol       156       340       156         vC2, stage 2 conf vol       156       54       54         tF (s)       2.2       3.5       3.3         p0 queue free %       100       87       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       7       0         Volume Eaft       0       0       160       cSH       1700         CSH       1700       1700       692       890       160         Volume Left       0       0       160       160       160         cSH       1700       1700       692       890       160	Walking Speed (ft/s)							
Right turn flare (veh)       TWLTL         Median type       TWLTL         Median storage veh)       1         Upstream signal (ft)       1100       875         pX, platoon unblocked       340       156         vC, conflicting volume       156       340       156         vC1, stage 1 conf vol       156       156         vC2, stage 2 conf vol       184       156         vC2, stage 2 conf vol       184       156         vC2, stage 2 conf vol       184       156         vC2, stage (s)       5.4       5.4         tf (s)       2.2       3.5       3.3         p0 queue free %       100       87       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       87       0         Volume Right       0       0       160       cSH       1700       1700       692       890         Volume Right       0       0       160       cSH       1700       1700       692       890       160       cSH       1700       1700       160								
Median type       TWLTL         Median storage veh)       1         Upstream signal (ft)       1100       875         pX, platoon unblocked       vC, conflicting volume       156         vC, conflicting volume       156       340       156         vC2, stage 1 conf vol       156       vC2, stage 2 conf vol       184         vCu, unblocked vol       156       340       156         tC, single (s)       4.1       6.4       6.2         tC, stage (s)       5.4       5.4       100       87       82         cM capacity (veh/h)       1424       692       890       100       87       82         Volume Total       184       156       87       160       Volume Total       184       160         Volume Right       0       0       87       0       160       160       160         Volume Right       0       0       160       2890       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       16								
Median storage veh)       1         Upstream signal (ft)       1100       875         pX, platoon unblocked       156         vC, conflicting volume       156         vC1, stage 1 conf vol       156         vC2, stage 2 conf vol       184         vCu, unblocked vol       156         vC2, stage 2 conf vol       184         vCu, unblocked vol       156         tC, single (s)       4.1         tC, 2 stage (s)       5.4         tF (s)       2.2         ueue free %       100         100       87         82         cM capacity (veh/h)       1424         692       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       7       0         Volume Left       0       0       160       cSH       1700       692       890         Volume to Capacity       0.11       0.09       0.13       0.18       Queue Length 95th (ft)       0       0       160         cSH       1700       0       0.11       16       Control Delay (s)       0.0       0.11       16					Т	WITI		
Upstream signal (ft)         1100         875           pX, platon unblocked         340         156           vC, conflicting volume         156         340         156           vC1, stage 1 conf vol         156         340         156           vC2, stage 2 conf vol         184         vCu, unblocked vol         156         340         156           vC1, stage 2 conf vol         156         340         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         156         157         150         156         156         156         156         157         160         156         156         157         160         156         156         156         156         156         160         156         156         160         156 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
pX, platoon unblocked vC, conflicting volume 156 340 156 vC1, stage 1 conf vol 156 vC2, stage 2 conf vol 156 vC2, stage 2 conf vol 156 tC, single (s) 4.1 6.4 6.2 tC, 2 stage (s) 5.4 tF (s) 2.2 3.5 3.3 p0 queue free % 100 87 82 cM capacity (veh/h) 1424 692 890 Direction, Lane # EB 1 WB 1 SB 1 SB 2 Volume Total 184 156 87 160 Volume Left 0 0 87 0 Volume Right 0 0 0 160 cSH 1700 1700 692 890 Volume to Capacity 0.11 0.09 0.13 0.18 Queue Length 95th (ft) 0 0 11.0 9.9			1100	875				
vC, conflicting volume       156       340       156         vC1, stage 1 conf vol       156       156         vC2, stage 2 conf vol       184         vC2, unblocked vol       156       340       156         tC, single (s)       4.1       6.4       6.2         tC, 2 stage (s)       5.4       5.4         tF (s)       2.2       3.5       3.3         p0 queue free %       100       87       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 2       SB 2         Volume Total       184       156       87       0         Volume Left       0       0       890       160         Volume to Capacity       0.11       0.09       0.13       0.18         Queue Length 95th (ft)       0       0       160       160         cSH       1700       1700       692       890       160         Volume to Capacity       0.11       0.09       0.13       0.18       160         volume to Supposity       0.10       0.13       0.18       160       160         control Delay (s)       0.0			1100	010				
vC1, stage 1 conf vol       156         vC2, stage 2 conf vol       184         vCu, unblocked vol       156       340       156         tC, single (s)       4.1       6.4       6.2         tC, 2 stage (s)       5.4       5.4       5.4         tF (s)       2.2       3.5       3.3         p0 queue free %       100       87       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       87       0         Volume Left       0       0       890       160         vSH       1700       1700       692       890         Volume to capacity       0.11       0.09       0.13       0.18         Queue Length 95th (ft)       0       0       11       16         Control Delay (s)       0.0       0.0       11.0       9.9		156				340	156	
vC2, stage 2 conf vol       184         vCu, unblocked vol       156       340       156         tC, single (s)       4.1       6.4       6.2         tC, 2 stage (s)       5.4       5.4         tF (s)       2.2       3.5       3.3         p0 queue free %       100       87       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       87       160         Volume Right       0       0       160       cSH       1700       692       890         Volume to Capacity       0.11       0.09       0.13       0.18       Queue Length 95th (ft)       0       11       16         Control Delay (s)       0.0       0.0       11.0       9.9       11       16		100					100	
vCu, unblocked vol       156       340       156         tC, single (s)       4.1       6.4       6.2         tC, 2 stage (s)       5.4       5.4         tF (s)       2.2       3.5       3.3         p0 queue free %       100       87       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       87       0         Volume Left       0       0       160       cSH       1700       1700       692       890         Volume to Capacity       0.11       0.09       0.13       0.18       160       160       160       1700       1700       692       890       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160       160								
tC, single (s)       4.1       6.4       6.2         tC, 2 stage (s)       5.4         tF (s)       2.2       3.5       3.3         p0 queue free %       100       87       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       87       160         Volume Left       0       0       890       160         Volume Right       0       0       160       160         cSH       1700       1700       692       890         Volume to Capacity       0.11       0.09       0.13       0.18         Queue Length 95th (ft)       0       0       11       16         Control Delay (s)       0.0       0.0       11.0       9.9		156					156	
Ch (2, 2 stage (s))       5.4         LF (s)       2.2         Stage (s)       5.4         LF (s)       100         Registry (veh/h)       1424         G92       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       87       160         Volume Left       0       0       160       160         cSH       1700       1700       692       890         Volume to Capacity       0.11       0.09       0.13       0.18         Queue Length 95th (ft)       0       0       11       16         Control Delay (s)       0.0       0.0       11.0       9.9								
tF (s)       2.2       3.5       3.3         p0 queue free %       100       87       82         cM capacity (veh/h)       1424       692       890         Direction, Lane #       EB 1       WB 1       SB 1       SB 2         Volume Total       184       156       87       160         Volume Eft       0       0       870       0         Volume Right       0       0       160       cSH       1700       692       890         Volume to Capacity       0.11       0.09       0.13       0.18       Queue Length 95th (ft)       0       11       16         Control Delay (s)       0.0       0.0       11.0       9.9       9       9		4.1					0.2	
p0 queue free %         100         87         82           cM capacity (veh/h)         1424         692         890           Direction, Lane #         EB 1         WB 1         SB 1         SB 2           Volume Total         184         156         87         160           Volume Left         0         0         160           CSH         1700         1700         692         890           Volume to Capacity         0.11         0.09         0.13         0.18           Queue Length 95th (ft)         0         0         11         16           Control Delay (s)         0.0         0.0         11.0         9.9		2.2					2.2	
CM capacity (veh/h)         1424         692         890           Direction, Lane #         EB 1         WB 1         SB 1         SB 2           Volume Total         184         156         87         160           Volume Left         0         0         87         0           Volume Right         0         0         160           CSH         1700         692         890           Volume to Capacity         0.11         0.09         0.13         0.18           Queue Length 95th (ft)         0         0         11         16           Control Delay (s)         0.0         0.0         11.0         9.9								
Direction, Lane #         EB 1         WB 1         SB 1         SB 2           Volume Total         184         156         87         160           Volume Left         0         0         87         0           Volume Right         0         0         160         622         890           Volume to Capacity         0.11         0.09         0.13         0.18         Queue Length 95th (ft)         0         11         16           Control Delay (s)         0.0         0.0         11.0         9.9         9         9								
Volume Total         184         156         87         160           Volume Left         0         0         87         0           Volume Right         0         0         160           cSH         1700         1700         692         890           Volume to Capacity         0.11         0.09         0.13         0.18           Queue Length 95th (ft)         0         0         11         16           Control Delay (s)         0.0         0.0         11.0         9.9	civi capacity (ven/n)	1424				692	890	
Volume Left         0         0         87         0           Volume Right         0         0         160         622         890           cSH         1700         1700         692         890         692         890           Volume to Capacity         0.11         0.09         0.13         0.18         0         0         11         16           Queue Length 95th (ft)         0         0.11         1.0         9.9         9         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         <					-			
Volume Right         0         0         160           cSH         1700         1700         692         890           Volume to Capacity         0.11         0.09         0.13         0.18           Queue Length 95th (ft)         0         0         11         16           Control Delay (s)         0.0         0.0         11.0         9.9	Volume Total	184	156	87	160			
cSH         1700         1700         692         890           Volume to Capacity         0.11         0.09         0.13         0.18           Queue Length 95th (ft)         0         0         11         16           Control Delay (s)         0.0         0.0         11.0         9.9	Volume Left	0	0	87	0			
Volume to Capacity         0.11         0.09         0.13         0.18           Queue Length 95th (ft)         0         0         11         16           Control Delay (s)         0.0         0.0         11.0         9.9	Volume Right	0	0	0	160			
Queue Length 95th (ft)         0         0         11         16           Control Delay (s)         0.0         0.0         11.0         9.9	cSH	1700	1700	692	890			
Control Delay (s) 0.0 0.0 11.0 9.9	Volume to Capacity	0.11	0.09	0.13	0.18			
	Queue Length 95th (ft)	0	0	11	16			
	Control Delay (s)	0.0	0.0	11.0	9.9			
	Lane LOS			В	А			
Approach Delay (s) 0.0 0.0 10.3	Approach Delay (s)	0.0	0.0	10.3				
Approach LOS B	Approach LOS			В				
Intersection Summary	Intersection Summary							
Average Delay 4.3				4.3				
Intersection Capacity Utilization 22.0% ICU Level of Service A		tilization	ר ר		IC		of Service	Α
Analysis Period (min) 15								~
				15				

Synchro 6 Report Page 18 K:\SND_TPTO\095707000\Synchro\EX PM.sy7 KHA Kimley-Horn and Associates, Inc.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
ane Configurations	٦	Ţ.		74	Tr			els.			44.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	18	212	14	17	103	15	5	8	29	27	10	3
Peak Hour Factor	0.86	0.86	0.86	0.84	0.84	0.84	0.81	0.81	0.81	0.93	0.93	0.9
Hourly flow rate (vph)	21	247	16	20	123	18	6	10	36	29	11	4(
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1314			661							
oX, platoon unblocked												
C, conflicting volume	140			263			505	477	255	501	477	132
VC1, stage 1 conf vol												
vC2, stage 2 conf vol												
Cu, unblocked vol	140			263			505	477	255	501	477	132
C, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
C, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			99	98	95	93	98	96
cM capacity (veh/h)	1443			1301			439	472	784	441	473	918
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	21	263	20	140	52	80						
Volume Left	21	0	20	0	6	29						
Volume Right	0	16	0	18	36	40						
cSH	1443	1700	1301	1700	643	603						
Volume to Capacity	0.01	0.15	0.02	0.08	0.08	0.13						
Queue Length 95th (ft)	1	0	1	0	7	11						
Control Delay (s)	7.5	0.0	7.8	0.0	11.1	11.9						
Lane LOS	А		А		В	В						
Approach Delay (s)	0.6		1.0		11.1	11.9						
Approach LOS					В	В						
Intersection Summary												
Average Delay			3.2									
ntersection Capacity Ut	ilization		30.7%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 21: Newton Ave & E	vans	St						Ex	kisting T		ions w lan: PM	
	۶	-	$\mathbf{\hat{z}}$	4	+	×	1	1	۲	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			10			1	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	46	16	5	27	7	3	15	6	8	8	11
Peak Hour Factor	0.78	0.78	0.78	0.89	0.89	0.89	0.68	0.68	0.68	0.75	0.75	0.75
Hourly flow rate (vph)	17	59	21	6	30	8	4	22	9	11	11	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	38			79			168	152	69	168	158	34
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	38			79			168	152	69	168	158	34
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	97	99	99	99	99
cM capacity (veh/h)	1572			1519			767	729	994	762	723	1039
, ,								. 20			. 20	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	96	44	35	36								
Volume Left	17	6	4	11								
Volume Right	21	8	9	15								
cSH	1572	1519	786	840								
Volume to Capacity	0.01	0.00	0.04	0.04								
Queue Length 95th (ft)	1	0	4	3								
Control Delay (s)	1.3	1.0	9.8	9.5								
Lane LOS	A	Α	A	A								
Approach Delay (s)	1.3	1.0	9.8	9.5								
Approach LOS			A	A								
Intersection Summary												
Average Delay			4.1									
Intersection Capacity Ut	ilizatior	1	16.1%	- 10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									
· · · ·												

Barrio Logan CPU 22: Main St & Evans	s St						Existing Conditions w LRT Timing Plan: PM Peak
	≯	+	Ļ	*	1	~	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		ŝ,	to		¥		
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	5	87	78	9	10	7	
Peak Hour Factor	0.80	0.80	0.77	0.77	0.44	0.44	
Hourly flow rate (vph)	6	109	101	12	23	16	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							

None

228 107

6.2

3.3

98

ICU Level of Service

228 107

6.4

3.5

97

757 947

1318

EB1 WB1 SB1

0.07

0

39

0 23

16

825

4

9.6

9.6

А

Α

1.6 18.7%

15

0.05

115 113

1476 1700

0.4 0.0

6

0 12

0

0.4 0.0

А

0.00

113

4.1

2.2

100

1476

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	×	ţ,		λi.	1÷			e la			4.	-
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	101	135	36	29	75	54	63	134	18	66	100	1
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.91	0.9
Hourly flow rate (vph)	111	148	40	32	82	59	69	147	20	73	110	1
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	111	188	32	140	236	197						
Volume Left (vph)	111	0	32	0	69	73						
Volume Right (vph)	0	40	0	59	20	14						
Hadj (s)	0.53	-0.11	0.53	-0.26	0.04	0.06						
Departure Headway (s)	6.6	5.9	6.8	6.0	5.6	5.7						
Degree Utilization, x	0.20	0.31	0.06	0.23	0.37	0.31						
Capacity (veh/h)	513	571	487	553	595	587						
Control Delay (s)	10.1	10.4	9.0	9.6	11.8	11.2						
Approach Delay (s)	10.2		9.5		11.8	11.2						
Approach LOS	В		A		В	В						
Intersection Summary												
Delay			10.7									
HCM Level of Service			В									
Intersection Capacity Uti	lization		36.9%	10	CU Leve	el of Serv	vice		А			
Analysis Period (min)			15									

Right turn flare (veh) Median type

Median storage veh)

Upstream signal (ft) pX, platoon unblocked vC, conflicting volume 113

vC1, stage 1 conf vol vC2, stage 2 conf vol vCu, unblocked vol

tC, single (s) tC, 2 stage (s) tF (s)

p0 queue free %

cM capacity (veh/h)

Direction, Lane # Volume Total

Volume to Capacity

Control Delay (s)

Approach LOS

Approach Delay (s)

Lane LOS

Queue Length 95th (ft)

Intersection Summary Average Delay Intersection Capacity Utilization

Analysis Period (min)

Volume Left

cSH

Volume Right

А

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Barrio Logan CPU 24: National Ave & S	Samps	on St						E>		Condit Timing F		
	≯	-	$\mathbf{r}$	4	+	•	•	1	1	1	ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ľ	ţ,		J.	ħ			1			\$	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99			0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.96			0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1759	1830		1753	1766			1777			1757	
Flt Permitted	0.68	1.00		0.67	1.00			0.98			0.89	
Satd. Flow (perm)	1264	1830		1237	1766			1748			1593	
Volume (vph)	25	111	12	21	70	28	13	77	30	36	33	18
Peak-hour factor, PHF	0.90	0.90	0.90	0.85	0.85	0.85	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	28	123	13	25	82	33	14	85	33	40	36	20
RTOR Reduction (vph)	0	8	0	0	26	0	0	13	0	0	8	0
Lane Group Flow (vph)	28	128	0	25	89	0	0	119	0	0	88	0
Confl. Peds. (#/hr)	7		11	11		7	25		21	21		25
Confl. Bikes (#/hr)			3			3			6			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.7	8.7		8.7	8.7			24.0			24.0	
Effective Green, g (s)	8.7	8.7		8.7	8.7			24.0			24.0	
Actuated g/C Ratio	0.21	0.21		0.21	0.21			0.59			0.59	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	270	391		264	377			1031			939	
v/s Ratio Prot		c0.07			0.05							
v/s Ratio Perm	0.02			0.02				c0.07			0.06	
v/c Ratio	0.10	0.33		0.09	0.24			0.12			0.09	
Uniform Delay, d1	12.9	13.5		12.8	13.2			3.7			3.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.5		0.2	0.3			0.1			0.0	
Delay (s)	13.0	14.0		13.0	13.6			3.7			3.7	
Level of Service	В	B		В	B			A			A	_
Approach Delay (s) Approach LOS		13.9 B			13.5 B			3.7 A			3.7 A	
								~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
Intersection Summary) a las s		0.1			und of O			^			
HCM Average Control E			9.4	F	ICINI Le	vel of S	ervice		A			_
HCM Volume to Capacit			0.17	_	um of I	oot time -	(a)		0.0			
Actuated Cycle Length (40.7 39.1%			ost time			8.0 A			
Intersection Capacity Ut	inzation		39.1%	1	CO Lev	el of Se	vice		A			
Analysis Period (min) c Critical Lane Group			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		đ,			4			de.			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	23	25	12	0	16	6	6	63	3	5	42	15
Peak Hour Factor	0.88	0.88	0.88	0.79	0.79	0.79	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	26	28	14	0	20	8	7	73	3	6	49	17
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	68	28	84	72								
Volume Left (vph)	26	0	7	6								
Volume Right (vph)	14	8	3	17								
Hadj (s)	-0.01	-0.13	0.03	-0.10								
Departure Headway (s)	4.3	4.2	4.2	4.1								
Degree Utilization, x	0.08	0.03	0.10	0.08								
Capacity (veh/h)	811	822	825	851								
Control Delay (s)	7.6	7.3	7.7	7.5								
Approach Delay (s)	7.6	7.3	7.7	7.5								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			7.6									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	1	23.7%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU 26: Main St & Samp	son S	t						E>	disting T		tions w Plan: PN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		¢.			\$			1			44	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	13	82	8	27	44	8	5	46	49	8	27	10
Peak Hour Factor	0.74	0.74	0.74	0.73	0.73	0.73	0.81	0.81	0.81	0.80	0.80	0.80
Hourly flow rate (vph)	18	111	11	37	60	11	6	57	60	10	34	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	139	108	123	56								
Volume Left (vph)	18	37	6	10								
Volume Right (vph)	11	11	60	13								
Hadj (s)	0.01	0.04	-0.25	-0.06								
Departure Headway (s)	4.5	4.5	4.3	4.6								
Degree Utilization, x	0.17	0.14	0.15	0.07								
Capacity (veh/h)	773	752	788	732								
Control Delay (s)	8.4	8.2	8.0	7.9								
Approach Delay (s)	8.4	8.2	8.0	7.9								
Approach LOS	Α	А	А	A								
Intersection Summary												
Delay			8.2									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	1	28.0%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 27: Harbor Dr & Sar	npson	St									tions w Plan: PM	
	ঁ≯	-	\mathbf{r}	4	+	•	1	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ž	仲弘		×	* 1+			1			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	3467		1770	3508			1781			1779	
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.95	
Satd. Flow (perm)	1770	3467		1770	3508			1710			1703	
Volume (vph)	56	748	5	19	198	8	23	111	41	14	66	26
Peak-hour factor, PHF	0.87	0.87	0.87	0.81	0.81	0.81	0.71	0.71	0.71	0.85	0.85	0.85
Adj. Flow (vph)	64	860	6	23	244	10	32	156	58	16	78	31
RTOR Reduction (vph)	0	1	0	0	3	0	0	10	0	0	11	(
Lane Group Flow (vph)	64	865	0	23	251	0	0	236	0	0	114	(
Confl. Peds. (#/hr)			15			29	7		4	4		7
Confl. Bikes (#/hr)			12						7			7
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases		1426			1826			12			16 1 5	
Permitted Phases	Ū			10			12			16 1 5	1010	
Actuated Green, G (s)	5.9	30.7		2.1	26.9			13.2			23.6	
Effective Green, g (s)	5.9	30.7		2.1	26.9			13.2			23.6	
Actuated g/C Ratio	0.07	0.38		0.03	0.33			0.16			0.29	
Clearance Time (s)	4.0			4.0				4.0				
Vehicle Extension (s)	3.0			3.0				3.0				
Lane Grp Cap (vph)	130	1324		46	1174			281			500	
v/s Ratio Prot	c0.04	c0.25		0.01	0.07			201			000	
v/s Ratio Perm	00.01	00.20		0.01	0.01			c0.14			c0.07	
v/c Ratio	0.49	0.65		0.50	0.21			0.84			0.23	
Uniform Delay, d1	35.8	20.5		38.6	19.2			32.6			21.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.02	
Incremental Delay, d2	2.9	1.2		8.3	0.1			19.3			0.2	
Delay (s)	38.7	21.6		46.9	19.3			51.9			22.2	
Level of Service	D	C		10.0 D	B			D 1.0			C	
Approach Delay (s)	-	22.8			21.6			51.9			22.2	
Approach LOS		C			C			D			С	
Intersection Summary		-			-			_			-	
HCM Average Control E	Jolay		27.1		ICM Lev	vel of S	onvice		С			_
HCM Volume to Capaci			0.62	- F		1013	ervice					
Actuated Cycle Length (80.4	c	Sum of le	oet time	(c)		24.0			
Intersection Capacity Ut		,	48.8%		CU Leve		· · /		24.0 A			
Analysis Period (min)	.mzau0i		40.0%	IV.	SO Leve	51 01 30	VICE		A			
c Critical Lane Group			13									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
ane Configurations	ž	ĥ			\$			4.			1	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
/olume (veh/h)	10	162	8	8	124	1	3	25	17	4	14	
Peak Hour Factor	0.90	0.90	0.90	0.81	0.81	0.81	0.66	0.66	0.66	0.68	0.68	0.6
Hourly flow rate (vph)	11	180	9	10	153	1	5	38	26	6	21	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Jpstream signal (ft)		641										
X, platoon unblocked												
C, conflicting volume	154			189			404	381	184	420	385	15
/C1, stage 1 conf vol												
/C2, stage 2 conf vol												
Cu, unblocked vol	154			189			404	381	184	420	385	15
C, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.
C, 2 stage (s)												
F (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.
00 queue free %	99			99			99	93	97	99	96	9
cM capacity (veh/h)	1426			1385			527	544	858	493	541	893
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
/olume Total	11	189	164	68	40							
/olume Left	11	0	10	5	6							
/olume Right	0	9	1	26	13							
cSH	1426	1700	1385	629	613							
Volume to Capacity	0.01	0.11	0.01	0.11	0.06							
Queue Length 95th (ft)	1	0	1	9	5							
Control Delay (s)	7.5	0.0	0.5	11.4	11.3							
_ane LOS	Α		A	В	В							
Approach Delay (s)	0.4		0.5	11.4	11.3							
Approach LOS				В	В							
ntersection Summary												
Average Delay			3.0									
ntersection Capacity Ut	ilization		23.2%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 29: National Ave & 2	26th St	t						Ex	0		tions w Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Т.		γí	Þ			40			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	155	23	35	117	54	14	19	34	77	21	2
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.73	0.73	0.73	0.89	0.89	0.89
Hourly flow rate (vph)	5	167	25	38	127	59	19	26	47	87	24	2
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	5	191	38	186	92	112						
Volume Left (vph)	5	0	38	0	19	87						
Volume Right (vph)	0	25	0	59	47	2						
Hadj (s)	0.53	-0.06	0.53	-0.19	-0.23	0.18						
Departure Headway (s)	5.8	5.2	5.8	5.1	4.9	5.2						
Degree Utilization, x	0.01	0.28	0.06	0.26	0.12	0.16						
Capacity (veh/h)	584	659	592	680	672	630						
Control Delay (s)	7.7	9.0	8.0	8.6	8.6	9.3						
Approach Delay (s)	9.0		8.5		8.6	9.3						
Approach LOS	A		A		Α	А						
Intersection Summary												
Delay			8.8									
HCM Level of Service			А									
Intersection Capacity Ut	ilization	l.	36.8%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU	Existing Conditions w LRT
30: National Ave & I-5 SB Off-ramp	Timing Plan: PM Peak

	+	7	4	ł	•	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	ţ,			44	N.	۴	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	275	10	31	194	32	296	
Peak Hour Factor	0.95	0.95	0.88	0.88	0.80	0.80	
Hourly flow rate (vph)	289	11	35	220	40	370	
Pedestrians					36		
Lane Width (ft)					12.0		
Walking Speed (ft/s)					4.0		
Percent Blockage					3		
Right turn flare (veh)							
Median type					None		
Median storage veh)							
Upstream signal (ft)				670			
pX, platoon unblocked							
vC, conflicting volume			336		511	331	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			336		511	331	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			97		91	43	
cM capacity (veh/h)			1183		463	645	
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2		
Volume Total	300	109	147	40	370		
Volume Left	0	35	0	40	0		
Volume Right	11	0	0	0	370		
cSH	1700	1183	1700	463	645		
Volume to Capacity	0.18	0.03	0.09	0.09	0.57		
Queue Length 95th (ft)	0	2	0	7	91		
Control Delay (s)	0.0	2.8	0.0	13.5	17.8		
Lane LOS		А		В	С		
Approach Delay (s)	0.0	1.2		17.4			
Approach LOS				С			
Intersection Summary							
Average Delay			7.7				
Intersection Capacity Ut	ilizatior	۱	40.2%	10	CU Leve	el of Servi	ice
Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		đ,)r	4	1		4	r		1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	14	167	7	19	45	28	2	38	80	26	6	8
Peak Hour Factor	0.82	0.82	0.82	0.72	0.72	0.72	0.88	0.88	0.88	0.67	0.67	0.67
Hourly flow rate (vph)	17	204	9	26	62	39	2	43	91	39	9	12
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1					
Volume Total (vph)	229	26	63	39	45	91	60					
Volume Left (vph)	17	26	0	0	2	0	39					
Volume Right (vph)	9	0	0	39	0	91	12					
Hadj (s)	0.03	1.10	0.03	-0.67	0.04	-0.41	0.04					
Departure Headway (s)	4.4	6.0	5.0	3.2	4.8	3.2	4.7					
Degree Utilization, x	0.28	0.04	0.09	0.03	0.06	0.08	0.08					
Capacity (veh/h)	798	573	696	1121	701	1121	705					
Control Delay (s)	9.1	8.1	7.2	5.1	8.1	6.5	8.2					
Approach Delay (s)	9.1	6.8			7.0		8.2					
Approach LOS	A	Α			Α		А					
Intersection Summary												
Delay			8.0									
HCM Level of Service			А									
Intersection Capacity Uti	ilizatior	ı	32.9%	10	CU Leve	el of Sei	rvice		А			
Analysis Period (min)			15									

Barrio Logan CPU 32: Harbor Dr & Sch	ley St	t						Ex			tions w Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ተ ኩ			竹子						1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0						4.0	
Lane Util. Factor	1.00	0.95			0.95						1.00	
Frpb, ped/bikes	1.00	1.00			1.00						0.99	
Flpb, ped/bikes	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			0.97						0.92	
Flt Protected	0.95	1.00			1.00						0.98	
Satd. Flow (prot)	1543	3539			3446						1569	
Flt Permitted	0.95	1.00			1.00						0.98	
Satd. Flow (perm)	1543	3539			3446						1569	
Volume (vph)	75	712	0	0	182	39	0	0	0	16	4	27
Peak-hour factor, PHF	0.95	0.95	0.95	0.81	0.81	0.81	0.25	0.25	0.25	0.69	0.69	0.69
Adj. Flow (vph)	79	749	0	0	225	48	0	0	0	23	6	39
RTOR Reduction (vph)	0	0	0	0	14	0	0	0	0	0	30	0
Lane Group Flow (vph)	79	749	0	0	259	0	0	0	0	0	38	0
Confl. Peds. (#/hr)			8	8					2	2		
Confl. Bikes (#/hr)									4			9
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot									Perm		
Protected Phases	13	1826			14 2 6						11 1 5	
Permitted Phases										11 1 5		
Actuated Green, G (s)	8.6	47.6			31.0						18.2	
Effective Green, g (s)	8.6	47.6			31.0						18.2	
Actuated g/C Ratio	0.11	0.58			0.38						0.22	
Clearance Time (s)	4.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	162	2059			1306						349	
v/s Ratio Prot	0.05	c0.21			0.08							
v/s Ratio Perm											0.02	
v/c Ratio	0.49	0.36			0.20						0.11	
Uniform Delay, d1	34.5	9.1			17.1						25.3	
Progression Factor	1.00	1.00			1.00						1.14	
Incremental Delay, d2	2.3	0.1			0.1						0.1	
Delay (s)	36.8	9.2			17.1						28.9	
Level of Service	D	А			В						С	
Approach Delay (s)		11.8			17.1			0.0			28.9	
Approach LOS		В			В			A			С	
Intersection Summary												
HCM Average Control D	elay		14.1	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capacit			0.29									
Actuated Cycle Length (81.8	S	Sum of I	ost time	(s)		16.0			
Intersection Capacity Ut	ilizatior	า	36.6%	10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU 33: National Ave & 2	28th St	t						E			tions w Plan: PN	
	≯	+	*	4	ł	*	<	1	1	1	Ŧ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ሳቀ	74	γí	Þ			4	ř		1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	0.96			1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1597	1784			1762	1509		1696	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.93	1.00		0.92	
Satd. Flow (perm)	1770	3539	1583	1597	1784			1647	1509		1573	
Volume (vph)	94	434	85	162	327	128	18	98	46	70	210	102
Peak-hour factor, PHF	0.87	0.87	0.87	0.71	0.71	0.71	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	499	98	228	461	180	20	107	50	76	228	111
RTOR Reduction (vph)	0	0	63	0	10	0	0	0	33	0	9	0
Lane Group Flow (vph)	108	499	35	228	631	0	0	127	17	0	406	0
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8		-	2	0	•	6	
Permitted Phases	0.5	00.0	4	447	00.0		2	00.0	2	6	00.0	
Actuated Green, G (s)	8.5	30.0	30.0	14.7	36.2			28.3	28.3		28.3	
Effective Green, g (s)	8.5	30.0	30.0	14.7	36.2			28.3	28.3		28.3	
Actuated g/C Ratio Clearance Time (s)	0.10	0.35	0.35	0.17	0.43			0.33	0.33		0.33	
Vehicle Extension (s)	3.0	3.0	4.0	4.0	4.0			4.0	3.0		4.0	
	177	1249	559	276	760			548	502		524	
Lane Grp Cap (vph) v/s Ratio Prot		0.14	228	c0.14	c0.35			548	502		524	
v/s Ratio Perm	0.06	0.14	0.02	CO. 14	0.35			0.08	0.01		c0.26	
v/c Ratio	0.61	0.40	0.02	0.83	0.83			0.08	0.01		0.77	
Uniform Delay, d1	36.7	20.7	18.2	33.9	21.7			20.5	19.1		25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	6.1	0.2	0.0	17.9	7.7			0.2	0.0		7.0	
Delay (s)	42.8	20.9	18.2	51.9	29.4			20.7	19.1		32.5	
Level of Service	D	20.0 C	B	D	C			C	B		C	
Approach Delay (s)	_	23.9		_	35.3			20.3			32.5	
Approach LOS		С			D			С			С	
Intersection Summary												
HCM Average Control D	elav		29.8	F	HCM Le	vel of S	ervice		С			
HCM Volume to Capacit			0.79		20				5			
Actuated Cycle Length (85.0	5	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut			68.0%			el of Se			C			
Analysis Period (min)			15									
c Critical Lane Group			.0									

c Critical Lane Group

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	T T		EDR	VVDL Vi		WDR	NDL \\	44		JDL N	41	SDF
	1900	1000	1900	1900	1000	1900	1900	1900	1900			1900
Ideal Flow (vphpl) Total Lost time (s)	4.0	1900 4.0	1900	4.0	1900 4.0	1900	4.0	4.0	4.0	1900 4.0	1900 4.0	190
				1.00								
Lane Util. Factor Frt	1.00	1.00 0.98			1.00 0.88		1.00 1.00	0.95	1.00 0.85	1.00 1.00	0.95 0.99	
	1.00			1.00								
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1687	1748		1687	1567		1770	3539	1583	1770	3519	
Flt Permitted	0.71	1.00		0.55	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1253	1748		982	1567		1770	3539	1583	1770	3519	
Volume (vph)	42	131	15	7	12	43	7	516	203	245	693	28
Peak-hour factor, PHF	0.84	0.84	0.84	0.69	0.69	0.69	0.89	0.89	0.89	0.93	0.93	0.93
Adj. Flow (vph)	50	156	18	10	17	62	8	580	228	263	745	3
RTOR Reduction (vph)	0	8	0	0	52	0	0	0	117	0	2	(
Lane Group Flow (vph)	50	166	0	10	27	0	8	580	111	263	773	(
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)	9.0	9.0		9.0	9.0		0.7	28.6	28.6	9.0	36.9	
Effective Green, g (s)	9.0	9.0		9.0	9.0		0.7	28.6	28.6	9.0	36.9	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.01	0.49	0.49	0.15	0.63	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	192	268		151	241		21	1727	773	272	2216	
v/s Ratio Prot		c0.10			0.02		0.00	0.16		c0.15	c0.22	
v/s Ratio Perm	0.04			0.01					0.07			
v/c Ratio	0.26	0.62		0.07	0.11		0.38	0.34	0.14	0.97	0.35	
Uniform Delay, d1	21.9	23.2		21.2	21.4		28.7	9.2	8.3	24.7	5.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	4.4		0.2	0.2		11.2	0.5	0.4	45.0	0.4	
Delay (s)	22.6	27.6		21.4	21.6		39.9	9.7	8.7	69.7	5.6	
Level of Service	C	C		C	C		D	A	A	E	A	
Approach Delay (s)		26.5			21.5		-	9.7		_	21.8	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM Average Control D	elay		17.7	H	ICM Le	vel of Se	ervice		В			
HCM Volume to Capacit	ty ratio		0.50									
Actuated Cycle Length (s)		58.6	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut			46.8%			el of Ser	· · /		А			
Analysis Period (min)			15									

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	-	-	•	•	-		7		~		+	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	শ	仲孙		74	41		45	作る		۲	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.90		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1733	3508		1762	3113		1736	3307		1736	3261	
Flt Permitted	0.42	1.00		0.38	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	758	3508		708	3113		1736	3307		1736	3261	
Volume (vph)	174	360	19	78	121	238	23	607	140	294	487	7
Peak-hour factor, PHF	0.80	0.80	0.80	0.83	0.83	0.83	0.84	0.84	0.84	0.86	0.86	0.8
Adj. Flow (vph)	218	450	24	94	146	287	27	723	167	342	566	9
RTOR Reduction (vph)	0	5	0	0	199	0	0	22	0	0	13	
Lane Group Flow (vph)	218	469	0	94	234	0	27	868	0	342	645	
Confl. Peds. (#/hr)	27		12	12		27			88			20
Confl. Bikes (#/hr)			8			3						
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	4%	4%	4%	4%	4%	119
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	25.3	25.3		25.3	25.3		2.5	26.9		18.3	42.7	
Effective Green, g (s)	25.3	25.3		25.3	25.3		2.5	26.9		18.3	42.7	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.03	0.33		0.22	0.52	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	232	1076		217	955		53	1078		385	1688	
v/s Ratio Prot		0.13			0.08		0.02	c0.26		c0.20	0.20	
v/s Ratio Perm	c0.29			0.13								
v/c Ratio	0.94	0.44		0.43	0.25		0.51	0.81		0.89	0.38	
Uniform Delay, d1	27.9	22.9		22.9	21.4		39.4	25.4		31.1	12.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	42.1	0.3		1.4	0.1		7.5	4.5		21.1	0.1	
Delay (s)	69.9	23.2		24.3	21.6		46.9	29.9		52.3	12.1	
Level of Service	E	С		С	С		D	С		D	В	
Approach Delay (s)		37.9			22.1			30.4			25.8	
Approach LOS		D			С			С			С	
Intersection Summary												
HCM Average Control E	Delay		29.2	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.87									
Actuated Cycle Length (82.5	S	um of I	ost time	(s)		12.0			
Intersection Capacity Ut		1	82.0%			el of Sei			E			
Analysis Period (min)			15									
c Critical Lane Group												

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Barrio Logan CPU <u>36: Harbor Dr & 28t</u>	h St							Ex	0		tions w Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ሳቀ	2 ⁴	μ,	44	7		de.		×.	4	*
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.94		1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	0.95	1.00
Satd. Flow (prot)	1703	3406	1309	1719	3438	1445		1826		1649	1657	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	0.95	1.00
Satd. Flow (perm)	1703	3406	1309	1719	3438	1445		1826		1649	1657	1531
Volume (vph)	156	543	1	8	202	221	1	133	0	480	12	13
Peak-hour factor, PHF	0.96	0.96	0.96	0.81	0.81	0.81	0.64	0.64	0.64	0.85	0.85	0.85
Adj. Flow (vph)	162	566	1	10	249	273	2	208	0	565	14	15
RTOR Reduction (vph)	0	0	1	0	0	181	0	0	0	0	0	10
Lane Group Flow (vph)	162	566	0	10	249	92	0	210	0	283	296	5
Confl. Peds. (#/hr)		000	69		2.0	80	, v	2.0	Ŭ	200	200	Ū
Confl. Bikes (#/hr)			2			00			4			2
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		custom	Prot		custom	Split	.,,,	. / 0	Split	. /0	Perm
Protected Phases		1626	Justom		1226	13	14	14		1 13 5	13 1 5	1 Chin
Permitted Phases		1020	16	10	1220	12	17	17		1 10 0	10 1 0	1513
Actuated Green, G (s)	14.0	42.2	36.0	1.2	29.4	42.6		21.9		28.8	28.8	28.8
Effective Green, g (s)	14.0	42.2	36.0	1.2	29.4	42.6		21.9		28.8	28.8	28.8
Actuated g/C Ratio	0.11	0.33	0.29	0.01	0.23	0.34		0.17		0.23	0.23	0.23
Clearance Time (s)	4.0	0.00	4.0	4.0	0.20	4.0		4.0		0.20	0.20	0.20
Vehicle Extension (s)	3.0		3.0	3.0		3.0		3.0				
Lane Grp Cap (vph)	189	1140	374	16	802	488		317		377	378	350
v/s Ratio Prot	c0.10	c0.17	3/4	0.01	0.07	0.03		c0.12		0.17	c0.18	350
v/s Ratio Perm	CO. 10	0.17	0.00	0.01	0.07	0.03		CU. 12		0.17	CO. 10	0.00
v/c Ratio	0.86	0.50	0.00	0.62	0.31	0.03		0.66		0.75	0.78	0.00
Uniform Delay, d1	55.1	33.5	32.2	62.2	40.0	29.5		48.6		45.3	45.7	37.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.93	0.93	1.20
Incremental Delay, d2	29.7	0.3	0.0	57.6	0.2	0.2		5.1		8.1	10.1	0.0
	84.8	33.8	32.2	119.8	40.2	29.7		53.8		50.4	52.8	45.2
Delay (s) Level of Service	04.0 F	33.0 C	32.2 C	119.0 F	40.2 D	29.7 C		55.6 D		50.4 D	52.6 D	45.2 D
	г		C	г		C				U		U
Approach Delay (s)		45.1			36.3			53.8			51.5	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM Average Control E	Delay		45.6	H	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci	ty ratio		0.66									
Actuated Cycle Length (s)		126.1	S	Sum of I	ost time	(s)		28.0			
Intersection Capacity Ut	ilizatior	ı	66.3%	10	CU Lev	el of Sei	vice		С			
Analysis Period (min)			15									

Analysis Period (min) c Critical Lane Group

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Barrio Logan CPU 37: Boston Ave & I-5	5 SB C	Dn-ram	ıp					Ex			tions w Plan: PM	
	≯	+	*	4	Ļ	•	≺	1	1	1	Ļ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			1				
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	495	59	14	5	46	58	6	49	13	0	0	0
Peak Hour Factor	0.83	0.83	0.83	0.61	0.61	0.61	0.66	0.66	0.66	0.25	0.25	0.25
Hourly flow rate (vph)	596	71	17	8	75	95	9	74	20	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		657										
pX, platoon unblocked												
vC, conflicting volume	170			88			1412	1459	80	1468	1420	123
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	170			88			1412	1459	80	1468	1420	123
tC, single (s)	4.2			4.2			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	57			99			88	0	98	0	100	100
cM capacity (veh/h)	1377			1477			76	68	981	0	77	928
Dimention Leng #												
Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	684	179	103									
Volume Left	596	8	9									_
Volume Right	17	95	20									
cSH	1377	1477	84									_
Volume to Capacity	0.43	0.01	1.23									
Queue Length 95th (ft)	56	0	188									_
Control Delay (s)	8.9		260.7									
Lane LOS	A	A	F									_
Approach Delay (s)	8.9	0.4	260.7									
Approach LOS			F									
Intersection Summary												
Average Delay			34.2									_
Intersection Capacity Ut	ilizatior	1	48.4%	10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU 38: Main St & 32nd	St							E	kisting T	Condit iming P		
	۶	-	\mathbf{F}	∢	-	×	1	Ť	۲	1	ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	仲弘		J.	41.		¥.	4	P	ž	1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3277		1703	3235		1770	1863	1552	1770	1759	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3277		1703	3235		1770	1863	1552	1770	1759	
Volume (vph)	24	462	136	207	241	98	183	112	307	123	61	27
Peak-hour factor, PHF	0.85	0.85	0.85	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	28	544	160	233	271	110	206	126	345	138	69	30
RTOR Reduction (vph)	0	29	0	0	42	0	0	0	268	0	20	0
Lane Group Flow (vph)	28	675	0	233	339	0	206	126	77	138	79	0
Confl. Peds. (#/hr)			1			2			1			17
Confl. Bikes (#/hr)			4			1			7			5
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	1.7	21.5		13.4	33.2		11.9	17.0	17.0	8.4	13.5	
Effective Green, g (s)	1.7	21.5		13.4	33.2		11.9	17.0	17.0	8.4	13.5	
Actuated g/C Ratio	0.02	0.28		0.18	0.44		0.16	0.22	0.22	0.11	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	38	923		299	1408		276	415	346	195	311	
v/s Ratio Prot	0.02	c0.21		c0.14	0.10		c0.12	c0.07		0.08	0.05	
v/s Ratio Perm									0.05			
v/c Ratio	0.74	0.73		0.78	0.24		0.75	0.30	0.22	0.71	0.25	
Uniform Delay, d1	37.1	24.8		30.0	13.6		30.8	24.7	24.2	32.8	27.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	53.2	3.0		12.1	0.1		10.5	0.4	0.3	11.1	0.4	
Delay (s)	90.3	27.8		42.1	13.7		41.2	25.1	24.6	43.9	27.5	
Level of Service	F	С		D	В		D	С	С	D	С	
Approach Delay (s)		30.2			24.5			29.7			37.0	
Approach LOS		С			С			С			D	
Intersection Summary												
HCM Average Control D	elay		29.2	F	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit			0.64									
Actuated Cycle Length (s)		76.3	S	Sum of I	ost time	e (s)		16.0			
Intersection Capacity Ut	ilization		55.5%	10	CU Lev	el of Se	rvice		В			
Analysis Period (min)			15									

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Barrio Logan CPU 39: 32nd St & Waba	ish St							E>		Condi Fiming F		
	≯	-	-	*	4	+	•	۲	•	Ť	۲	1
Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations		25	To			4	đ		7	÷	75	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00	1.00	0.88	
Frt		1.00	0.90			1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00			0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1751	1679			1793	1566		1719	1810	2707	
Flt Permitted		0.62	1.00			0.70	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1151	1679			1313	1566		1719	1810	2707	
Volume (vph)	70	79	37	71	90	26	134	186	98	264	385	98
Peak-hour factor, PHF	0.92	0.87	0.87	0.87	0.82	0.82	0.82	0.92	0.93	0.93	0.93	0.92
Adj. Flow (vph)	76	91	43	82	110	32	163	202	105	284	414	107
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0 2%	167 4%	67 2%	0 2%	0 2%	142 2%	365 2%	0 4%	105 5%	284 5%	521 5%	0 5%
Heavy Vehicles (%)			Z %	Z 70		Z 70		4%				5%
Turn Type	Perm	Perm	4		Perm	4	Perm		Prot 5	2	custom	
Protected Phases Permitted Phases	4	4	4		4	4	4		5	2	23	
Actuated Green, G (s)	4	25.2	25.2		4	25.2	25.2		11.0	22.0	40.6	
Effective Green, g (s)		25.2	25.2			25.2	25.2		11.0	22.0	40.6	
Actuated g/C Ratio		0.28	0.28			0.28	0.28		0.12	0.24	0.45	
Clearance Time (s)		4.0	4.0			4.0	4.0		4.0	4.0	0.40	
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		321	468			366	437		209	440	1216	
v/s Ratio Prot		02.	0.04			000			0.06	c0.16		
v/s Ratio Perm		0.15				0.11	c0.23				0.19	
v/c Ratio		0.52	0.14			0.39	0.84		0.50	0.65	0.43	
Uniform Delay, d1		27.5	24.5			26.4	30.6		37.1	30.7	17.0	
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		1.5	0.1			0.7	12.9		1.9	3.2	0.2	
Delay (s)		29.0	24.6			27.0	43.6		39.0	33.9	17.2	
Level of Service		С	С			С	D		D	С	В	
Approach Delay (s)			27.1			39.0				25.0		
Approach LOS			С			D				С		
Intersection Summary												
HCM Average Control E			32.0	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.72									
Actuated Cycle Length (90.4		Sum of I				16.0			
Intersection Capacity Ut	ilizatior	ı	67.4%	10	CU Lev	el of Se	rvice		С			
Analysis Period (min)			15									

c Critical Lane Group

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Barrio	Logan CPU
20. 22.	d Ct & Wahaah

Existing Conditions w LRT Timing Plan: PM Peak

39: 32nd St & Wabash St

* * † * * * * * *

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2	
Lane Configurations		25	4%			24			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			4.0			
Lane Util. Factor		1.00	0.95			0.97			
Frt		1.00	0.99			0.93			
Flt Protected		0.95	1.00			0.98			
Satd. Flow (prot)		1766	3405			3201			
Flt Permitted		0.95	1.00			0.87			
Satd. Flow (perm)		1766	3405			2861			
Volume (vph)	17	147	237	20	21	97	40	75	
Peak-hour factor, PHF	0.92	0.81	0.81	0.81	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	18	181	293	25	23	105	43	82	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	199	318	0	0	253	0	0	
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%	
Turn Type	Prot	Prot			Perm				
Protected Phases	1	1	6			3			
Permitted Phases					3				
Actuated Green, G (s)		12.6	23.6			14.6			
Effective Green, g (s)		12.6	23.6			14.6			
Actuated g/C Ratio		0.14	0.26			0.16			
Clearance Time (s)		4.0	4.0			4.0			
Vehicle Extension (s)		3.0	3.0			3.0			
Lane Grp Cap (vph)		246	889			462			
v/s Ratio Prot		c0.11	0.09						
v/s Ratio Perm						c0.09			
v/c Ratio		0.81	0.36			0.55			
Uniform Delay, d1		37.7	27.2			34.9			
Progression Factor		1.00	1.00			1.00			
Incremental Delay, d2		17.5	0.2			1.3			
Delay (s)		55.2	27.5			36.2			
Level of Service		E	С			D			
Approach Delay (s)			38.2			36.2			
Approach LOS			D			D			
Intersection Summary									

Lane Configurations n AA p' n AA p' p' AA p'		≯	+	~	~	Ļ	•	*	t	*	¢	Ţ	4
Lane Configurations Y <thy< th=""> Y <thy< th=""></thy<></thy<>	Movement	EDI	EDT		1//DI			NDI	NDT	NDD	CDI	CDT	SB
Ideal Flow (vphpl) 1900 100											-		
Total Lost time (s) 4.0<	U												190
Lane Util. Factor 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 0.98 1.00 0.98 1.00 0.98 1.00 0.98 1.00 0.98 1.00 0.98 1.00 0.00 0.98 1.00 0.00 0.95 1.00 0.00 0.00 1.00 0.00 1.00 0.00 0.00 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.													4.
Frpb, ped/bikes 1.00													1.0
Fipb. ped/bikes 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00													0.9
Frit 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.95 1.00 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00	1 1 1												1.0
Fit Protected 0.95 1.00 1.00 1.01 1.03 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.8</td>													0.8
Satd. Flow (prot) 1719 3438 1538 1687 3374 1473 1719 3438 1500 1719 3438 1 FIP Permitted 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 <													1.0
Fit Permitted 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.719 3438 1 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.719 3438 1 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00													152
Satd. Flow (perm) 1719 3438 1538 1687 3374 1473 1719 3438 1500 1719 3438 1 Volume (vph) 239 796 64 26 267 321 48 487 97 219 200 Peak-hour factor, PHF 0.80 0.80 0.70 0.70 0.70 0.80 0.80 0.81 <													1.0
Volume (vph) 239 796 64 26 267 321 48 487 97 219 200 Peak-hour factor, PHF 0.80 0.80 0.80 0.70 0.70 0.70 0.80 0.80 0.81 0.95 0													152
Peak-hour factor, PHF 0.80 0.80 0.70 0.70 0.70 0.80 0.80 0.81 <t< td=""><td>N /</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>18</td></t<>	N /												18
Adj. Flow (vph) 299 995 80 37 381 459 60 609 121 270 247 RTOR Reduction (vph) 0 0 29 0 0 400 0 0 95 0 0 Lane Group Flow (vph) 299 995 51 37 381 59 60 609 26 270 247 Confl. Bikes (#/hr) 7 12 7 12 11 15 16 15 12 11 15 16 15 16 12 11 15 16 15 12 11 15 16 15 12 11 15 16 15 12 11 12 14 12 20.1 42.0 60 60 60 12 0.1 42.0 60 60 60 12 12.1 42.0 60 60 60 13 12 14 12 60 60 60 60 60 60 60 60 60 60 60 60 60<													0.8
RTOR Reduction (vph) 0 0 29 0 0 400 0 0 95 0 0 Lane Group Flow (vph) 299 995 51 37 381 59 60 609 26 270 247 Confl. Bikes (#/hr) 7 12 12 12 12 Heavy Vehicles (%) 5%													22
Lane Group Flow (vph) 299 995 51 37 381 59 60 609 26 270 247 Confl. Bikes (#/hr) 7 7 12 12 12 12 12 12 Heavy Vehicles (%) 5%													10
Confl. Bikes (#/hr) 7 12 Heavy Vehicles (%) 5% 5% 5% 7% 7% 7% 5%											270		11
Heavy Vehicles (%) 5% 5% 5% 7% 7% 7% 5% <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td>													1
Turn Type Prot custom Prot		5%	5%	5%	7%	7%	7%	5%	5%		5%	5%	5
Protected Phases 3 14 2 6 15 13 18 2 6 15 12 11 1 5 16 1 5 3 Permitted Phases 14 18 12 11 1 5 16 1 5 3 Actuated Green, G (s) 24.2 39.9 42.1 4.9 20.6 15.6 7.2 25.1 25.1 20.1 42.0 6 Actuated Green, G (s) 24.2 39.9 42.1 4.9 20.6 15.6 7.2 25.1 25.1 20.1 42.0 6 Actuated g/C Ratio 0.20 0.33 0.35 0.04 0.17 0.13 0.06 0.21 0.21 0.16 0.34 0 Clearance Time (s) 4.0		Prot	С	ustom	Prot	(custom	Prot		Perm	Prot	c	usto
Actuated Green, G (s) 24.2 39.9 42.1 4.9 20.6 15.6 7.2 25.1 25.1 20.1 42.0 6 Effective Green, g (s) 24.2 39.9 42.1 4.9 20.6 15.6 7.2 25.1 25.1 20.1 42.0 6 Actuated g/C Ratio 0.20 0.33 0.35 0.04 0.17 0.13 0.06 0.21 0.21 0.16 0.34 0 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 341 1124 531 68 570 188 101 707 309 283 1184 v/s Ratio Perm 0.03 0.04 0.02 0.01 0.02 0.11 0.03 0.04 0.02 0.01 V/s Ratio Perm 0.03 0.04 0.02 0.01 0.04 0.02 0.02 0.01 0.02 <td></td> <td>3</td> <td>1426</td> <td>15</td> <td>13</td> <td>1826</td> <td></td> <td>15</td> <td>12</td> <td></td> <td>11 1 5</td> <td>16 1 5</td> <td>31</td>		3	1426	15	13	1826		15	12		11 1 5	16 1 5	31
Effective Green, g (s) 24.2 39.9 42.1 4.9 20.6 15.6 7.2 25.1 25.1 20.1 42.0 6 Actuated g/C Ratio 0.20 0.33 0.35 0.04 0.17 0.13 0.06 0.21 0.21 0.16 0.34 0 Clearance Time (s) 4.0	Permitted Phases			14			18			12			1
Actuated g/C Ratio 0.20 0.33 0.35 0.04 0.17 0.13 0.06 0.21 0.21 0.16 0.34 0 Clearance Time (s) 4.0	Actuated Green, G (s)	24.2	39.9	42.1	4.9	20.6	15.6	7.2	25.1	25.1	20.1	42.0	62
Clearance Time (s) 4.0 6.0 </td <td>Effective Green, g (s)</td> <td>24.2</td> <td>39.9</td> <td>42.1</td> <td>4.9</td> <td>20.6</td> <td>15.6</td> <td>7.2</td> <td>25.1</td> <td>25.1</td> <td>20.1</td> <td>42.0</td> <td>62</td>	Effective Green, g (s)	24.2	39.9	42.1	4.9	20.6	15.6	7.2	25.1	25.1	20.1	42.0	62
Vehicle Extension (s) 3.0	Actuated g/C Ratio	0.20	0.33	0.35	0.04	0.17	0.13	0.06	0.21	0.21	0.16	0.34	0.5
Lane Grp Cap (vph) 341 1124 531 68 570 188 101 707 309 283 1184 v/s Ratio Prot c0.17 c0.29 0.01 0.02 0.11 0.03 c0.18 c0.16 0.07 0.01 0.07 </td <td>Clearance Time (s)</td> <td>4.0</td> <td></td> <td>4.0</td> <td>4.0</td> <td></td> <td>4.0</td> <td>4.0</td> <td>4.0</td> <td>4.0</td> <td></td> <td></td> <td></td>	Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0	4.0			
v/s Ratio Prot c0.17 c0.29 0.01 0.02 0.11 0.03 c0.18 c0.16 0.07 0 v/s Ratio Perm 0.03 0.04 0.02 0.07 0 0.02 0.01 0.02 0.01 0.03 0.04 0.02 0.07 0 0.07 0 0.08 0.95 0.21 0 0.07 0 0.08 0.95 0.21 0 0 0.54 0.67 0.31 0.59 0.86 0.08 0.95 0.21 0 0 1.00 1.	Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0			
v/s Ratio Perm 0.03 0.04 0.02 0.02 v/c Ratio 0.88 0.89 0.10 0.54 0.67 0.31 0.59 0.86 0.08 0.95 0.21 0 Uniform Delay, d1 47.5 38.9 27.1 57.5 47.5 48.3 56.0 46.8 39.2 50.5 28.3 7 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.92 0.92 0.92 0.1 Incremental Delay, d2 21.5 8.6 0.1 8.6 3.0 1.0 9.0 1.00 1.00 0.92 0.92 0.92 0.1 Delay (s) 68.9 47.4 27.1 66.1 50.5 49.3 65.0 57.3 39.3 87.3 26.0 2 Level of Service E D C E D D E E D F C Approach LOS D D E D F D D Intersection Summary D D <td< td=""><td>Lane Grp Cap (vph)</td><td>341</td><td>1124</td><td>531</td><td>68</td><td>570</td><td>188</td><td>101</td><td>707</td><td>309</td><td>283</td><td>1184</td><td>82</td></td<>	Lane Grp Cap (vph)	341	1124	531	68	570	188	101	707	309	283	1184	82
v/c Ratio 0.88 0.89 0.10 0.54 0.67 0.31 0.59 0.86 0.08 0.95 0.21 0 Uniform Delay, d1 47.5 38.9 27.1 57.5 47.5 48.3 56.0 46.8 39.2 50.5 28.3 7 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.92 0.92 29.2 7 Incremental Delay, d2 21.5 8.6 0.1 8.6 3.0 1.0 9.0 10.5 0.1 40.7 0.1 Delay (s) 68.9 47.4 27.1 66.1 50.5 49.3 65.0 57.3 39.3 87.3 26.0 2 Level of Service E D C E D D E D F C Approach LOS D D D E D F C D Intersection Summary HCM Volume to Capacity rat	v/s Ratio Prot	c0.17	c0.29	0.01	0.02	0.11		0.03	c0.18		c0.16	0.07	0.0
Uniform Delay, d1 47.5 38.9 27.1 57.5 47.5 48.3 56.0 46.8 39.2 50.5 28.3 7 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 0.00	v/s Ratio Perm			0.03			0.04			0.02			0.0
Progression Factor 1.00 0.92 0.92 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.92 0.92 1.00 1.01 1.01 1.00 1.00 <td>v/c Ratio</td> <td>0.88</td> <td>0.89</td> <td>0.10</td> <td>0.54</td> <td>0.67</td> <td>0.31</td> <td>0.59</td> <td>0.86</td> <td>0.08</td> <td>0.95</td> <td>0.21</td> <td>0.1</td>	v/c Ratio	0.88	0.89	0.10	0.54	0.67	0.31	0.59	0.86	0.08	0.95	0.21	0.1
Incremental Delay, d2 21.5 8.6 0.1 8.6 3.0 1.0 9.0 10.5 0.1 40.7 0.1 Delay (s) 68.9 47.4 27.1 66.1 50.5 49.3 65.0 57.3 39.3 87.3 26.0 2 Level of Service E D C E D D E E D F C Approach Delay (s) 50.9 50.5 55.1 47.9 Approach LOS D E D Image: Delay Control Delay 51.1 HCM Level of Service D HCM Volume to Capacity ratio 0.88 Actuated Cycle Length (s) 122.0 Sum of lost time (s) 28.0	Uniform Delay, d1	47.5	38.9	27.1	57.5	47.5	48.3	56.0	46.8	39.2	50.5	28.3	15
Delay (s) 68.9 47.4 27.1 66.1 50.5 49.3 65.0 57.3 39.3 87.3 26.0 2 Level of Service E D C E D D E D F C Approach Delay (s) 50.9 50.5 55.1 47.9 Approach LOS D E D Image: D	Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	1.5
Level of Service E D C E D E D F C Approach Delay (s) 50.9 50.5 55.1 47.9 Approach LOS D D E D Intersection Summary F HCM Average Control Delay 51.1 HCM Level of Service D HCM Volume to Capacity ratio 0.88 Actuated Cycle Length (s) 122.0 Sum of lost time (s) 28.0	Incremental Delay, d2	21.5	8.6	0.1	8.6	3.0	1.0	9.0	10.5	0.1	40.7	0.1	0
Approach Delay (s) 50.9 50.5 55.1 47.9 Approach LOS D D E D Intersection Summary HCM Average Control Delay 51.1 HCM Level of Service D HCM Volume to Capacity ratio 0.88 Actuated Cycle Length (s) 122.0 Sum of lost time (s) 28.0	Delay (s)	68.9	47.4	27.1	66.1	50.5	49.3	65.0	57.3	39.3	87.3	26.0	24
Approach LOS D D E D Intersection Summary HCM Average Control Delay 51.1 HCM Level of Service D HCM Volume to Capacity ratio 0.88 Actuated Cycle Length (s) 122.0 Sum of lost time (s) 28.0		E		С	E	-	D	E		D	F		
Intersection Summary HCM Average Control Delay 51.1 HCM Level of Service D HCM Volume to Capacity ratio 0.88 Actuated Cycle Length (s) 122.0 Sum of lost time (s) 28.0													
HCM Average Control Delay 51.1 HCM Level of Service D HCM Volume to Capacity ratio 0.88 Actuated Cycle Length (s) 122.0 Sum of lost time (s) 28.0	Approach LOS		D			D			E			D	
HCM Volume to Capacity ratio 0.88 Actuated Cycle Length (s) 122.0 Sum of lost time (s) 28.0	Intersection Summary												
Actuated Cycle Length (s) 122.0 Sum of lost time (s) 28.0	HCM Average Control D	elay		51.1	H	ICM Le	vel of S	ervice		D			
	HCM Volume to Capacit	ty ratio		0.88									
Intersection Capacity Utilization 64.3% ICUL evel of Service C	Actuated Cycle Length (s)		122.0	S	Sum of I	ost time	(s)		28.0			
	ntersection Capacity Ut	ilizatior	1	64.3%	10	CU Lev	el of Sei	rvice		С			

K:\SND_TPTO\095707000\Synchro\EX PM.sy7 KHA Kimley-Horn and Associates, Inc. Synchro 6 Report Page 40 K:\SND_TPTO\095707000\Synchro\EX PM.sy7 KHA Kimley-Horn and Associates, Inc.

EBL 1900 4.0 1.00 1.00 1.00 1.00 0.95 1770 0.95 1770 254	EBT 1900 4.0 0.95 1.00 1.00 1.00 3539 1.00 3539	WBT 1900 4.0 0.95 1.00 1.00 1.00 3539 1.00 2500	WBR 1900 4.0 1.00 1.00 0.85 1.00 1583 1.00	SBL 1900 4.0 1.00 0.99 1.00 0.93 0.98 1680	SBR 1900	
1900 4.0 1.00 1.00 1.00 1.00 0.95 1770 0.95 1770	↑↑ 1900 4.0 0.95 1.00 1.00 1.00 3539 1.00 3539	1900 4.0 0.95 1.00 1.00 1.00 1.00 3539 1.00	1900 4.0 1.00 1.00 0.85 1.00 1583	1900 4.0 1.00 0.99 1.00 0.93 0.98		
1900 4.0 1.00 1.00 1.00 1.00 0.95 1770 0.95 1770	1900 4.0 0.95 1.00 1.00 1.00 3539 1.00 3539	1900 4.0 0.95 1.00 1.00 1.00 3539 1.00	1900 4.0 1.00 1.00 0.85 1.00 1583	1900 4.0 1.00 0.99 1.00 0.93 0.98	1900	
4.0 1.00 1.00 1.00 0.95 1770 0.95 1770	4.0 0.95 1.00 1.00 1.00 3539 1.00 3539	1900 4.0 0.95 1.00 1.00 1.00 3539 1.00	4.0 1.00 1.00 0.85 1.00 1583	4.0 1.00 0.99 1.00 0.93 0.98	1900	
1.00 1.00 1.00 1.00 0.95 1770 0.95 1770	0.95 1.00 1.00 1.00 3539 1.00 3539	0.95 1.00 1.00 1.00 1.00 3539 1.00	1.00 1.00 1.00 0.85 1.00 1583	1.00 0.99 1.00 0.93 0.98		
1.00 1.00 1.00 0.95 1770 0.95 1770	1.00 1.00 1.00 3539 1.00 3539	1.00 1.00 1.00 1.00 3539 1.00	1.00 1.00 0.85 1.00 1583	0.99 1.00 0.93 0.98		
1.00 1.00 0.95 1770 0.95 1770	1.00 1.00 3539 1.00 3539	1.00 1.00 1.00 3539 1.00	1.00 0.85 1.00 1583	1.00 0.93 0.98		
1.00 0.95 1770 0.95 1770	1.00 1.00 3539 1.00 3539	1.00 1.00 3539 1.00	0.85 1.00 1583	0.93 0.98		
0.95 1770 0.95 1770	1.00 3539 1.00 3539	1.00 3539 1.00	1.00 1583	0.98		
1770 <mark>0.95</mark> 1770	3539 1.00 3539	3539 1.00	1583			
0.95 1770	1.00 3539	1.00		1680		
1770	3539		1 00			
		0500	1.00	0.98		
254		3539	1583	1680		
	579	275	154	120	126	
0.91	0.91	0.89	0.89	0.94	0.94	
279	636	309	173	128	134	
0	0	0	135	61	0	
279	636	309	38	201	0	
				10	4	
					1	
Prot			Perm			
5	2	6		4		
			6			
11.9	25.8	9.9	9.9	11.3		
11.9	25.8	9.9	9.9	11.3		
0.26	0.57	0.22	0.22	0.25		
4.0	4.0	4.0	4.0	4.0		
3.0	3.0	3.0	3.0	3.0		
467	2025	777	347	421		
0.16	0.18	c0.09		c0.12		
			0.02			
0.60	0.31	0.40	0.11	0.48		
14.5	5.0	15.1	14.1	14.4		
1.00	1.00	1.00	1.00	1.00		
2.1	0.1	0.3	0.1	0.9		
16.6	5.1	15.4	14.2	15.2		
В	А	В	В	В		
	8.6	15.0		15.2		
	279 0 279 Prot 5 11.9 11.9 0.26 4.0 3.0 467 0.16 0.60 14.5 1.00 2.1 16.6	279 636 0 0 279 636 Prot 5 5 2 11.9 25.8 1.19 25.8 1.26 0.57 4.0 4.0 3.0 3.0 467 2025 0.16 0.18 0.60 0.31 14.5 5.0 0.00 1.00 2.1 0.1 B A	279 636 309 0 0 0 279 636 309 Prot - - 5 2 6 11.9 25.8 9.9 1.26 0.57 0.22 4.0 4.0 3.0 3.0 3.0 3.0 4.67 2025 777 0.16 0.31 0.40 14.5 5.0 15.1 1.00 1.00 1.00 2.1 0.1 0.3 16.6 5.1 15.4 B A B 8.6 15.0	279 636 309 173 0 0 0 135 279 636 309 38 Prot Perm 5 2 6 11.9 25.8 9.9 9.9 11.9 25.8 9.9 9.9 12.6 0.57 0.22 0.22 4.0 4.0 4.0 4.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 4.67 2025 777 347 0.16 0.18 c0.09 0.02 0.60 0.31 0.40 0.11 14.5 5.0 15.1 14.1 1.00 1.00 1.00 1.00 2.1 0.1 0.3 0.1 16.6 5.1 15.4 14.2 B A B B 8.6 15.0 15.0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Intersection Summary				
HCM Average Control Delay	11.5	HCM Level of Service	В	
HCM Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	45.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	46.9%	ICU Level of Service	А	
Analysis Period (min)	15			
c Critical Lane Group				

Synchro 6 Report Page 42

Barrio Logan CPU <u>1: Commercial St &</u>	16th S	t				Hori	zon Ye	ear Alt			prover Plan: AM	
		+	*	4	+	*	•	1	۲	*	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		đ,		уí	4			11			41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		1.00		0.95	0.95			0.95			0.95	
Frpb, ped/bikes		1.00		1.00	0.99			1.00			0.98	
Flpb, ped/bikes		1.00		0.99	1.00			1.00			1.00	
Frt		0.99		1.00	0.96			0.99			0.95	
Flt Protected		1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)		1827		1664	1685			3508			3293	
Flt Permitted		0.97		0.52	1.00			0.94			0.88	
Satd. Flow (perm)		1769		914	1685			3296			2924	
Volume (vph)	16	225	26	24	295	114	13	340	16	47	250	136
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	245	28	26	321	124	14	370	17	51	272	148
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	46	0
Lane Group Flow (vph)	0	285	0	26	445	0	0	401	0	0	425	0
Confl. Peds. (#/hr)			15	15		16	36			12		36
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		19.4		19.4	19.4			27.4			27.4	
Effective Green, q (s)		19.4		19.4	19.4			27.4			27.4	
Actuated g/C Ratio		0.35		0.35	0.35			0.50			0.50	
Clearance Time (s)		4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		626		324	597			1648			1462	
v/s Ratio Prot												
v/s Ratio Perm		0.16		0.03	0.26			0.12			c0.15	
v/c Ratio		0.46		0.08	0.75			0.24			0.29	
Uniform Delay, d1		13.6		11.8	15.5			7.8			8.0	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		0.5		0.1	5.0			0.4			0.5	
Delay (s)		14.2		11.9	20.6			8.1			8.5	
Level of Service		В		В	С			А			А	
Approach Delay (s)		14.2			20.1			8.1			8.5	
Approach LOS		В			С			А			А	
Intersection Summary												
HCM Average Control D	elay		12.8	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capacit			0.48									
Actuated Cycle Length (54.8	5	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut			81.9%			el of Sei			D			
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group

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Barrio Logan CPU

1: Commercial St & 16th St

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Movement	SWR
Lane Configurations	7
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	0
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	0.02
RTOR Reduction (vph)	0
Lane Group Flow (vph)	-
Confl. Peds. (#/hr)	0
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	2%
Protected Phases	custom 9
Permitted Phases	9
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	
intersection outfindry	

Barrio Logan CPU 2: National Ave & 16	6th St					Hori	zon Ye	ear Alt			prover Plan: AM	
	٠	→	\mathbf{r}	4	+	•	1	Ť	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		474		ž	1×			1			*	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	40	194	40	3	495	34	40	34	12	56	36	91
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	211	43	3	538	37	43	37	13	61	39	99
Pedestrians		7			14			16			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					668							
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	594			270			1006	936	157	820	939	583
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	563			270			1006	931	157	806	935	551
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			61	84	98	70	83	77
cM capacity (veh/h)	919			1273			112	228	839	201	226	435
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	149	149	3	575	93	199						
Volume Left	43	0	3	0	43	61						
Volume Right	43	43	0	37	13	99						
cSH	919	1700	1273	1700	166	283						
Volume to Capacity	0.05	0.09	0.00	0.34	0.56	0.70						
Queue Length 95th (ft)	0.05	0.09	0.00	0.34	73	122						
Control Delay (s)	3.0	0.0	7.8	0.0	51.7	43.2						
Lane LOS	3.0 A	0.0	7.0 A	0.0	51.7 F	43.2 E						
Approach Delay (s)	1.5		0.0		51.7	43.2						
Approach LOS	1.0		0.0		51.7 F	43.2 E						
	_	_	_	_		-	_			_		
Intersection Summary			44.0									
Average Delay			11.9		0111							
Intersection Capacity Ut	ilization		57.0%		CU Lev	el of Sei	vice		В			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	T.		76	Þ			610			1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	0.99	1.00		0.98	1.00			0.99			1.00	
Frt	1.00	0.96		1.00	0.99			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1753	1769		1741	1831			1702			1695	
Flt Permitted	0.41	1.00		0.63	1.00			0.84			0.96	
Satd. Flow (perm)	765	1769		1151	1831			1467			1634	
Volume (vph)	10	140	51	16	367	36	63	26	58	15	40	58
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	152	55	17	399	39	68	28	63	16	43	63
RTOR Reduction (vph)	0	21	0	0	6	0	0	37	0	0	40	0
Lane Group Flow (vph)	11	186	0	17	432	0	0	122	0	0	82	0
Confl. Peds. (#/hr)	21		25	25		21	37		14	14		37
Confl. Bikes (#/hr)						3			3			1
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.9	13.9		13.9	13.9			12.4			12.4	
Effective Green, g (s)	13.9	13.9		13.9	13.9			12.4			12.4	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.36			0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	310	717		466	742			530			591	
v/s Ratio Prot		0.11			c0.24							
v/s Ratio Perm	0.01	0		0.01	00.21			c0.08			0.05	
v/c Ratio	0.04	0.26		0.04	0.58			0.23			0.14	
Uniform Delay, d1	6.2	6.8		6.2	7.9			7.6			7.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.2		0.0	1.2			0.2			0.1	
Delay (s)	6.2	7.0		6.2	9.1			7.8			7.5	
Level of Service	A	A		A	A			A			A	
Approach Delay (s)		6.9			9.0			7.8			7.5	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM Average Control D	Delay		8.1	F	ICM Le	vel of Se	ervice		Α			
HCM Volume to Capaci	ty ratio		0.42									
Actuated Cycle Length (34.3	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut			45.3%	10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									
c Critical Lane Group												

Horizon Year Alt 1 without Improvements

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			1			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	6	48	19	15	80	51	24	111	34	33	79	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	52	21	16	87	55	26	121	37	36	86	18
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	79	159	184	140								
Volume Left (vph)	7	16	26	36								
Volume Right (vph)	21	55	37	18								
Hadj (s)	-0.11	-0.16	-0.06	0.01								
Departure Headway (s)	4.8	4.6	4.6	4.7								
Degree Utilization, x	0.11	0.20	0.23	0.18								
Capacity (veh/h)	687	721	739	714								
Control Delay (s)	8.3	8.8	9.0	8.8								
Approach Delay (s)	8.3	8.8	9.0	8.8								
Approach LOS	Α	А	А	Α								
Intersection Summary												
Delay			8.8									
HCM Level of Service			A									
Intersection Capacity Ut	ilizatior	1	31.7%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

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Sign Control Stop Stop Stop Stop Stop Volume (vph) 3 8 6 31 8 61 5 97 24 31 96 Peak Hour Factor 0.92		۶	-	\mathbf{r}	4	+	•	•	Ť	1	1	Ŧ	~
Sign Control Stop	Novement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Volume (vph) 3 8 6 31 8 61 5 97 24 31 96 Peak Hour Factor 0.92	ane Configurations		đ,			4			de.			4.	
Peak Hour Factor 0.92 <th0.92< th=""> 0.92 0.92</th0.92<>	Sign Control		Stop			Stop			Stop			Stop	
Hourly flow rate (vph) 3 9 7 34 9 66 5 105 26 34 104 Direction, Lane # EB 1 WB 1 NB 1 SB 1 Volume Total (vph) 18 109 137 141 Volume Left (vph) 3 34 5 34 Volume Right (vph) 7 66 26 3 Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A Intersection Summary 8.1 8.1	/olume (vph)	3	8	6	31	8	61	5	97	24	31	96	3
Direction, Lane # EB 1 WB 1 NB 1 SB 1 Volume Total (vph) 18 109 137 141 Volume Left (vph) 3 34 5 34 Volume Right (vph) 7 66 26 3 Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach LoS A A A Intersection Summary 20 8.1 4.1		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Volume Total (vph) 18 109 137 141 Volume Left (vph) 3 34 5 34 Volume Right (vph) 7 66 26 3 Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A A Delay 8.1 8.1 8.1 8.1	Hourly flow rate (vph)	3	9	7	34	9	66	5	105	26	34	104	3
Volume Left (vph) 3 34 5 34 Volume Right (vph) 7 66 26 3 Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A Intersection Summary 8.1 8.1	Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Right (vph) 7 66 26 3 Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.4 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Intersection Summary Unitersection Summary 8.1 1	/olume Total (vph)	18	109	137	141								
Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A A Intersection Summary Delay 8.1 8.1	/olume Left (vph)	3	34	5	34								
Departure Headway (s) 4.5 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Intersection Summary Delay 8.1 8.1	/olume Right (vph)	7	66	26	3								
Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A Intersection Summary 8.1 8.1	Hadj (s)	-0.14	-0.27	-0.07	0.07								
Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A A Intersection Summary 8.1 8.1 8.1	Departure Headway (s)	4.5	4.3	4.3	4.4								
Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A A Intersection Summary 8.1 8.1 8.1	Degree Utilization, x	0.02	0.13	0.16	0.17								
Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A A Intersection Summary 8.1 8.1 8.1	Capacity (veh/h)	731	782	808	780								
Approach LOS A A A A A Intersection Summary Delay 8.1	Control Delay (s)	7.6	7.9	8.1	8.3								
Intersection Summary Delay 8.1	Approach Delay (s)	7.6	7.9	8.1	8.3								
Delay 8.1	Approach LOS	А	А	А	А								
	ntersection Summary												
HCM Level of Service A	Delay			8.1									
	HCM Level of Service			А									
Intersection Capacity Utilization 33.8% ICU Level of Service A	ntersection Capacity Ut	ilizatior	۱	33.8%	- 10	CU Lev	el of Ser	vice		А			

Lane Configurations I Sign Control I Grade Volume (veh/h) 60 Peak Hour Factor 0.92 I Hourly flow rate (vph) 65 Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.71 vC2, stage 1 conf vol vC2, stage 2 conf vol vC4, stage 1 conf vol vC2, stage 2 conf vol vC4, unblocked vol 1770 tC, 2 stage (s) 14 tC, 2 stage (s) 14 tf (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 E Volume Total 65 Volume Left 65 Volume Left 65 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Queue Length 95th (ft) 26 Control Delay (s) 24.7	► EBT ↑↑ Free 0% 480 0.92 522	★ WBT Free 0% 1670 0.92 1815	WBR 20 0.92 22	SBL Stop 0% 110 0.92 120	SBR 110 0.92 120		
Lane Configurations I Sign Control I Grade Volume (veh/h) 60 Peak Hour Factor 0.92 I Hourly flow rate (vph) 65 Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) 0.71 vC, conflicting volume 1837 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 1 conf vol vC4, stage 1 conf vol 1770 tC, 2 stage (s) 14 tft (s) 2.2 p0 queue free % 74 cd capacity (veh/h) 247 Direction, Lane # EB 1 E Volume Total 65 55 Volume Left 65 Volume Left 65 176 126 126 Queue Length 95th (ft) 2.64 1247 126 1247 14	↑↑ Free 0% 480 0.92	Free 0% 1670 0.92	20 0.92	Stop 0% 110 0.92	110 0.92		
Sign Control I Grade Grade Volume (veh/h) 60 Peak Hour Factor 0.92 Hourly flow rate (vph) 65 Pedestrians Eane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.71 vC2, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC4, assed (s) tft (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C	Free 0% 480 0.92	Free 0% 1670 0.92	0.92	Stop 0% 110 0.92	0.92		
Sign Control I Grade Grade Volume (veh/h) 60 Peak Hour Factor 0.92 Hourly flow rate (vph) 65 Pedestrians 5 Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.71 vC2, stage 1 conf vol vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage (s) 1770 UC5, stage 1 conf vol vC4, assage (s) 1471 tC7, 2 stage (s) 1576 247 p0 queue free % 74 65 Volume Total 65 65 Volume Left 65 50 Volume Right 0 0 cSH 247 1 Volume to Capacity 0.26 0 Queue Length 95th (ft) 26 0 Queue Length 95th (ft) 24.7 1 Lane LOS <td< td=""><td>Free 0% 480 0.92</td><td>Free 0% 1670 0.92</td><td>0.92</td><td>Stop 0% 110 0.92</td><td>0.92</td><td></td><td></td></td<>	Free 0% 480 0.92	Free 0% 1670 0.92	0.92	Stop 0% 110 0.92	0.92		
Volume (veh/h) 60 Peak Hour Factor 0.92 Hourly flow rate (vph) 65 Pedestrians 65 Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC4, unblocked vol tF (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Left 65 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C	480 0.92	1670 0.92	0.92	110 0.92	0.92		
Peak Hour Factor 0.92 Hourly flow rate (vph) 65 Pedestrians 65 Lane Width (ft) 65 Walking Speed (ft/s) 9 Percent Blockage 8 Right turn flare (veh) 9 Median type 9 Median storage veh) 10 Upstream signal (ft) 0.71 vC, conflicting volume 1837 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 1 conf vol vC4, stage 1 conf vol vC4, stage 1 conf vol 1770 tC, 2 stage (s) 1770 tF (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Right 0 cSH 247 1 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph) 65 Pedestrians 5 Lane Width (ft) 9 Walking Speed (ft/s) 9 Percent Blockage 8 Right turn flare (veh) 9 Median type 9 Upstream signal (ft) 9 pX, platoon unblocked 0.71 vC1, stage 1 conf vol 1837 vC2, stage 2 conf vol vC4. vC2, stage 2 conf vol 1770 vC2, stage 2 conf vol 4.1 tC, 2 stage (s) 1770 tFf (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C							
Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.71 vC, conflicting volume 1837 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, single (s) 4.1 tC, 2 stage (s) tF (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 E Volume Total 65 Volume Total 65 Volume Left 65 Volume Right 0 cSH 247 1 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C	522	1815	22	120	120		
Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) yC, pattoon unblocked VC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage (s) tF (s) Queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Left 65 Volume Left 0 CSH 247 Lane LOS C							
Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.71 vC, conflicting volume 1837 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC4, stage 1 conf vol vC2, stage 2 conf vol vC4, stage 1 conf vol vC4, stage 1 conf vol vC4, stage 1 conf vol vC5, stage 2 conf vol vC4, stage 1 conf vol vC4, stage 1 conf vol vC4, stage 1 conf vol vC1, stage 1 conf vol vC4, stage 1 conf vol vC1, stage 1 conf vol vC4, stage 1 conf vol vC1, stage 1 conf vol vC4, stage 1 conf vol vC1, stage 1 conf vol 4.1 tC6, 2 stage (s) 1770 tC7, 2 stage (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 E0 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.71 vC, conflicting volume 1837 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC4, stage 1 conf vol vC4, single (s) 4.1 tC, 2 stage (s) tf (s) p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C							
Right turn flare (veh) Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.71 vC, conflicting volume 1837 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC4, unblocked vol vC4, unblocked vol 1770 tC, single (s) 4.1 tC, stage (s) 74 tF (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Left 65 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C							
Median type Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.71 vC, conflicting volume 1837 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC4, unblocked vol tC, single (s) 4.1 tC, 2 stage (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Left 65 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C							
Median storage veh) Upstream signal (ft) pX, platoon unblocked 0.71 vC, conflicting volume 1837 vCC, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC4, unblocked vol vC4, single (s) 4.1 tC, 2 stage (s) 4.1 tC, 2 stage (s) 74 p0 queue free % 74 CM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Left 65 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C							
Upstream signal (ft) 0.71 pX, platoon unblocked 0.71 vC, conflicting volume 1837 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC4, stage 1 conf vol vC2, stage 2 conf vol vC4, unblocked vol vC1, stage 1 conf vol vC1, stage 2 conf vol vC2, stage 2 conf vol vC4, unblocked vol tC, 2 stage (s) 1770 tF (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Left 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C				Raised			
px, platoon unblocked 0.71 vC, conflicting volume 1837 vC1, stage 1 conf vol 1837 vC2, stage 2 conf vol 1770 vC4, unblocked vol 1770 tC, single (s) 4.1 tC, single (s) 4.1 tC, single (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C				0			
vC, conflicting volume 1837 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol 1770 tC, single (s) 4.1 tC, single (s) 4.1 tC, 2 stage (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Left 65 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C		1319					
vC1, stage 1 conf vol vC2, stage 2 conf vol vCu, unblocked vol 1770 tC, single (s) 4.1 tC, 2 stage (s) 2.2 tF (s) 2.2 p0 queue free % 74 cdr capacity (veh/h) 247 Direction, Lane # EB 1 E Volume Total 65 Volume Left 65 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C				0.71	0.71		
vC2, stage 2 conf vol vCu, unblocked vol 1770 tC, single (s) 4.1 tC, 2 stage (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 267 Control Delay (s) 24.7 Lane LOS C				2217	918		
vCu, unblocked vol 1770 tC, single (s) 4.1 tC, z stage (s) t tF (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C				1826			
tC, single (s) 4.1 tC, 2 stage (s)				391			
tC, 2 stage (s) tF (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 E Volume Total 65 Volume Left 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C				2306	476		
tF (s) 2.2 p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Left 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C				6.8	6.9		
p0 queue free % 74 cM capacity (veh/h) 247 Direction, Lane # EB 1 Volume Total 65 Volume Left 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C				5.8			
CM capacity (veh/h)247Direction, Lane #EB 1EVolume Total65Volume Left65Volume Right0cSH2471Volume to Capacity0.26Queue Length 95th (ft)26Control Delay (s)24.7Lane LOSC				3.5	3.3		
Direction, Lane #EB 1EBVolume Total65Volume Left65Volume Right0cSH2471Volume to Capacity0.26Queue Length 95th (ft)26Control Delay (s)24.7Lane LOSC				0	69		
Volume Total 65 Volume Left 65 Volume Right 0 cSH 247 Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C				53	380		
Volume Left 65 Volume Right 0 cSH 247 1 Volume to Capacity 0.26 0 Queue Length 95th (ft) 26 0 Control Delay (s) 24.7 1 Lane LOS C 0	EB 2	EB 3	WB 1	WB 2	SB 1		
Volume Right 0 cSH 247 1 Volume to Capacity 0.26 0 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C	261	261	1210	627	239		
cSH 247 1 Volume to Capacity 0.26 0 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C	0	0	0	0	120		
Volume to Capacity 0.26 Queue Length 95th (ft) 26 Control Delay (s) 24.7 Lane LOS C	0	0	0	22	120		
Queue Length 95th (ft)26Control Delay (s)24.7Lane LOSC	1700	1700	1700	1700	94		
Control Delay (s) 24.7 Lane LOS C	0.15	0.15	0.71	0.37	2.55		
Lane LOS C	0	0	0	0	555		
	0.0	0.0	0.0	0.0	800.0		
					F		
Approach Delay (s) 2.7			0.0		800.0		
Approach LOS					F		
Intersection Summary							
Average Delay		72.4					
Intersection Capacity Utilization	6	69.4%	1	CU Lev	el of Service	С	

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Barrio Logan CPU 7: Logan Ave & Bea	rdslev	St				Hori	zon Ye	ear Alt	1 with	out Im iming F		
	٦	-	\mathbf{r}	4	+	•	•	Ť	*	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		Ţ,		76	+			et.			10	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	170	24	87	202	0	31	0	68	259	236	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	185	26	95	220	0	34	0	74	282	257	51
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	211	95	220	108	589							
Volume Left (vph)	0	95	0	34	282							
Volume Right (vph)	26	0	0	74	51							
Hadj (s)	-0.04	0.53	0.03	-0.32	0.08							
Departure Headway (s)	7.0	7.8	7.3	6.7	5.9							
Degree Utilization, x	0.41	0.20	0.44	0.20	0.97							
Capacity (veh/h)	508	454	489	507	601							
Control Delay (s)	14.7	11.6	14.7	11.3	54.1							
Approach Delay (s)	14.7	13.7		11.3	54.1							
Approach LOS	В	В		В	F							
Intersection Summary												
Delay			33.1									
HCM Level of Service			D									
Intersection Capacity Ut	ilization	1	61.5%	10	CU Lev	el of Ser	vice		В			
Analysis Period (min)			15									

Barrio Logan CPU 8: National Ave & Be	eardsle	ey St				Horiz	zon Ye	ear Alt			proven lan: AM	
	≯	-	\mathbf{r}	4	+	•	•	Ť	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Т.		J.	Þ			de.			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	8	238	8	241	421	67	4	30	50	216	138	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	259	9	262	458	73	4	33	54	235	150	25
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	9	267	262	530	91	410						
Volume Left (vph)	9	0	262	0	4	235						
Volume Right (vph)	0	9	0	73	54	25						
Hadj (s)	0.53	0.01	0.53	-0.06	-0.31	0.11						
Departure Headway (s)	8.2	7.7	7.6	7.0	7.6	6.9						
Degree Utilization, x	0.02	0.57	0.55	1.03	0.19	0.78						
Capacity (veh/h)	419	446	466	517	419	410						
Control Delay (s)	10.2	19.1	18.5	73.5	12.5	30.6						
Approach Delay (s)	18.9		55.3		12.5	30.6						
Approach LOS	С		F		В	D						
Intersection Summary												
Delay			39.9									
HCM Level of Service			E									
Intersection Capacity Uti	lization		67.4%	10	CU Lev	el of Ser	vice		С			
Analysis Period (min)			15									

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Barrio Logan CPU 9: Newton Ave & Be	ardsle	ey St				Hori	zon Y	ear Alt	1 with T		prover Plan: AN	
	۶	-	\mathbf{r}	4	+	•	1	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		¢.			4			40			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	18	74	9	29	82	15	13	23	19	56	156	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	80	10	32	89	16	14	25	21	61	170	45
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	110	137	60	275								
Volume Left (vph)	20	32	14	61								
Volume Right (vph)	10	16	21	45								
Hadj (s)	0.02	0.01	-0.13	-0.02								
Departure Headway (s)	4.9	4.9	4.7	4.6								
Degree Utilization, x	0.15	0.19	0.08	0.35								
Capacity (veh/h)	675	684	699	745								
Control Delay (s)	8.8	9.0	8.2	10.0								
Approach Delay (s)	8.8	9.0	8.2	10.0								
Approach LOS	A	А	А	В								
Intersection Summary												
Delay			9.4									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	ı	38.0%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 10: Main St & Beard	slev S	St				Hori	zon Ye	ear Alt	1 with	out Im iming P		
	۶	-	\mathbf{F}	4	+	×	1	1	۲	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		÷.			4			40			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	15	74	4	163	109	76	2	8	52	275	57	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	80	4	177	118	83	2	9	57	299	62	57
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	101	378	67	417								
Volume Left (vph)	16	177	2	299								
Volume Right (vph)	4	83	57	57								
Hadj (s)	0.04	0.00	-0.46	0.10								
Departure Headway (s)	6.0	5.5	5.6	5.5								
Degree Utilization, x	0.17	0.58	0.10	0.64								
Capacity (veh/h)	528	623	545	626								
Control Delay (s)	10.2	15.7	9.2	17.6								
Approach Delay (s)	10.2	15.7	9.2	17.6								
Approach LOS	В	С	А	С								
Intersection Summary												
Delay			15.5									
HCM Level of Service			С									
Intersection Capacity Ut	ilizatior	۱	61.3%	10	CU Lev	el of Ser	vice		В			
Analysis Period (min)			15									

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Barrio Logan CPU	Horizon Year Alt 1 without Improvements
11: Harbor Dr & Beardsley St	Timing Plan: AM Peak
× → ← ⊀	$\checkmark \checkmark$

Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	7	ተቀ	朴		44		 	
Sign Control		Free	Free		Stop			
Grade		0%	0%		0%			
Volume (veh/h)	22	580	1610	30	48	95		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	24	630	1750	33	52	103		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type					Raised			
Median storage veh)					0			
Upstream signal (ft)			658					
pX, platoon unblocked	0.69				0.69	0.69		
vC, conflicting volume	1783				2129	891		
vC1, stage 1 conf vol					1766			
vC2, stage 2 conf vol					363			
vCu, unblocked vol	1683				2189	383		
tC, single (s)	4.3				6.8	6.9		
tC, 2 stage (s)					5.8			
tF (s)	2.3				3.5	3.3		
p0 queue free %	90				13	76		
cM capacity (veh/h)	235				60	422		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1		
Volume Total	24	315	315	1167	616	155		
Volume Left	24	0	0	0	0	52		
Volume Right	0	0	0	0	33	103		
cSH	235	1700	1700	1700	1700	139		
Volume to Capacity	0.10	0.19	0.19	0.69	0.36	1.12		
Queue Length 95th (ft)	8	0	0	0	0	218		
Control Delay (s)	22.1	0.0	0.0	0.0	0.0	173.7		
Lane LOS	С					F		
Approach Delay (s)	0.8			0.0		173.7		
Approach LOS						F		
Intersection Summary							 	
Average Delay			10.6					
Intersection Capacity Ut	ilization		60.6%	1	CU Lev	el of Service	В	
Analysis Period (min)			15					

	≯	1	1	1	t	*	*	ŧ	*	•	T	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	EDL	EDI	EDR	VVDL W		VVDR	NDL \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		NDR	SDL	41	JDP
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1 900	1900	1900	1900	1900
Fotal Lost time (s)	1300	1300	1300	4.0	4.0	1300	4.0	4.0	1300	1300	4.0	1900
ane Util. Factor				0.95	0.95		1.00	1.00			0.95	
Frt				1.00	0.95		1.00	1.00			0.99	
It Protected				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (prot)				1478	1461		1626	1712			3212	
It Permitted				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (perm)				1478	1461		1626	1712			3212	
/olume (vph)	0	0	0	613	259	192	257	262	0	0	350	31
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	666	282	209	279	285	0	0	380	34
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	9	0
ane Group Flow (vph)	0	0	0	568	568	0	279	285	0	0	405	0
leavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%
Furn Type				Split			Split					
Protected Phases				8	8		6	6			2	
Permitted Phases												
Actuated Green, G (s)				27.7	27.7		16.7	16.7			15.5	
Effective Green, g (s)				27.7	27.7		16.7	16.7			15.5	
Actuated g/C Ratio				0.39	0.39		0.23	0.23			0.22	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
/ehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
ane Grp Cap (vph)				569	563		378	398			692	
/s Ratio Prot				0.38	c0.39		c0.17	0.17			c0.13	
/s Ratio Perm												
//c Ratio				1.00	1.01		0.74	0.72			0.59	
Jniform Delay, d1				22.1	22.1		25.6	25.4			25.3	
Progression Factor				1.00	1.00		1.00	1.00			1.00	
ncremental Delay, d2				37.0	40.2 62.3		7.4	6.0			1.3 26.6	
Delay (s) evel of Service				59.1 E	62.3 E		32.9 C	31.5 C			26.6 C	
Approach Delay (s)		0.0			⊑ 60.7		C	32.2			26.6	
Approach LOS		0.0 A			60.7 F			32.2 C			20.0 C	
		~			-			U			U	
ntersection Summary) a lavi		40.0						_			
HCM Average Control D HCM Volume to Capacit			46.6 0.82	F		vel of Se	ervice		D			
Actuated Cycle Length (71.9	C	um of I	ost time	(c)		12.0			
Intersection Capacity Ut			64.5%			el of Sei	· · /		12.0 C			
Analysis Period (min)	mzation		04.5% 15	P. P.	SO Levi		VICE		U			
Critical Lane Group			15									

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Movement EBL EBT EBR WBL WBR NBL NBT NBR SBL SB	Barrio Logan CPU 13: Logan Ave & Ce	sar E.	Chave	ez Pkv	w		Hori	zon Ye	ear Alt	1 with T		prover Plan: AM	
Lane Configurations m h m		≯	-	7	4	+	•	•	Ť	1	1	Ļ	~
Ideal Flow (vphp) 1900 100	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost time (s) 4.0<	Lane Configurations	ň	Т.		μ,	ţ.	7	Ϋ́	44	٣	7	41.	
Lane Util, Factor 1.00 <td>Ideal Flow (vphpl)</td> <td>1900</td>	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Frpb, ped/bikes 1.00 0.99 1.00	Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Fipb, ped/bikes 0.99 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00	Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Fri 1.00 0.96 1.00 1.00 0.85 1.00 0.85 1.00 0.99 Fit Protected 0.95 1.00 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 <td>Frpb, ped/bikes</td> <td>1.00</td> <td>0.99</td> <td></td> <td>1.00</td> <td>1.00</td> <td>0.97</td> <td>1.00</td> <td>1.00</td> <td>0.97</td> <td>1.00</td> <td>1.00</td> <td></td>	Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	
Fit Protected 0.95 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 </td <td>Flpb, ped/bikes</td> <td>0.99</td> <td>1.00</td> <td></td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td></td>	Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot) 1758 1766 1762 1863 1544 1530 3059 1328 1530 3008 Flt Permitted 0.30 1.00 0.19 1.00 0.95 1.00 1.00 0.95 1.00 0.05 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.92											1.00		
Fit Permitted 0.30 1.00 0.19 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 Satd. Flow (perm) 564 1766 346 1863 1544 1530 3008 Volume (vph) 140 280 120 0.92 <th0.92< th=""> <th0.92< th=""> <th0.92< th=""></th0.92<></th0.92<></th0.92<>													
Satd. Flow (perm) 564 1766 346 1863 1544 1530 3059 1328 1530 3008 Volume (vph) 140 280 120 100 325 76 100 300 280 70 909 8 Peak-hour factor, PHF 0.92 <	Satd. Flow (prot)	1758	1766		1762	1863	1544	1530	3059	1328	1530	3008	
Volume (vph) 140 280 120 100 325 76 100 300 280 70 909 8 Peak-hour factor, PHF 0.92 </td <td>Flt Permitted</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1.00</td> <td></td> <td></td> <td></td> <td></td>	Flt Permitted								1.00				
Peak-hour factor, PHF 0.92	Satd. Flow (perm)											3008	
Adj. Flow (vph) 152 304 130 109 353 83 109 326 304 76 988 8 RTOR Reduction (vph) 0 22 0 0 0 0 0 0 178 0 7 Lane Group Flow (vph) 152 412 0 109 353 23 109 326 126 76 1070 Confl. Bikes (#/hr) 15 13 13 15 17 7 3 Confl. Bikes (#/hr) 4 168 18% <													82
RTOR Reduction (vph) 0 22 0 0 60 0 0 178 0 7 Lane Group Flow (vph) 152 412 0 109 353 23 109 326 126 76 1070 Confl. Biks (#/hr) 15 13 13 15 17 3 Confl. Biks (#/hr) 4 4 18% 12.3 3.5 25<	Peak-hour factor, PHF						0.92				0.92		0.92
Lane Group Flow (vph) 152 412 0 109 353 23 109 326 126 76 1070 Confl. Peds. (#/hr) 15 13 13 15 17 3 Confl. Bikes (#/hr) 4 4 167 18%													89
Confl. Peds. (#/hr) 15 13 13 13 15 17 3 Confl. Bikes (#/hr) 4 4 18%													0
Confl. Bikes (#/hr) 4 Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 2% 18%			412			353		109	326		76	1070	0
Heary Vehicles (%) 2% 2% 2% 2% 2% 2% 2% 18%		15			13		15			17			39
Turn Type Perm Perm Perm Perm Prot Perm Prot Protected Phases 4 8 5 2 1 6 Permitted Phases 4 8 8 2 1 6 Permitted Phases 4 8 8 2 1 6 Actuated Green, G (s) 22.5 22.5 22.5 22.5 8.0 33.2 12.3 37.5 Effective Green, g (s) 22.5 22.5 22.5 22.5 8.0 33.2 12.3 37.5 Actuated g/C Ratio 0.28 0.28 0.28 0.28 0.10 0.42 0.42 0.15 0.47 Clearance Time (s) 4.0 <td< td=""><td>· · · ·</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2</td></td<>	· · · ·												2
Protected Phases 4 8 5 2 1 6 Permitted Phases 4 8 8 2 Actuated Green, G (s) 22.5 22.6 20.5 0.12 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.5 0.41 0.5 0.5 0.3 0.5 0.3			2%	2%		2%			18%			18%	18%
Permitted Phases 4 8 8 2 Actuated Green, G (s) 22.5 22.5 22.5 22.5 22.5 33.2 12.3 37.5 Effective Green, g (s) 22.5 22.5 22.5 22.5 22.5 22.5 33.2 12.3 37.5 Actuated g/C Ratio 0.28 0.28 0.28 0.28 0.10 0.42 0.42 0.15 0.47 Clearance Time (s) 4.0 5		Perm			Perm		Perm			Perm			
Actuated Green, G (s) 22.5 22.5 22.5 22.5 22.5 22.5 33.2 12.3 37.5 Effective Green, g (s) 02.8 0.28 0.28 0.28 0.28 0.10 0.42 0.42 0.15 0.47 Clearance Time (s) 4.0 5.0 <td></td> <td></td> <td>4</td> <td></td> <td></td> <td>8</td> <td></td> <td>5</td> <td>2</td> <td>-</td> <td>1</td> <td>6</td> <td>_</td>			4			8		5	2	-	1	6	_
Effective Green, g (s) 22.5 22.5 22.5 22.5 22.5 8.0 33.2 33.2 12.3 37.5 Actuated g/C Ratio 0.28 0.28 0.28 0.28 0.28 0.28 0.10 0.42 0.42 0.15 0.47 Clearance Time (s) 4.0 0.2 0.6													
Actuated g/C Ratio 0.28 0.28 0.28 0.28 0.10 0.42 0.42 0.15 0.47 Clearance Time (s) 4.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.00 1.02 0.66 0.25 1.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Clearance Time (s) 4.0													
Vehicle Extension (s) 3.0													
Lane Grp Cap (vph) 159 497 97 524 434 153 1269 551 235 1410 v/s Ratio Prot 0.23 0.19 c0.07 0.11 0.05 c0.36 v/s Ratio Perm 0.27 c0.31 0.02 0.09 0.09 v/c Ratio 0.96 0.83 1.12 0.67 0.05 0.71 0.26 0.23 0.32 0.76 Uniform Delay, d1 28.3 26.9 28.8 25.5 21.0 34.9 15.3 15.1 30.1 17.5 Progression Factor 1.00 <t< td=""><td>· · · · · · · · · · · · · · · · · · ·</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	· · · · · · · · · · · · · · · · · · ·												
v/s Ratio Prot 0.23 0.19 c0.07 0.11 0.05 c0.36 v/s Ratio Perm 0.27 c0.31 0.02 0.09 v/s v/c Ratio 0.96 0.83 1.12 0.67 0.71 0.26 0.23 0.32 0.76 Uniform Delay, d1 28.3 26.9 28.8 25.5 21.0 34.9 15.3 15.1 30.1 17.5 Progression Factor 1.00<													
v/s Ratio Perm 0.27 c0.31 0.02 0.09 v/c Ratio 0.96 0.83 1.12 0.67 0.05 0.71 0.26 0.23 0.32 0.76 Uniform Delay, d1 28.3 26.9 28.8 25.5 21.0 34.9 15.3 15.1 30.1 17.5 Progression Factor 1.00 1.00 1.00 1.00 1.02 0.66 0.25 1.00 1.00 Incremental Delay, d2 57.8 10.9 128.6 3.4 0.1 11.3 0.4 0.7 0.8 3.9 Delay (s) 86.0 37.8 157.4 28.9 21.0 46.8 10.4 4.5 30.9 21.4 Level of Service F D F C C D B A C C Approach LOS D D D B C C Intersection Summary HCM Average Control Delay 31.1 HCM Level of Service C C HCM Volume to Capacity ratio 0.87 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 75.8% ICU Level of Service D D <td></td> <td>159</td> <td></td> <td></td> <td>97</td> <td></td> <td>434</td> <td></td> <td></td> <td>551</td> <td></td> <td></td> <td></td>		159			97		434			551			
v/c Ratio 0.96 0.83 1.12 0.67 0.05 0.71 0.26 0.23 0.32 0.76 Uniform Delay, d1 28.3 26.9 28.8 25.5 21.0 34.9 15.3 15.1 30.1 17.5 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.66 0.25 1.00 1.00 Incremental Delay, d2 57.8 10.9 128.6 3.4 0.1 11.3 0.4 0.7 0.8 3.9 Delay (s) 86.0 37.8 157.4 28.9 21.0 46.8 10.4 4.5 30.9 21.4 Level of Service F D F C C D B A C C Approach LOS D B C C D B C C HCM Average Control Delay 31.1 HCM Level of Service C C HCM Average Control Delay 0.87 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 12.0 12.0 141455 <		0.07	0.23		0.01	0.19	0.00	c0.07	0.11	0.00	0.05	c0.36	
Uniform Delay, d1 28.3 26.9 28.8 25.5 21.0 34.9 15.3 15.1 30.1 17.5 Progression Factor 1.00 <						0.07		0.74	0.00			0 70	
Progression Factor 1.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Incremental Delay, d2 57.8 10.9 128.6 3.4 0.1 11.3 0.4 0.7 0.8 3.9 Delay (s) 86.0 37.8 157.4 28.9 21.0 46.8 10.4 4.5 30.9 21.4 Level of Service F D F C C D B A C C Approach Delay (s) 50.3 53.4 13.4 22.0 Approach LOS D D B C C Intersection Summary HCM Average Control Delay 31.1 HCM Level of Service C C HCM Volume to Capacity ratio 0.87 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 75.8% ICU Level of Service D D Analysis Period (min) 15													
Delay (s) 86.0 37.8 157.4 28.9 21.0 46.8 10.4 4.5 30.9 21.4 Level of Service F D F C C D B A C C Approach Delay (s) 50.3 53.4 13.4 22.0 Approach LOS D B C C Intersection Summary HCM Average Control Delay 31.1 HCM Level of Service C C HCM Volume to Capacity ratio 0.87 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 75.8% ICU Level of Service D Analysis Period (min) 15													
Level of Service F D F C D B A C C Approach Delay (s) 50.3 53.4 13.4 22.0 Approach LOS D D B C Intersection Summary HCM Average Control Delay 31.1 HCM Level of Service C HCM Volume to Capacity ratio 0.87 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 75.8% ICU Level of Service D Analysis Period (min) 15													
Approach Delay (s) 50.3 53.4 13.4 22.0 Approach LOS D D B C Intersection Summary Intersection Summary Intersection Summary C HCM Average Control Delay 31.1 HCM Level of Service C HCM Volume to Capacity ratio 0.87 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 75.8% ICU Level of Service D Analysis Period (min) 15													
Approach LOS D D B C Intersection Summary Intersection Summary Intersection Service C HCM Average Control Delay 31.1 HCM Level of Service C HCM Volume to Capacity ratio 0.87 C Actuated Cycle Length (s) 80.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 75.8% ICU Level of Service D Analysis Period (min) 15		г			г		U	U		A	U		
Intersection Summary HCM Average Control Delay 31.1 HCM Level of Service C HCM Volume to Capacity ratio 0.87													
HCM Average Control Delay 31.1 HCM Level of Service C HCM Volume to Capacity ratio 0.87	Approach LOS		U			U			В			C	
HCM Volume to Capacity ratio 0.87 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 75.8% ICU Level of Service D Analysis Period (min) 15	Intersection Summary												
Actuated Cycle Length (s) 80.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 75.8% ICU Level of Service D Analysis Period (min) 15	HCM Average Control D)elay		31.1	H	ICM Le	vel of S	ervice		С			
Intersection Capacity Utilization 75.8% ICU Level of Service D Analysis Period (min) 15 15 15 15													
Analysis Period (min) 15	Actuated Cycle Length (s)			S	Sum of I	ost time	e (s)		12.0			
		ilization			10	CU Lev	el of Se	rvice		D			
a Critical Lana Craup				15									

Synchro 6 Report Page 14

c Critical Lane Group

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU						Hor	izon Y	ear Al		out Improvement
14: National Ave 8	Cesar	E. Ch	avez F	Ykwy					٦	Fiming Plan: AM Pea
	٦	-	4	+	1	Ť	1	ţ	~	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	ň	ţ,	¥,	1.	×	41>	μ	4	ř	-
Volume (vph)	190	250	120	350	90	580	70	745	310	
Turn Type	Perm		Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6		
Permitted Phases	4		8		2		6		6	
Detector Phases	4	4	8	8	2	2	6	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0	
Total Split (%)	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Intersection Summary										
Cycle Length: 80										
Actuated Cycle Length	า: 80									
Offset: 76 (95%), Refe	erenced t	o phase	2:NBT	L and 6	SBTL,	Start of	Green			
Natural Cycle: 75										

Natural Cycle: 75 Control Type: Actuated-Coordinated

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy

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46 s	34 s
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46 s	34 s

K:\SND_TPTO\095707000\Synchro\HY Al1 AM no Improvements.sy7 KHA Kimley-Horn and Associates, Inc.
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ţ,		36	10		Υç	4 1>		7	4	N.
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1746		1770	1792		1612	3185		1530	1610	1369
Flt Permitted	0.23	1.00		0.28	1.00		0.12	1.00		0.34	1.00	1.00
Satd. Flow (perm)	436	1746		519	1792		204	3185		544	1610	1369
Volume (vph)	190	250	180	120	350	120	90	580	50	70	745	310
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	272	196	130	380	130	98	630	54	76	810	337
RTOR Reduction (vph)	0	32	0	0	15	0	0	8	0	0	0	141
Lane Group Flow (vph)	207	436	0	130	495	0	98	676	0	76	810	196
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	30.6	30.6		30.6	30.6		41.4	41.4		41.4	41.4	41.4
Effective Green, g (s)	30.6	30.6		30.6	30.6		41.4	41.4		41.4	41.4	41.4
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.52	0.52		0.52	0.52	0.52
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	167	668		199	685		106	1648		282	833	708
v/s Ratio Prot		0.25			0.28			0.21			c0.50	
v/s Ratio Perm	c0.47			0.25			0.48			0.14		0.14
v/c Ratio	1.24	0.65		0.65	0.72		0.92	0.41		0.27	0.97	0.28
Uniform Delay, d1	24.7	20.3		20.3	21.1		17.9	11.8		10.8	18.7	10.9
Progression Factor	1.00	1.00		1.00	1.00		0.86	0.84		0.26	0.43	0.05
Incremental Delay, d2	148.3	2.3		7.5	3.8		68.3	0.7		1.5	19.2	0.6
Delay (s)	173.0	22.6		27.8	24.8		83.7	10.6		4.4	27.4	1.2
Level of Service	F	C 68.7		С	C 25.4		F	B		A	C 18.7	A
Approach Delay (s)		68.7 E			25.4 C			19.8 B			18.7 B	
Approach LOS		E			U			В			В	
Intersection Summary												
HCM Average Control D	Delay		30.4	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit			1.09									
Actuated Cycle Length (80.0			ost time			8.0			
Intersection Capacity Ut	ilization	1	93.8%	10	CU Lev	el of Se	rvice		F			
Analysis Period (min)			15									

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KHA	

Synchro 6 Report

Page 2

Barrio Logan CPU Horizon Year Alt 1 without Improvements Timing Plan: AM Peak 15: Newton Ave & Cesar E. Chavez Pkwy ٦ 1 ŧ 1 € Lane Group EBL EBT WBL WBT NBL NBT SBL SBT Lane Configurations 41. ₿ 810 η Т. 1a Volume (vph) 75 40 40 50 40 410 95 Turn Type Perm Perm Perm Perm Protected Phases 4 8 2 6 Permitted Phases 4 8 2 6 Detector Phases 4 2 2 6 4 8 8 6 Minimum Initial (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Minimum Split (s) 31.0 27.0 27.0 27.0 31.0 31.0 31.0 27.0 49.0 Total Split (s) 31.0 31.0 31.0 31.0 49.0 49.0 49.0 Total Split (%) 38.8% 38.8% 38.8% 38.8% 61.3% 61.3% 61.3% 61.3% Yellow Time (s) 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 All-Red Time (s) 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 Lead/Lag Lead-Lag Optimize? Recall Mode None None None C-Min C-Min C-Min C-Min Intersection Summary Cycle Length: 80 Actuated Cycle Length: 80 Offset: 2 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy

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49 s	31	1 s
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49 s	31	1 s



Synchro 6 Report Page 1

Barrio Logan CPU 15: Newton Ave & C	esar E	. Cha	vez Pk	Horizon Year Alt 1 without Improvements Timing Plan: AM Peak								
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ţ,		×	ħ		μÇ	† 1 ₀		ž	T.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.91		1.00	0.91		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1695		1770	1704		1612	3190		1612	1659	
Flt Permitted	0.58	1.00		0.65	1.00		0.21	1.00		0.48	1.00	
Satd. Flow (perm)	1076	1695		1203	1704		349	3190		811	1659	
Volume (vph)	75	40	60	40	50	65	40	410	30	95	810	140
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	43	65	43	54	71	43	446	33	103	880	152
RTOR Reduction (vph)	0	58	0	0	63	0	0	3	0	0	4	0
Lane Group Flow (vph)	82	50	0	43	62	0	43	476	0	103	1028	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.9	8.9		8.9	8.9		63.1	63.1		63.1	63.1	
Effective Green, g (s)	8.9	8.9		8.9	8.9		63.1	63.1		63.1	63.1	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.79	0.79		0.79	0.79	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	120	189		134	190		275	2516		640	1309	
v/s Ratio Prot		0.03			0.04			0.15			c0.62	
v/s Ratio Perm	c0.08			0.04			0.12			0.13		
v/c Ratio	0.68	0.27		0.32	0.33		0.16	0.19		0.16	0.79	
Uniform Delay, d1	34.2	32.6		32.8	32.8		2.0	2.1		2.0	4.7	
Progression Factor	1.00	1.00		1.00	1.00		0.57	0.45		0.58	0.42	
Incremental Delay, d2	14.9	0.8		1.4	1.0		1.0	0.1		0.2	2.2	
Delay (s)	49.1	33.3		34.2	33.8		2.1	1.1		1.4	4.1	
Level of Service	D	С		С	С		А	А		А	А	
Approach Delay (s)		40.1			33.9			1.2			3.9	
Approach LOS		D			С			А			А	
Intersection Summary												
HCM Average Control E			9.1	H	ICM Le	vel of S	ervice		А			
HCM Volume to Capaci	ty ratio		0.77									
Actuated Cycle Length (s)		80.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		75.3%	10	CU Lev	el of Se	vice		D			
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group)
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K:\SND_TPTO\095707000\Synchro\HY Al1 AM no Improvements.sy7 KHA Kimley-Horn and Associates, Inc. Synchro 6 Report Page 2 Barrio Logan CPU Horizon Year Alt 1 without Improvements 16: Main St & Cesar E. Chavez Pkwy Timing Plan: AM Peak ٦ ŧ € * ∕• Lane Group EBL EBT WBL WBT NBL NBT SBL SBT Lane Configurations 41. ¥ Т. 1a Ъ Volume (vph) 150 190 70 330 70 340 150 580 Turn Type Perm Perm Perm Perm Protected Phases 4 2 6 8 Permitted Phases 4 8 2 6 Detector Phases 4 2 2 6 4 8 8 6 Minimum Initial (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Minimum Split (s) 27.0 27.0 27.0 31.0 31.0 31.0 31.0 27.0 42.0 Total Split (s) 38.0 38.0 42.0 42.0 42.0 38.0 38.0 47.5% 47.5% 47.5% Total Split (%) 47.5% 52.5% 52.5% 52.5% 52.5% Yellow Time (s) 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 All-Red Time (s) 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 Lead/Lag Lead-Lag Optimize? Recall Mode None None None C-Min C-Min C-Min C-Min Intersection Summary Cycle Length: 80 Actuated Cycle Length: 80 Offset: 14 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy

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42 s	38 s
↓ ~ _{ø6}	€ 08
42 s	38 s

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Lane Configurations Th Th <th>Barrio Logan CPU 16: Main St & Cesar</th> <th>r E. Ch</th> <th>avez F</th> <th>Pkwy</th> <th></th> <th></th> <th colspan="8">Horizon Year Alt 1 without Improvements Timing Plan: AM Peak</th>	Barrio Logan CPU 16: Main St & Cesar	r E. Ch	avez F	Pkwy			Horizon Year Alt 1 without Improvements Timing Plan: AM Peak							
Lane Configurations m		≯	-	~	4	+	•	•	Ť	1	1	ţ	~	
Ideal Flow (vphp) 1900 150 1800 1900 150 1800 1900 150<	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Ideal Flow (vphp) 1900 150 1800 1900 150 1800 1900 150<	Lane Configurations	ň	Ť.		μ,	Þ		Υç	41		7	T.		
Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 0.00 9.95 1.00 0.00 Frpb, ped/bikes 0.09 1.00 0.98 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.95 1.00 0.95 1.00 0.96 1.00 0.96 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.96 1.00 0.96 1.00 0.95 1.00 0.95 1.00 0.96 1.00 0.95 1.00 0.96 1.00 0.96 1.00 0.96 1.00 0.96 1.00 0.96 1.00 0.96 1.00 0.96 1.00 0.96 1.00	Ideal Flow (vphpl)	1900		1900	1900		1900	1900		1900	1900		1900	
Frpb, ped/bikes 1.00 1.00 1.00 0.98 1.00 0.98 1.00 0.98 Figh, ped/bikes 0.99 1.00 0.99 1.00 0.95 1.00 1.05 1.00 1.05 1.00 1.05 1.00 1.05 1.00 1.05 1.00 1.05 1.00 1.00 1.00 1.00	Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0		
Fipb, ped/bikes 0.99 1.00 0.99 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00	Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.99		1.00	0.98		
Fit Protected 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 Satd. Flow (prot) 1751 1839 1750 1731 1556 2996 1549 1555 Fit Permitted 0.20 1.00 0.57 1.00 0.10 1.00 0.45 1.00 Satd. Flow (perm) 374 1839 1044 1731 165 2996 741 1555 Volume (vph) 150 150 150 70 330 190 70 340 90 150 580 180 Peak-hour fator, PHF 0.92	Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00		
Satd. Flow (prot) 1751 1839 1750 1731 1556 2996 1549 1555 Fit Permitted 0.20 1.00 0.57 1.00 0.10 1.00 0.45 1.00 Satd. Flow (perm) 374 1839 1044 1731 165 2996 741 1555 Volume (vph) 150 190 15 70 330 190 70 340 90 150 580 180 Peak-hour factor, PHF 0.92 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1.00</td><td></td><td></td></t<>											1.00			
Fit Permitted 0.20 1.00 0.57 1.00 0.10 1.00 0.45 1.00 Satd. Flow (perm) 374 1839 1044 1731 165 296 741 1555 Volume (vph) 150 150 150 150 70 330 190 70 340 90 150 580 180 Peak-hour factor, PHF 0.92														
Satd. Flow (perm) 374 1839 1044 1731 165 2996 741 1555 Volume (vph) 150 190 15 70 330 190 70 340 90 150 580 180 Peak-hour factor, PHF 0.92 0.93 0.163 812 0 0.6 0.6 0.92 0.163 812 0 0.6 0.92 <td>Satd. Flow (prot)</td> <td>1751</td> <td>1839</td> <td></td> <td></td> <td>1731</td> <td></td> <td>1556</td> <td>2996</td> <td></td> <td>1549</td> <td>1555</td> <td></td>	Satd. Flow (prot)	1751	1839			1731		1556	2996		1549	1555		
Volume (vph) 150 190 15 70 330 190 70 340 90 150 580 180 Peak-hour factor, PHF 0.92	FIt Permitted													
Peak-hour factor, PHF 0.92 0.8 163 </td <td>Satd. Flow (perm)</td> <td></td>	Satd. Flow (perm)													
Adj. Flow (vph) 163 207 16 76 359 207 76 370 98 163 630 196 RTOR Reduction (vph) 0 4 0 0 27 0 0 29 0 0 14 0 Lane Group Flow (vph) 163 219 0 76 539 0 76 439 0 163 812 0 Confl. Bikes (#/hr) 2 1 1 1 2 1 1 2 26 Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 16% 16% 16% 16% 16% Turn Type Perm 6 39.6 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>180</td></td<>													180	
RTOR Reduction (vph) 0 4 0 0 27 0 0 29 0 0 14 C Lane Group Flow (vph) 163 219 0 76 539 0 76 439 0 163 812 C Confl. Bikes (#/hr) 38 18 18 38 26 5 5 20 Confl. Bikes (#/hr) 2 1 1 1 2 1 1 2 Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 16% 1	Peak-hour factor, PHF			0.92				0.92					0.92	
Lane Group Flow (vph)1632190765390764390163812CConfl. Peds. (#hr)38181818382655526Confl. Bikes (#hr)21112Heavy Vehicles (%)2%2%2%2%2%16%16%16%16%Turn TypePermPermPermPermPermProtected Phases4826Actuated Green, G (s)32.432.432.439.639.639.6Effective Green, g (s)32.432.432.439.639.639.6Clearance Time (s)4.04.04.04.04.04.0Vehicle Extension (s)3.03.03.03.03.03.0Lane Grp Cap (vph)151745423701821483367V/s Ratio Prot0.120.310.15c0.52v/s Ratio Prot0.120.310.15c0.52V/s Ratio Prot0.220.25.180.60.52.642.52.642.5Delay (d)119.816.315.525.799.512.511.356.4Level of ServiceFBBCFBBEApproach LoSECCDDDDDIncremental Delay (s)60.024.524.649.049.0<													196	
Confl. Peds. (#/hr) 38 18 18 38 26 5 5 26 Confl. Bikes (#/hr) 2 1 1 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 1 2 1 1 1 1 2 2 1 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td>													0	
Confl. Bikes (#hr) 2 1 1 2 Heavy Vehicles (%) 2% 2% 2% 2% 2% 1% 16%			219			539			439			812	0	
Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 2% 16% <th16%< th=""> 16% <th16%< th=""> <th16< td=""><td></td><td>38</td><td></td><td></td><td>18</td><td></td><td></td><td>26</td><td></td><td></td><td>5</td><td></td><td>26</td></th16<></th16%<></th16%<>		38			18			26			5		26	
Turn Type Perm Perm Perm Perm Protected Phases 4 8 2 6 Permitted Phases 4 8 2 6 Actuated Green, G (s) 32.4 32.4 32.4 39.6 39.6 39.6 Effective Green, g (s) 32.4 32.4 32.4 32.4 39.6 39.6 39.6 Actuated g/C Ratio 0.40 0.40 0.40 0.40 0.40 4.0 6.15 2.0 7.0 4.0 4.0 4.0 4.0 4.0 4.0	· · · ·												2	
Protected Phases 4 8 2 6 Permitted Phases 4 8 2 6 Actuated Green, G (s) 32.4 32.4 32.4 39.6 39.6 39.6 Effective Green, g (s) 32.4 32.4 32.4 32.4 39.6 39.6 39.6 Actuated g/C Ratio 0.40 0.40 0.40 0.40 0.40 4.0 <t< td=""><td></td><td></td><td>2%</td><td>2%</td><td></td><td>2%</td><td>2%</td><td></td><td>16%</td><td>16%</td><td></td><td>16%</td><td>16%</td></t<>			2%	2%		2%	2%		16%	16%		16%	16%	
Permitted Phases 4 8 2 6 Actuated Green, G (s) 32.4 32.4 32.4 32.4 39.6 39.6 39.6 39.6 Effective Green, g (s) 32.4 32.4 32.4 32.4 39.6 39.6 39.6 Actuated g/C Ratio 0.40 0.40 0.40 0.50 0.50 0.50 0.50 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0		Perm			Perm			Perm			Perm			
Actuated Green, G (s) 32.4 32.4 32.4 32.4 32.4 32.4 39.6 30.6 50.5 50.6 40.2 50.2 50.2 50.6 10.6 10.0 <			4			8		-	2			6	_	
Effective Green, g (s) 32.4 32.4 32.4 32.4 39.6 39.6 39.6 39.6 Actuated g/C Ratio 0.40 0.40 0.40 0.40 0.50 0.50 0.50 0.50 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 151 745 423 701 82 1483 367 770 v/s Ratio Prot 0.12 0.31 0.15 c0.52 v/s Ratio Prot 0.12 c0.31 0.15 c0.52 v/s Ratio Perm c0.44 0.07 0.46 0.22 v/c Ratio 1.08 0.29 0.18 0.77 0.93 0.30 0.44 1.06 Uniform Delay, d1 23.8 16.1 15.3 20.6 18.8 12.0 13.1 20.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00														
Actuated g/C Ratio 0.40 0.40 0.40 0.50 0.50 0.50 0.50 Clearance Time (s) 4.0 3.0													_	
Clearance Time (s) 4.0														
Vehicle Extension (s) 3.0													_	
Lane Grp Cap (vph) 151 745 423 701 82 1483 367 770 v/s Ratio Prot 0.12 0.31 0.15 c0.52 v/s c0.52 v/s Ratio Perm c0.44 0.07 0.46 0.22 v/s c0.52 v/s Ratio Perm c0.44 0.07 0.46 0.22 v/s c0.52 v/s Ratio 1.08 0.29 0.18 0.77 0.93 0.30 0.44 1.06 Uniform Delay, d1 23.8 16.1 15.3 20.6 18.8 12.0 13.1 20.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 0.66 0.69 Incremental Delay, d2 96.0 0.2 0.2 5.1 80.6 0.5 2.6 42.5 Delay (s) 11.9 81.6.3 15.5 25.7 99.5 12.5 11.3 56.4 Level of Service F B B E C C D D Approach LOS E	· · · · · · · · · · · · · · · · · · ·													
v/s Ratio Prot 0.12 0.31 0.15 c0.52 v/s Ratio Perm c0.44 0.07 0.46 0.22 v/c Ratio 1.08 0.29 0.18 0.77 0.93 0.30 0.44 1.06 Uniform Delay, d1 23.8 16.1 15.3 20.6 18.8 12.0 13.1 20.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 0.66 0.69 Incremental Delay, d2 96.0 0.2 0.2 5.1 80.6 0.5 2.6 42.5 Delay (s) 119.8 16.3 15.5 25.7 99.5 12.5 11.3 56.4 Level of Service F B B C F B B E Approach LOS E C C D <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>														
v/s Ratio Perm c0.44 0.07 0.46 0.22 v/c Ratio 1.08 0.29 0.18 0.77 0.93 0.30 0.44 1.06 Uniform Delay, d1 23.8 16.1 15.3 20.6 18.8 12.0 13.1 20.2 Progression Factor 1.00 1.00 1.00 1.00 0.66 0.69 Incremental Delay, d2 96.0 0.2 0.2 5.1 80.6 0.5 2.6 42.5 Delay (s) 119.8 16.3 15.5 25.7 99.5 12.5 11.3 56.4 Level of Service F B B C F B B E Approach LOS E C C D D Intersection Summary HCM Average Control Delay 39.3 HCM Level of Service D D E C D D Intersection Capacity ratio 1.06 Actuated Cycle Length (s) 8.0 Nonof lost time (s) 8.0 <td< td=""><td></td><td>151</td><td></td><td></td><td>423</td><td></td><td></td><td>82</td><td></td><td></td><td>367</td><td></td><td></td></td<>		151			423			82			367			
v/c Ratio 1.08 0.29 0.18 0.77 0.93 0.30 0.44 1.06 Uniform Delay, d1 23.8 16.1 15.3 20.6 18.8 12.0 13.1 20.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 0.66 0.69 Incremental Delay, d2 96.0 0.2 0.2 5.1 80.6 0.5 2.6 42.5 Delay (s) 119.8 16.3 15.5 25.7 99.5 12.5 11.3 56.4 Level of Service F B B C F B B E Approach LOS E C C D D D Intersection Summary HCM Average Control Delay 39.3 HCM Level of Service D D E D D Intersection Capacity ratio 1.06 1.06 S.0 S.0 E D D E D D D Actuated Cycle Length (s) 8.0 F Analysis Period (min) 15 D D D		0.44	0.12		0.07	0.31		0.40	0.15		0.00	c0.52	_	
Uniform Delay, d1 23.8 16.1 15.3 20.6 18.8 12.0 13.1 20.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.66 0.69 Incremental Delay, d2 96.0 0.2 0.2 5.1 80.6 0.5 2.6 42.5 Delay (s) 119.8 16.3 15.5 25.7 99.5 12.5 11.3 56.4 Level of Service F B B C F B B E Approach Delay (s) 60.0 24.5 24.6 49.0 Approach LOS E C C D Intersection Summary HCM Average Control Delay 39.3 HCM Level of Service D HCM Volume to Capacity ratio 1.06			0.00			0.77			0.00			4.00		
Progression Factor 1.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>														
Incremental Delay, d2 96.0 0.2 0.2 5.1 80.6 0.5 2.6 42.5 Delay (s) 119.8 16.3 15.5 25.7 99.5 12.5 11.3 56.4 Level of Service F B B C F B B E Approach Delay (s) 60.0 24.5 24.6 49.0 Approach LOS E C C D Intersection Summary HCM Average Control Delay 39.3 HCM Level of Service D HCM Volume to Capacity ratio 1.06 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 97.7% ICU Level of Service F Analysis Period (min) 15 15 15 15														
Delay (s) 119.8 16.3 15.5 25.7 99.5 12.5 11.3 56.4 Level of Service F B B C F B B E Approach Delay (s) 60.0 24.5 24.6 49.0 Approach LOS E C C D Intersection Summary HCM Average Control Delay 39.3 HCM Level of Service D HCM Average Control Delay 39.3 HCM Level of Service D Intersection Capacity ratio 1.06 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 97.7% ICU Level of Service F Analysis Period (min) 15 15 15 15 15 15														
Level of Service F B B C F B B E Approach Delay (s) 60.0 24.5 24.6 49.0 Approach LOS E C C D Intersection Summary HCM Average Control Delay 39.3 HCM Level of Service D HCM Volume to Capacity ratio 1.06 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 97.7% ICU Level of Service F Analysis Period (min) 15 15 100 100														
Approach Delay (s) 60.0 24.5 24.6 49.0 Approach LOS E C C D Intersection Summary HCM Average Control Delay 39.3 HCM Level of Service D HCM Volume to Capacity ratio 1.06														
Approach LOS E C C D Intersection Summary Intersection Summary Intersection Service D HCM Average Control Delay 39.3 HCM Level of Service D HCM Volume to Capacity ratio 1.06 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 97.7% ICU Level of Service F Analysis Period (min) 15		- r			В			r			В			
Intersection Summary Intersection Summary Intersection Summary HCM Average Control Delay 39.3 HCM Level of Service D HCM Volume to Capacity ratio 1.06 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 97.7% ICU Level of Service F Analysis Period (min) 15														
HCM Average Control Delay 39.3 HCM Level of Service D HCM Volume to Capacity ratio 1.06 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 97.7% ICU Level of Service F Analysis Period (min) 15	Approach LOS		E			C			C			U		
HCM Volume to Capacity ratio 1.06 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 97.7% ICU Level of Service F Analysis Period (min) 15	Intersection Summary													
Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 97.7% ICU Level of Service F Analysis Period (min) 15 15 16	HCM Average Control D	Delay		39.3	H	ICM Le	vel of S	ervice		D				
Intersection Capacity Utilization 97.7% ICU Level of Service F Analysis Period (min) 15 5 5				1.06										
Analysis Period (min) 15	Actuated Cycle Length ((s)		80.0	S	Sum of I	ost time	e (s)		8.0				
		ilization			10	CU Lev	el of Se	rvice		F				
a Critical Long Crown				15										

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Barrio Logan CPU 17: Harbor Dr & Ces	sar E.	Chave	z Pkw	y		Horizon Year Alt 1 without Improvements Timing Plan: AM Peak						
	۶	-	\mathbf{r}	4	+	•	•	t	1	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Lane Configurations	7	ቀኩ		74	41+		H.	To			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.0
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.9
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.0
Frt	1.00	0.99		1.00	0.99		1.00	0.90			1.00	0.8
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.0
Satd. Flow (prot)	1641	3224		1421	3234		1364	1218			1600	137
Flt Permitted	0.95	1.00		0.95	1.00		0.57	1.00			0.85	1.0
Satd. Flow (perm)	1641	3224		1421	3234		825	1218			1397	13
Volume (vph)	118	398	40	80	1047	95	10	14	27	72	83	4(
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	128	433	43	87	1138	103	11	15	29	78	90	43
RTOR Reduction (vph)	0	7	0	0	6	0	0	23	0	0	0	7
Lane Group Flow (vph)	128	469	0	87	1235	0	11	21	0	0	168	36
Confl. Peds. (#/hr)			11			6	4		1	1		
Confl. Bikes (#/hr)			5			11			2			
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16
Turn Type	Prot			Prot			Perm			Perm		Per
Protected Phases		14 2 6			1826			12			1 5 16	
Permitted Phases	Ű				.020		12			1516	1010	15
Actuated Green, G (s)	6.3	33.6		5.3	32.6		21.1	21.1			33.5	33
Effective Green, g (s)	6.3	33.6		5.3	32.6		21.1	21.1			33.5	33
Actuated g/C Ratio	0.07	0.35		0.05	0.34		0.22	0.22			0.35	0.
Clearance Time (s)	4.0			4.0			4.0	4.0				
Vehicle Extension (s)	3.0			3.0			3.0	3.0				
Lane Grp Cap (vph)	107	1124		78	1094		181	267			485	4
v/s Ratio Prot	c0.08	0.15		0.06	c0.38		101	0.02			400	-
v/s Ratio Perm	00.00	0.10		0.00	00.00		0.01	0.02			0.12	c0.
v/c Ratio	1.20	0.42		1.12	1.13		0.06	0.08			0.35	0.
Uniform Delay, d1	45.1	23.9		45.6	31.9		29.8	29.9			23.3	27
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.02	1.
Incremental Delay, d2	149.1	0.3		136.7	70.0		0.1	0.1			0.4	7
Delay (s)	194.1	24.2		182.2	101.9		29.9	30.1			24.3	37
Level of Service	F	C		F	F		20.0 C	C			24.0 C	57
Approach Delay (s)		60.2			107.1		Ŭ	30.0			34.1	
Approach LOS		E			F			00.0 C			C	
		-						U			U	
Intersection Summary			77.5									
HCM Average Control E HCM Volume to Capaci			77.5 0.97	ŀ	ICM Lev	vel of S	ervice		E			
			96.4		Sum of I	oet time	(6)		24.0			
Actuated Cycle Length (96.4 71.6%						24.0 C			
Intersection Capacity Ut Analysis Period (min)	inzation	1	11.6%	1	CU Leve	ei 01 5e	vice		C			
C Critical Lane Group			15									

c Critical Lane Group

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	Te.		14	T.				٣			
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	497	182	2	0	127	84	0	0	4	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	540	198	2	0	138	91	0	0	4	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		667										
oX, platoon unblocked												
C, conflicting volume	229			200			1417	1509	199	1466	1464	184
C1, stage 1 conf vol												
C2, stage 2 conf vol												
Cu, unblocked vol	229			200			1417	1509	199	1466	1464	184
C, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
C, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	60			100			100	100	99	100	100	100
cM capacity (veh/h)	1339			1372			79	72	842	72	77	859
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1							
Volume Total	540	200	0	229	4							
Volume Left	540	0	0	0	0							
Volume Right	0	2	0	91	4							
SH	1339	1700	1700	1700	842							
Volume to Capacity	0.40	0.12	0.00	0.13	0.01							
Queue Length 95th (ft)	50	0.12	0.00	0.10	0.01							
Control Delay (s)	9.5	0.0	0.0	0.0	9.3							
Lane LOS	0.0 A	0.0	0.0	0.0	0.0 A							
Approach Delay (s)	6.9		0.0		9.3							
Approach LOS	0.5		0.0		A							
Intersection Summary												
Average Delay			5.3									
Intersection Capacity Ut	ilization		46.0%	10	2111.014	el of Ser	vice		А			
Analysis Period (min)	mzauon		40.0 %	I.	JO Leve		VICE		~			

19: National Ave & S			_				
	٦	→	+	*	1	-	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		Ŷ	4		7	۲	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	0	128	276	0	27	280	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	139	300	0	29	304	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				Т	WLTL		
Median storage veh)					1		
Upstream signal (ft)		1100	875				
oX, platoon unblocked							
C, conflicting volume	300				439	300	
C1, stage 1 conf vol					300		
C2, stage 2 conf vol					139		
Cu, unblocked vol	300				439	300	
C, single (s)	4.1				6.4	6.2	
C, 2 stage (s)					5.4		
F (s)	2.2				3.5	3.3	
00 queue free %	100				95	59	
cM capacity (veh/h)	1261				628	740	
Direction. Lane #	EB 1	WB 1	SB 1	SB 2			
Volume Total	139	300	29	304			
Volume Left	0	0	29	0			
Volume Right	0	0	0	304			
SH	1700	1700	628	740			
Volume to Capacity	0.08	0.18	0.05	0.41			
Queue Length 95th (ft)	0.00	0.10	4	51			
Control Delay (s)	0.0	0.0	11.0	13.2			
Lane LOS	0.0	0.0	B	13.2 B			
Approach Delay (s)	0.0	0.0	13.0	5			
Approach LOS	0.0	0.0	B				
ntersection Summary							
Average Delay			5.6				
Intersection Capacity Uti	ilization		38.5%	10		el of Service	e A

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Mayamant	EBL	EBT	EBR		WBT	WBR	NBL	NBT	NBR	SBL	SBT	CDE
Movement Lane Configurations			EBR	WBL		WBR	INBL		NBR	SBL		SBR
	7	P		14	10			40			40	
Sign Control Grade		Free			Free			Stop			Stop	
	17	0%	00	07	0%	00	00	0%	0.4	0	0%	0.0
Volume (veh/h)		115	22	37	226	26	28	49	24	9	18	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	125	24	40	246	28	30	53	26	10	20	- 33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1314			661							
pX, platoon unblocked												
vC, conflicting volume	274			149			542	528	137	555	526	260
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	274			149			542	528	137	555	526	260
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			92	88	97	97	96	96
cM capacity (veh/h)	1289			1433			404	436	912	377	438	779
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	18	149	40	274	110	62						
Volume Left	18	0	40	0	30	10						
Volume Right	0	24	40	28	26	33						
cSH	1289	1700	1433	1700	486	551						
	0.01	0.09	0.03	0.16	0.23	0.11						
Volume to Capacity Queue Length 95th (ft)	0.01	0.09	0.03	0.16	0.23	9						
	7.8	0.0	7.6	0.0	14.6	12.4						
Control Delay (s) Lane LOS	7.8 A	0.0	7.6 A	0.0	14.6 B	12.4 B						
	0.9		1.0		В 14.6	В 12.4						
Approach Delay (s) Approach LOS	0.9		1.0		14.6 B	12.4 B						
••	_		_	_	5	5	_	_	_	_	_	
Intersection Summary			4.6									
Average Delay			4.3		0111							
Intersection Capacity Ut Analysis Period (min)	ilization		36.2% 15	10	JU Lev	el of Ser	vice		A			

Barrio Logan CPU 21: Newton Ave & E	vans	St		Horizon Year Alt 1 without Improvements Timing Plan: AM Peak								
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		đ,			4			4			4	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	23	87	22	16	63	30	27	58	31	7	30	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	95	24	17	68	33	29	63	34	8	33	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	101			118			333	292	107	341	288	85
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	101			118			333	292	107	341	288	85
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			95	90	96	99	95	96
cM capacity (veh/h)	1491			1470			558	601	948	532	604	974
. , , ,		14/5 4		0.0.4								
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	143	118	126	80								
Volume Left	25	17	29	8								
Volume Right	24	33	34	40								
cSH	1491	1470	653	734								
Volume to Capacity	0.02	0.01	0.19	0.11								
Queue Length 95th (ft)	1	1	18	9								
Control Delay (s)	1.4	1.2	11.8	10.5								
Lane LOS	A	А	В	В								
Approach Delay (s)	1.4	1.2	11.8	10.5								
Approach LOS			В	В								
Intersection Summary												
Average Delay			5.7									
Intersection Capacity Ut	ilizatior	1	29.2%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU	Horizon Year Alt 1 without Improvements
22: Main St & Evans St	Timing Plan: AM Peak

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Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		4	tə		¥	-	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	33	153	350	65	56	45	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	36	166	380	71	61	49	
Pedestrians			000		0.		
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage veh)							
Upstream signal (ft)		1318					
pX, platoon unblocked		1010					
vC, conflicting volume	451				654	416	
vC1, stage 1 conf vol					004	10	
vC2, stage 2 conf vol							
vCu, unblocked vol	451				654	416	
tC, single (s)	4.1				6.4	6.2	
tC, 2 stage (s)					0.1	0.2	
tF (s)	2.2				3.5	3.3	
p0 queue free %	97				85	92	
cM capacity (veh/h)	1109				418	637	
,					110	501	
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	202	451	110				
Volume Left	36	0	61				
Volume Right	0	71	49				
cSH	1109	1700	493				
Volume to Capacity	0.03	0.27	0.22				
Queue Length 95th (ft)	3	0	21				
Control Delay (s)	1.7	0.0	14.4				
Lane LOS	А		В				
Approach Delay (s)	1.7	0.0	14.4				
Approach LOS			В				
Intersection Summary							
Average Delay			2.5				
Intersection Capacity Ut	ilizatior	1	48.1%	1	CU Leve	el of Service	А
Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	ţ,		ž	1×			4.			*	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	110	224	163	91	79	56	219	332	147	62	218	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	243	177	99	86	61	238	361	160	67	237	15
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	120	421	99	147	759	320						
Volume Left (vph)	120	0	99	0	238	67						
Volume Right (vph)	0	177	0	61	160	15						
Hadj (s)	0.53	-0.26	0.53	-0.26	-0.03	0.05						
Departure Headway (s)	8.7	7.9	9.5	8.7	7.6	8.1						
Degree Utilization, x	0.29	0.92	0.26	0.35	1.61	0.72						
Capacity (veh/h)	407	445	363	395	474	431						
Control Delay (s)	14.0	52.4	14.6	15.2	304.1	29.3						
Approach Delay (s)	43.9		14.9		304.1	29.3						
Approach LOS	E		В		F	D						
Intersection Summary												
Delay			143.5									
HCM Level of Service			F									
Intersection Capacity Uti	ilization	l.	94.4%	l. I	CU Leve	el of Ser	vice		F			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	<u>1</u> 4		1	1			et.		002	4.	00.1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			1.00			0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.93			0.98			0.94	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1749	1790		1765	1695			1819			1726	
Flt Permitted	0.62	1.00		0.71	1.00			0.98			0.93	
Satd. Flow (perm)	1141	1790		1322	1695			1788			1616	
Volume (vph)	75	50	15	48	104	100	7	95	16	59	109	118
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	54	16	52	113	109	8	103	17	64	118	128
RTOR Reduction (vph)	0	12	0	0	64	0	0	7	0	0	32	0
Lane Group Flow (vph)	82	58	0	52	158	0	0	121	0	0	278	0
Confl. Peds. (#/hr)	17		3	3		17	13		14	14		13
Confl. Bikes (#/hr)						1			1			
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.6	9.6		9.6	9.6			19.0			19.0	
Effective Green, g (s)	9.6	9.6		9.6	9.6			19.0			19.0	
Actuated g/C Ratio	0.26	0.26		0.26	0.26			0.52			0.52	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	299	470		347	445			928			839	
v/s Ratio Prot		0.03			c0.09							
v/s Ratio Perm	0.07			0.04				0.07			c0.17	
v/c Ratio	0.27	0.12		0.15	0.35			0.13			0.33	
Uniform Delay, d1	10.7	10.3		10.4	11.0			4.5			5.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.1		0.2	0.5			0.1			0.2	
Delay (s)	11.2	10.4		10.6	11.5			4.6			5.3	
Level of Service	В	В		В	В			А			А	
Approach Delay (s)		10.9			11.3			4.6			5.3	
Approach LOS		В			В			А			А	
Intersection Summary												
HCM Average Control E	Delay		8.1	H	ICM Le	vel of S	ervice		А			
HCM Volume to Capaci			0.34									
Actuated Cycle Length ((s)		36.6	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		51.8%	10	CU Lev	el of Sei	rvice		A			
	ilization		51.8% 15	1	CU Lev	el of Sei	rvice		A			

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Barrio Logan CPU 25: Newton Ave & S	ampso	on St				Horiz	zon Ye	ear Alt	1 with		proven lan: AM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			44			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	21	95	16	15	81	35	7	40	31	18	99	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	103	17	16	88	38	8	43	34	20	108	40
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	143	142	85	167								
Volume Left (vph)	23	16	8	20								
Volume Right (vph)	17	38	34	40								
Hadj (s)	-0.01	-0.10	-0.19	-0.09								
Departure Headway (s)	4.7	4.6	4.6	4.6								
Degree Utilization, x	0.19	0.18	0.11	0.21								
Capacity (veh/h)	717	733	721	729								
Control Delay (s)	8.7	8.6	8.2	8.9								
Approach Delay (s)	8.7	8.6	8.2	8.9								
Approach LOS	Α	A	А	A								
Intersection Summary												
Delay			8.7									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	ı	30.3%	- 10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU 26: Main St & Samp	son Si	t				Hori	zon Ye	ear Alt	1 with T	out Im ïming F			Barrio Logan CPU 27: Harbor Dr & Sa
·	≯	-	\mathbf{r}	4	+	×	1	1	1	1	ţ	~	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Movement
Lane Configurations		a dia			4			et.			1.		Lane Configurations
Sign Control		Stop			Stop			Stop			Stop		Ideal Flow (vphpl)
Volume (vph)	70	62	51	53	218	16	50	31	35	10	59	172	Total Lost time (s)
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	Lane Util. Factor
Hourly flow rate (vph)	76	67	55	58	237	17	54	34	38	11	64	187	Frpb, ped/bikes
Dimention Lane #	EB 1	WB 1	NB 1	SB 1									Flpb, ped/bikes
Direction, Lane #													Frt
Volume Total (vph)	199	312	126	262									Flt Protected
Volume Left (vph)	76	58	54	11									Satd. Flow (prot)
/olume Right (vph)	55	17	38	187									Flt Permitted
Hadj (s)	-0.06	0.04	-0.06	-0.39									Satd. Flow (perm)
Departure Headway (s)	5.4	5.3	5.7	5.1									Volume (vph)
Degree Utilization, x	0.30	0.46	0.20	0.37									Peak-hour factor, PHF
Capacity (veh/h)	605	633	551	640									Adj. Flow (vph)
Control Delay (s)	10.7	12.8	10.1	11.2									RTOR Reduction (vph)
Approach Delay (s)	10.7	12.8	10.1	11.2									Lane Group Flow (vph)
Approach LOS	В	В	В	В									Confl. Peds. (#/hr)
Intersection Summary													Confl. Bikes (#/hr)
Delay			11.5										Heavy Vehicles (%)
HCM Level of Service			В										Turn Type
Intersection Capacity Ut	ilizatior	1	53.8%	10	CU Lev	el of Ser	vice		А				Protected Phases
Analysis Period (min)			15										Permitted Phases
													Actuated Green, G (s)

27: Harbor Dr & Sai	npson	ગ								inning i	Plan: AN	11 Car
	٠	-	\mathbf{r}	•	-	•	1	†	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	×	仲弘		ji.	1			el.			A.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.95			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3447		1770	3511			1751			1771	
Flt Permitted	0.95	1.00		0.95	1.00			0.94			0.85	
Satd. Flow (perm)	1770	3447		1770	3511			1658			1538	
Volume (vph)	10	716	28	75	1284	44	14	61	38	64	75	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	778	30	82	1396	48	15	66	41	70	82	35
RTOR Reduction (vph)	0	2	0	0	2	0	0	16	0	0	7	C
Lane Group Flow (vph)	11	806	0	82	1442	0	0	106	0	0	180	(
Confl. Peds. (#/hr)			15			29	7		4	4		7
Confl. Bikes (#/hr)			2			5			6			14
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	3	1426		13	1826			12			16 1 5	
Permitted Phases							12			16 1 5		
Actuated Green, G (s)	1.1	35.3		5.9	40.1			11.0			23.6	
Effective Green, g (s)	1.1	35.3		5.9	40.1			11.0			23.6	
Actuated g/C Ratio	0.01	0.40		0.07	0.45			0.12			0.27	
Clearance Time (s)	4.0			4.0				4.0				
Vehicle Extension (s)	3.0			3.0				3.0				
Lane Grp Cap (vph)	22	1370		118	1585			205			409	
v/s Ratio Prot	0.01	0.23		c0.05	c0.41			200				
v/s Ratio Perm	0.01	0.20		00.00				c0.06			c0.12	
v/c Ratio	0.50	0.59		0.69	0.91			0.52			0.44	
Uniform Delay, d1	43.6	21.0		40.6	22.7			36.4			27.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.03	
Incremental Delay, d2	16.8	0.7		16.3	8.2			2.2			0.8	
Delay (s)	60.3	21.7		56.8	30.8			38.6			28.7	
Level of Service	E	С		E	C			D			C	
Approach Delay (s)	_	22.2		_	32.2			38.6			28.7	
Approach LOS		С			С			D			С	
Intersection Summary												
HCM Average Control E	Delay		29.2	H	ICM Lev	vel of Se	ervice		С			
	tv ratio		0.71									
HCM Volume to Capaci			88.8	Ş	Sum of I	ost time	e (s)		20.0			
HCM Volume to Capaci Actuated Cycle Length	(s)	1	88.8		Sum of I							
HCM Volume to Capaci	(s)	1			Sum of le CU Leve				20.0 C			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ň	ţ,			4			de.			1.5.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	21	79	36	27	163	3	48	48	12	4	41	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	86	39	29	177	3	52	52	13	4	45	39
Pedestrians		7			11			3			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		641										
pX, platoon unblocked												
vC, conflicting volume	181			128			460	394	119	420	412	18
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	181			128			460	394	119	420	412	187
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			88	90	99	99	91	95
cM capacity (veh/h)	1393			1454			438	521	921	475	509	850
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	23	125	210	117	88							
Volume Left	23	0	29	52	4							
Volume Right	0	39	3	13	39							
cSH	1393	1700	1454	503	617							
Volume to Capacity	0.02	0.07	0.02	0.23	0.14							
Queue Length 95th (ft)	1	0	2	22	12							
Control Delay (s)	7.6	0.0	1.2	14.3	11.8							
Lane LOS	Α		A	В	В							
Approach Delay (s)	1.2		1.2	14.3	11.8							
Approach LOS				В	В							
Intersection Summary												
Average Delay			5.6									
Intersection Capacity Ut	ilization	1	36.5%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Horizon Year Alt 1 without Improvements

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Ţ.)r	1×			de.			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	28	66	36	36	223	48	27	47	15	51	38	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	72	39	39	242	52	29	51	16	55	41	16
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	30	111	39	295	97	113						
Volume Left (vph)	30	0	39	0	29	55						
Volume Right (vph)	0	39	0	52	16	16						
Hadj (s)	0.53	-0.21	0.53	-0.09	-0.01	0.05						
Departure Headway (s)	6.0	5.2	5.8	5.1	5.2	5.2						
Degree Utilization, x	0.05	0.16	0.06	0.42	0.14	0.16						
Capacity (veh/h)	566	652	597	676	628	625						
Control Delay (s)	8.1	8.0	8.0	10.6	9.1	9.3						
Approach Delay (s)	8.0		10.3		9.1	9.3						
Approach LOS	А		В		Α	А						
Intersection Summary												
Delay			9.5									
HCM Level of Service			А									
Intersection Capacity Uti	lization		38.4%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU

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Barrio Logan CPU 30: National Ave & I-5 SB Off-ramp Horizon Year Alt 1 without Improvements Timing Plan: AM Peak

	-	\mathbf{i}	4	+	1	1		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	Þ			41	7	۴		
Sign Control	Free			Free	Stop	·		
Grade	0%			0%	0%			
Volume (veh/h)	146	18	42	269	72	149		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	159	20	46	292	78	162		
Pedestrians	1				8			
Lane Width (ft)	12.0				12.0			
Walking Speed (ft/s)	4.0				4.0			
Percent Blockage	0				1			
Right turn flare (veh)								
Median type					None			
Median storage veh)								
Upstream signal (ft)				670				
pX, platoon unblocked								
vC, conflicting volume			186		415	176		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol			186		415	176		
tC, single (s)			4.1		6.8	6.9		
tC, 2 stage (s)								
tF (s)			2.2		3.5	3.3		
p0 queue free %			97		86	81		
cM capacity (veh/h)			1376		543	831		
,								
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2			
Volume Total	178	143	195	78	162			
Volume Left	0	46	0	78	0			
Volume Right	20	0	0	0	162			
cSH	1700	1376	1700	543	831			
Volume to Capacity	0.10	0.03	0.11	0.14	0.19			
Queue Length 95th (ft)	0	3	0	13	18			
Control Delay (s)	0.0	2.6	0.0	12.7	10.4			
Lane LOS		A		В	В			
Approach Delay (s)	0.0	1.1		11.2				
Approach LOS				В				
ntersection Summary								
Average Delay			4.0					
Intersection Capacity Uti	ilizatior	ı	32.6%	10	CU Leve	el of Servic	•	A
Analysis Period (min)			15					

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$		γí	ŧ.	7		4	p*		4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	50	17	143	161	26	28	33	91	16	22	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	54	18	155	175	28	30	36	99	17	24	14
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1					
Volume Total (vph)	84	155	175	28	66	99	55					
Volume Left (vph)	11	155	0	0	30	0	17					
Volume Right (vph)	18	0	0	28	0	99	14					
Hadj (s)	-0.07	0.94	0.03	-0.67	0.13	0.05	-0.06					
Departure Headway (s)	4.6	5.8	4.9	3.2	5.1	3.2	4.9					
Degree Utilization, x	0.11	0.25	0.24	0.03	0.09	0.09	0.08					
Capacity (veh/h)	747	599	712	1121	659	1121	678					
Control Delay (s)	8.2	9.6	8.3	5.1	8.6	6.5	8.3					
Approach Delay (s)	8.2	8.6			7.4		8.3					
Approach LOS	Α	A			Α		А					
Intersection Summary												
Delay			8.2									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	ı	31.5%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	仲孙			412						1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0						4.0	
Lane Util. Factor	1.00	0.95			0.95						1.00	
Frpb, ped/bikes	1.00	1.00			1.00						0.98	
Flpb, ped/bikes	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			1.00						0.89	
Flt Protected	0.95	1.00			1.00						1.00	
Satd. Flow (prot)	1543	3539			3533						1487	
Flt Permitted	0.95	1.00			1.00						1.00	
Satd. Flow (perm)	1543	3539			3533						1487	
Volume (vph)	124	454	0	0	1422	17	0	0	0	12	25	164
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	493	0	0	1546	18	0	0	0	13	27	178
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	114	0
Lane Group Flow (vph)	135	493	0	0	1563	0	0	0	0	0	104	0
Confl. Peds. (#/hr)			8	8					2	2		
Confl. Bikes (#/hr)									5			11
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot									Perm		
Protected Phases	13	1826			14 2 6						11 1 5	
Permitted Phases										11 1 5		
Actuated Green, G (s)	9.2	50.3			33.1						20.0	
Effective Green, g (s)	9.2	50.3			33.1						20.0	
Actuated g/C Ratio	0.11	0.58			0.38						0.23	
Clearance Time (s)	4.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	164	2063			1355						345	
v/s Ratio Prot	c0.09	0.14			c0.44							
v/s Ratio Perm											0.07	
v/c Ratio	0.82	0.24			1.15						0.30	
Uniform Delay, d1	37.8	8.7			26.6						27.4	
Progression Factor	1.00	1.00			1.00						1.13	
Incremental Delay, d2	27.1	0.1			78.0						0.5	
Delay (s)	64.9	8.8			104.6						31.3	
Level of Service	E	А			F						С	
Approach Delay (s)		20.8			104.6			0.0			31.3	
Approach LOS		С			F			А			С	
Intersection Summary			70.0									
HCM Average Control D			76.2	H	ICM Le	vel of S	ervice		E			
HCM Volume to Capacit			0.83				()		010			
Actuated Cycle Length (86.3			ost time	()		24.0			
Intersection Capacity Ut	Ilization	า	75.5%	10	CU Lev	el of Sei	vice		D			
Analysis Period (min)			15									

Horizon Year Alt 1 without Improvements

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c Critical Lane Group

Barrio Logan CPU

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	44	101	100L	1	VUDIX	INDL	1001	<u> </u>	JDL		001
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	1000	1000	4.0	4.0	1000	4.0	1000
Lane Util, Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	0.98			1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1299	1817			1754	1509		1643	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.75	1.00		0.88	
Satd. Flow (perm)	1770	3539	1583	1299	1817			1340	1509		1466	
Volume (vph)	106	258	18	192	628	123	33	98	86	115	205	307
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	280	20	209	683	134	36	107	93	125	223	334
RTOR Reduction (vph)	0	0	14	0	5	0	0	0	52	0	23	0
Lane Group Flow (vph)	115	280	6	209	812	0	0	143	41	0	659	0
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	0.0	44.5	4	07.5	00.0		2	00.0	2 66.0	6	00.0	
Actuated Green, G (s)	9.0	44.5	44.5	27.5	63.0			66.0			66.0	
Effective Green, g (s)	9.0 0.06	44.5 0.30	44.5 0.30	27.5 0.18	63.0 0.42			66.0 0.44	66.0 0.44		66.0 0.44	
Actuated g/C Ratio	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	106	1050	470	238	763			590	664		645	
v/s Ratio Prot	c0.06	0.08	470	0.16	c0.45			090	004		045	
/s Ratio Perm	0.00	0.08	0.00	0.10	0.45			0.11	0.03		c0.45	
/c Ratio	1.08	0.27	0.00	0.88	1.06			0.24	0.06		1.02	
Uniform Delay, d1	70.5	40.3	37.2	59.6	43.5			26.3	24.2		42.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
ncremental Delay, d2	112.1	0.1	0.0	28.4	51.2			0.2	0.0		41.1	
Delay (s)	182.6	40.4	37.3	88.0	94.7			26.5	24.2		83.1	
Level of Service	F	D	D	F	F			С	С		F	
Approach Delay (s)		79.7			93.3			25.6			83.1	
Approach LOS		E			F			С			F	
Intersection Summary												
HCM Average Control E	Delay		81.2	H	ICM Le	vel of S	ervice		F			
HCM Volume to Capaci	ty ratio		1.05									
Actuated Cycle Length			150.0	S	Sum of I	ost time	e (s)		12.0			
Intersection Capacity Ut	tilization		99.0%	10	CU Lev	el of Se	rvice		F			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	Ţ.		76	Þ		μ	44	٣	7	41-	
ldeal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.91		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1687	1687		1687	1608		1770	3471	1583	1770	3374	
Flt Permitted	0.58	1.00		0.25	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1038	1687		440	1608		1770	3471	1583	1770	3374	
Volume (vph)	230	280	140	45	70	120	90	700	90	160	860	31
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	250	304	152	49	76	130	98	761	98	174	935	33
RTOR Reduction (vph)	0	31	0	0	88	0	0	0	57	0	44	
Lane Group Flow (vph)	250	425	0	49	118	0	98	761	41	174	1228	
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)	20.3	20.3		20.3	20.3		4.6	25.9	25.9	4.1	25.4	
Effective Green, g (s)	20.3	20.3		20.3	20.3		4.6	25.9	25.9	4.1	25.4	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.07	0.42	0.42	0.07	0.41	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	338	550		143	524		131	1443	658	116	1376	
v/s Ratio Prot		c0.25			0.07		0.06	0.22		c0.10	c0.36	
v/s Ratio Perm	0.24			0.11					0.03			
v/c Ratio	0.74	0.77		0.34	0.23		0.75	0.53	0.06	1.50	0.89	
Uniform Delay, d1	18.7	18.9		15.9	15.3		28.3	13.6	10.9	29.1	17.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.2	6.7		1.4	0.2		20.6	1.4	0.2	264.6	9.1	
Delay (s)	26.9	25.6		17.4	15.5		48.9	15.0	11.1	293.7	26.3	
Level of Service	С	С		В	В		D	В	В	F	С	
Approach Delay (s)		26.0			15.9			18.1			58.5	
Approach LOS		С			В			В			E	
Intersection Summary												
HCM Average Control D	elay		36.9	H	ICM Le	vel of Se	ervice		D			
HCM Volume to Capacit			0.88									
Actuated Cycle Length (62.3	S	Sum of I	ost time	(s)		12.0			
Intersection Capacity Ut	ilization	1	78.6%	10	CU Lev	el of Sei	vice		D			

35: Main St & 28th S	St								I	iming F	Plan: AN	1 Peak
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ň	朴弘)r	† I>		μ	作る		7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1539	3210		1760	3377		1736	3272		1736	3105	
Flt Permitted	0.28	1.00		0.50	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	459	3210		925	3377		1736	3272		1736	3105	
Volume (vph)	190	300	50	90	490	180	45	220	70	180	750	250
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	326	54	98	533	196	49	239	76	196	815	272
RTOR Reduction (vph)	0	14	0	0	39	0	0	37	0	0	38	0
Lane Group Flow (vph)	207	366	0	98	690	0	49	278	0	196	1049	0
Confl. Peds. (#/hr)	10		12	12		10			72			27
Confl. Bikes (#/hr)			2			4			6			1
Heavy Vehicles (%)	17%	11%	2%	2%	2%	2%	4%	4%	4%	4%	4%	31%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8	Ű		Ū	-			Ű	
Actuated Green, G (s)	35.4	35.4		35.4	35.4		4.0	22.6		12.0	30.6	
Effective Green, q (s)	35.4	35.4		35.4	35.4		4.0	22.6		12.0	30.6	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.05	0.28		0.15	0.37	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	198	1386		399	1458		85	902		254	1159	
v/s Ratio Prot	100	0.11		000	0.20		0.03	0.08		c0.11	c0.34	
v/s Ratio Perm	c0.45	0.11		0.11	0.20		0.00	0.00		00.11	00.01	
v/c Ratio	1.05	0.26		0.25	0.47		0.58	0.31		0.77	0.91	
Uniform Delay, d1	23.3	14.9		14.8	16.6		38.2	23.5		33.7	24.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	76.4	0.1		0.3	0.2		9.1	0.2		13.5	10.1	
Delay (s)	99.7	15.0		15.1	16.9		47.3	23.7		47.2	34.4	
Level of Service	F	B		В	B		D	C		D	C	
Approach Delay (s)	•	44.9			16.7		-	26.9		2	36.4	
Approach LOS		D			В			С			D	
Intersection Summary												
HCM Average Control E	Delay		31.6	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.93									
Actuated Cycle Length (82.0	S	um of I	ost time	(s)		8.0			
Intersection Capacity Ut		1	77.9%			el of Sei			D			
Analysis Period (min)			15						_			
c Critical Lane Group												

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Barrio Logan CPU 36: Harbor Dr & 28tl	h St					Hori	zon Ye	ear Alt			prover Plan: AN	
	≯	+	*	4	ł	×	<	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ሳቀ	74	34	44	7		4		7	4	*
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.87	1.00	1.00	0.93		0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	0.96	1.00
Satd. Flow (prot)	1703	3406	1323	1719	3438	1436		1763		1649	1659	1524
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	0.96	1.00
Satd. Flow (perm)	1703	3406	1323	1719	3438	1436		1763		1649	1659	1524
Volume (vph)	110	560	4	17	822	116	0	6	2	375	15	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	609	4	18	893	126	0	7	2	408	16	27
RTOR Reduction (vph)	0	0	3	0	0	57	0	2	0	0	0	21
Lane Group Flow (vph)	120	609	1	18	893	69	0	7	0	207	217	6
Confl. Peds. (#/hr)			69			80						_
Confl. Bikes (#/hr)						3			6			7
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		ustom	Prot		custom	Split			Split		Perm
Protected Phases												
	- 11	1626		15	1226	13	14	14		1 13 5		
Permitted Phases			16			12	14					1513
Actuated Green, G (s)	8.7	42.1	36.1	2.7	36.1	12 48.5	14	14.0		28.2	28.2	28.2
Actuated Green, G (s) Effective Green, g (s)	8.7 8.7	42.1 42.1	36.1 36.1	2.7 2.7	36.1 36.1	12 48.5 48.5	14	14.0 14.0		28.2 28.2	28.2 28.2	28.2 28.2
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio	8.7 <mark>8.7</mark> 0.07	42.1	36.1 36.1 0.30	2.7 2.7 0.02	36.1	12 48.5 48.5 0.41	14	14.0 14.0 0.12		28.2	28.2	28.2
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s)	8.7 8.7 0.07 4.0	42.1 42.1	36.1 36.1 0.30 4.0	2.7 2.7 0.02 4.0	36.1 36.1	12 48.5 48.5 0.41 4.0	14	14.0 14.0 0.12 4.0		28.2 28.2	28.2 28.2	28.2 28.2
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s)	8.7 8.7 0.07 4.0 3.0	42.1 42.1 0.35	36.1 36.1 0.30 4.0 3.0	2.7 2.7 0.02 4.0 3.0	36.1 36.1 0.30	12 48.5 48.5 0.41 4.0 3.0	14	14.0 14.0 0.12 4.0 3.0		28.2 28.2 0.24	28.2 28.2 0.24	28.2 28.2 0.24
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph)	8.7 8.7 0.07 4.0 3.0 125	42.1 42.1 0.35 1205	36.1 36.1 0.30 4.0	2.7 2.7 0.02 4.0 3.0 39	36.1 36.1 0.30	12 48.5 48.5 0.41 4.0 3.0 585	14	14.0 14.0 0.12 4.0 3.0 207		28.2 28.2 0.24 391	28.2 28.2 0.24 393	28.2 28.2
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot	8.7 8.7 0.07 4.0 3.0	42.1 42.1 0.35	36.1 36.1 0.30 4.0 3.0 401	2.7 2.7 0.02 4.0 3.0	36.1 36.1 0.30	12 48.5 48.5 0.41 4.0 3.0 585 0.02	14	14.0 14.0 0.12 4.0 3.0		28.2 28.2 0.24	28.2 28.2 0.24	28.2 28.2 0.24 361
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Perm	8.7 8.7 0.07 4.0 3.0 125 c0.07	42.1 42.1 0.35 1205 0.18	36.1 36.1 0.30 4.0 3.0 401 0.00	2.7 2.7 0.02 4.0 3.0 39 0.01	36.1 36.1 0.30 1043 c0.26	12 48.5 48.5 0.41 4.0 3.0 585 0.02 0.03	14	14.0 14.0 0.12 4.0 3.0 207 c0.00		28.2 28.2 0.24 391 0.13	28.2 28.2 0.24 393 c0.13	28.2 28.2 0.24 361 0.00
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Perm v/c Ratio	8.7 8.7 0.07 4.0 3.0 125 c0.07	42.1 42.1 0.35 1205 0.18 0.51	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00	2.7 2.7 0.02 4.0 3.0 39 0.01 0.46	36.1 36.1 0.30 1043 c0.26 0.86	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12	14	14.0 14.0 0.12 4.0 3.0 207 c0.00		28.2 28.2 0.24 391 0.13 0.53	28.2 28.2 0.24 393 c0.13 0.55	28.2 28.2 0.24 361 0.00 0.02
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Perm v/c Ratio Uniform Delay, d1	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0	42.1 42.1 0.35 1205 0.18 0.51 30.3	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9	2.7 2.7 0.02 4.0 3.0 0.01 0.46 57.4	36.1 36.1 0.30 1043 c0.26 0.86 39.0	12 48.5 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9	14	14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5		28.2 28.2 0.24 391 0.13 0.53 39.6	28.2 28.2 0.24 393 c0.13 0.55 39.9	28.2 28.2 0.24 361 0.00 0.02 34.8
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Port v/s Ratio Perm v/c Ratio Uniform Delay, d1 Progression Factor	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9 1.00	2.7 2.7 0.02 4.0 3.0 39 0.01 0.46 57.4 1.00	36.1 36.1 0.30 1043 c0.26 0.86 39.0 1.00	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9 1.00	14	14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00		28.2 28.2 0.24 391 0.13 0.53 39.6 0.92	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Perm v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00 67.8	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00 0.3	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9 1.00 0.0	2.7 2.7 0.02 4.0 3.0 39 0.01 0.46 57.4 1.00 8.4	36.1 36.1 0.30 1043 c0.26 0.86 39.0 1.00 7.0	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9 1.00 0.1	14	14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00 0.1		28.2 28.2 0.24 391 0.13 0.53 39.6 0.92 1.3	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93 1.7	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41 0.0
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Prot v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s)	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00 67.8 122.8	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00 0.3 30.6	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9 1.00 0.0 28.9	2.7 2.7 0.02 4.0 3.0 0.01 0.46 57.4 1.00 8.4 65.8	36.1 36.1 0.30 1043 c0.26 0.86 39.0 1.00 7.0 46.0	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9 1.00 0.1 22.0	14	14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00 0.1 46.6		28.2 28.2 0.24 391 0.13 0.53 39.6 0.92 1.3 37.8	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93 1.7 38.6	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41 0.0 48.9
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Prot v/s Ratio Perm v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00 67.8	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00 0.3 30.6 C	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9 1.00 0.0	2.7 2.7 0.02 4.0 3.0 39 0.01 0.46 57.4 1.00 8.4	36.1 36.1 0.30 0.80 39.0 1.00 7.0 46.0 D	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9 1.00 0.1	14	14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00 0.1 46.6 D		28.2 28.2 0.24 391 0.13 0.53 39.6 0.92 1.3	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93 1.7 38.6 D	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41 0.0
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Prot v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s)	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00 67.8 122.8	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00 0.3 30.6 C 45.7	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9 1.00 0.0 28.9	2.7 2.7 0.02 4.0 3.0 0.01 0.46 57.4 1.00 8.4 65.8	36.1 36.1 0.30 1043 c0.26 0.86 39.0 1.00 7.0 46.0 D 43.5	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9 1.00 0.1 22.0	14	14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00 0.1 46.6 D 46.6		28.2 28.2 0.24 391 0.13 0.53 39.6 0.92 1.3 37.8	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93 1.7 38.6 D 38.9	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41 0.0 48.9
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Prot v/s Ratio Perm v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00 67.8 122.8	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00 0.3 30.6 C	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9 1.00 0.0 28.9	2.7 2.7 0.02 4.0 3.0 0.01 0.46 57.4 1.00 8.4 65.8	36.1 36.1 0.30 0.80 39.0 1.00 7.0 46.0 D	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9 1.00 0.1 22.0	14	14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00 0.1 46.6 D		28.2 28.2 0.24 391 0.13 0.53 39.6 0.92 1.3 37.8	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93 1.7 38.6 D	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41 0.0 48.9
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Prot v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s)	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00 67.8 122.8	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00 0.3 30.6 C 45.7	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9 1.00 0.0 28.9	2.7 2.7 0.02 4.0 3.0 0.01 0.46 57.4 1.00 8.4 65.8	36.1 36.1 0.30 1043 c0.26 0.86 39.0 1.00 7.0 46.0 D 43.5	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9 1.00 0.1 22.0	14	14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00 0.1 46.6 D 46.6		28.2 28.2 0.24 391 0.13 0.53 39.6 0.92 1.3 37.8	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93 1.7 38.6 D 38.9	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41 0.0 48.9
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Prot v/s Ratio Perm v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s) Approach LOS	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00 67.8 122.8 F	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00 0.3 30.6 C 45.7	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9 1.00 0.0 28.9	2.7 2.7 0.02 4.0 3.0 39 0.01 0.46 57.4 1.00 8.4 65.8 E	36.1 36.1 0.30 1043 c0.26 0.86 39.0 1.00 7.0 46.0 D 43.5 D	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9 1.00 0.1 22.0		14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00 0.1 46.6 D 46.6	D	28.2 28.2 0.24 391 0.13 0.53 39.6 0.92 1.3 37.8	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93 1.7 38.6 D 38.9	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41 0.0 48.9
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Prot v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s) Approach LOS Intersection Summary	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00 67.8 122.8 F	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00 0.3 30.6 C 45.7	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9 1.00 0.0 28.9 C	2.7 2.7 0.02 4.0 3.0 39 0.01 0.46 57.4 1.00 8.4 65.8 E	36.1 36.1 0.30 1043 c0.26 0.86 39.0 1.00 7.0 46.0 D 43.5 D	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9 1.00 0.1 22.0 C		14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00 0.1 46.6 D 46.6		28.2 28.2 0.24 391 0.13 0.53 39.6 0.92 1.3 37.8	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93 1.7 38.6 D 38.9	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41 0.0 48.9
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Perm v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s) Approach Delay (s) Intersection Summary HCM Average Control D	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00 67.8 122.8 F	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00 0.3 30.6 C 45.7	36.1 36.1 0.30 4.0 3.0 401 0.00 0.00 28.9 1.00 0.0 28.9 C C	2.7 2.7 4.0 3.0 39 0.01 0.46 57.4 1.00 8.4 65.8 E	36.1 36.1 0.30 1043 c0.26 0.86 39.0 1.00 7.0 46.0 D 43.5 D	12 48.5 0.41 4.0 3.0 585 0.02 0.03 0.12 21.9 1.00 0.1 22.0 C	ervice	14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00 0.1 46.6 D 46.6		28.2 28.2 0.24 391 0.13 0.53 39.6 0.92 1.3 37.8	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93 1.7 38.6 D 38.9	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41 0.0 48.9
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Clearance Time (s) Vehicle Extension (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Prot v/s Ratio Prot v/s Ratio Perm v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s) Approach LOS Intersection Summary HCM Average Control E HCM Volume to Capacil	8.7 8.7 0.07 4.0 3.0 125 c0.07 0.96 55.0 1.00 67.8 122.8 F 22.8 F	42.1 42.1 0.35 1205 0.18 0.51 30.3 1.00 0.3 30.6 C 45.7 D	36.1 36.1 0.30 4.0 3.0 401 0.00 28.9 1.00 0.0 28.9 C C 43.3 0.64	2.7 2.7 4.0 3.0 39 0.01 0.46 57.4 1.00 8.4 65.8 E	36.1 36.1 0.30 1043 c0.26 0.86 39.0 1.00 7.0 46.0 D 43.5 D	12 48.5 48.5 0.41 4.0 585 0.02 0.03 0.12 21.9 1.00 0.1 22.0 C	ervice (s)	14.0 14.0 0.12 4.0 3.0 207 c0.00 0.03 46.5 1.00 0.1 46.6 D 46.6	D	28.2 28.2 0.24 391 0.13 0.53 39.6 0.92 1.3 37.8	28.2 28.2 0.24 393 c0.13 0.55 39.9 0.93 1.7 38.6 D 38.9	28.2 28.2 0.24 361 0.00 0.02 34.8 1.41 0.0 48.9

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c Critical Lane Group

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		đ,			4			ele.				
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	234	104	15	18	102	88	5	30	19	0	0	(
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	254	113	16	20	111	96	5	33	21	0	0	(
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		657										
pX, platoon unblocked												
vC, conflicting volume	207			129			828	876	121	865	836	159
vC1, stage 1 conf vol												
vC2, stage 2 conf vol	0.07			400				070	101	0.05		4.5.0
vCu, unblocked vol	207			129			828	876	121	865	836	159
tC, single (s)	4.2			4.2			7.1	6.9	6.2	7.1	6.5	6.2
tC, 2 stage (s)	2.3			2.3			25	4.4	3.3	3.5	4.0	3.3
tF (s)	2.3			2.3			3.5 98	4.4 84	3.3 98	3.5 100	4.0	100
p0 queue free % cM capacity (veh/h)	1335			1426			245	200	930	199	242	887
, , ,				1420			245	200	930	199	242	007
Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	384	226	59									
Volume Left	254	20	5									
Volume Right	16	96	21									
cSH	1335	1426	283									
Volume to Capacity	0.19	0.01	0.21									
Queue Length 95th (ft)	18	1	19									
Control Delay (s) Lane LOS	6.1 A	0.8 A	21.0 C									
Approach Delay (s)	6.1	0.8	21.0									
Approach LOS	0.1	0.0	21.0 C									
Intersection Summary			5.0									
Average Delay Intersection Capacity Ut	ilization		5.6 44.4%	1	CILLOW	el of Ser	Nico		А			
mersection Gabacity Ut	Inzanor		44.470		UU Levi	a ur ser	VICE		A			

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Barrio Logan CPU 38: Main St & 32nd	St					Hori	zon Y	ear Alt			prover Plan: AN	
	۶	-	\mathbf{r}	4	+	×	1	1	1	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	仲弘		96	作品		H	4	P	Ň	T.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.98		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3056		1703	3320		1770	1863	1556	1770	1750	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3056		1703	3320		1770	1863	1556	1770	1750	
Volume (vph)	38	130	218	314	494	79	110	50	26	39	83	42
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adi, Flow (vph)	41	141	237	341	537	86	120	54	28	42	90	46
RTOR Reduction (vph)	0	189	0	0	13	0	0	0	21	0	22	0
Lane Group Flow (vph)	41	189	0	341	610	0	120	54	7	42	114	0
Confl. Peds. (#/hr)			1			6			4			16
Confl. Bikes (#/hr)			2			4			2			5
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				Ű	Ŭ		Ű	_	2		Ŭ	
Actuated Green, G (s)	2.6	13.1		17.0	27.5		6.4	16.3	16.3	2.6	12.5	
Effective Green, g (s)	2.6	13.1		17.0	27.5		6.4	16.3	16.3	2.6	12.5	
Actuated g/C Ratio	0.04	0.20		0.26	0.42		0.10	0.25	0.25	0.04	0.19	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	68	616		445	1405		174	467	390	71	337	
v/s Ratio Prot	0.02	0.06		c0.20	c0.18		c0.07	c0.03	000	0.02	c0.07	
v/s Ratio Perm	0.02	0.00		00.20	00.10		00.01	00.00	0.00	0.02	00.07	
v/c Ratio	0.60	0.31		0.77	0.43		0.69	0.12	0.02	0.59	0.34	
Uniform Delay, d1	30.7	22.1		22.2	13.3		28.3	18.8	18.3	30.7	22.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.2	0.3		7.7	0.2		10.8	0.1	0.0	12.5	0.6	
Delay (s)	44.8	22.4		29.9	13.5		39.2	18.9	18.3	43.2	23.3	
Level of Service	44.0 D	22.4 C		23.5 C	13.5 B		00.2	10.5 B	10.5 B	43.2 D	23.3 C	
Approach Delay (s)	5	24.6		0	19.3		5	30.9	5	5	28.0	
Approach LOS		24.0 C			19.5 B			50.5 C			20.0 C	
Intersection Summary					_							
HCM Average Control E	elav		22.7	F		vel of S	ervice		С			
HCM Volume to Capacit			0.55						0			
Actuated Cycle Length (65.0	c	Sum of I	ost time	(s)		16.0			
Intersection Capacity Ut			60.0%			el of Se	(-)		В			
Analysis Period (min)			15			0.0100	100		J			

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Barrio Logan CPU 39: 32nd St & Waba	ish St					Hori	zon Y	ear Alt		iout Im Fiming F		
	٦	_#	-	\mathbf{r}	4	-	•	۲	1	1	ſ	۲
Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations		ž	To.			4	Ľ.		Υ.	÷	15	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00	1.00	0.88	
Frt		1.00	0.95			1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00			0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1760	1773			1787	1574		1719	1810	2707	
Flt Permitted		0.36	1.00			0.42	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		669	1773			787	1574		1719	1810	2707	
Volume (vph)	65	25	170	80	250	45	120	50	70	215	125	290
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	27	185	87	272	49	130	54	76	234	136	315
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	98	261	0	0	321	184	0	76	234	451	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot		ustom	
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4		4				23	
Actuated Green, G (s)		45.2	45.2			45.2	45.2		11.4	23.3	60.5	
Effective Green, g (s)		45.2	45.2			45.2	45.2		11.4	23.3	60.5	
Actuated g/C Ratio		0.33	0.33			0.33	0.33		0.08	0.17	0.44	
Clearance Time (s)		4.0	4.0			4.0	4.0		4.0	4.0		
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		218	577			256	512		141	303	1178	
v/s Ratio Prot			0.15						0.04	c0.13		
v/s Ratio Perm		0.15				c0.41	0.12				0.17	
v/c Ratio		0.45	0.45			1.25	0.36		0.54	0.77	0.38	
Uniform Delay, d1		37.1	37.1			46.9	35.8		61.3	55.3	26.6	
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		1.5	0.6			142.2	0.4		3.9	11.6	0.2	
Delay (s)		38.5	37.7			189.1	36.3		65.2	66.9	26.8	
Level of Service		D	D			F	D		E	E	С	
Approach Delay (s)			37.9			133.4				43.0		
Approach LOS			D			F				D		
Intersection Summary												
HCM Average Control E	Delay		112.7	H	ICM Le	vel of S	ervice		F			
HCM Volume to Capaci			1.12									
Actuated Cycle Length (139.0	S	Sum of I	ost time	e (s)		16.0			
Intersection Capacity Ut		1	95.8%	10	CU Lev	el of Se	rvice		F			
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group

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Barrio Logan CPU 39: 32nd St & Wabash St Horizon Year Alt 1 without Improvements Timing Plan: AM Peak

	4	1	ţ	1	6	4	~	ŧ٧	
Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2	
Lane Configurations		25	4%			284			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			4.0			
Lane Util. Factor		1.00	0.95			0.97			
Frt		1.00	0.98			0.99			
Flt Protected		0.95	1.00			0.96			
Satd. Flow (prot)		1765	3384			3347			
Flt Permitted		0.95	1.00			0.87			
Satd. Flow (perm)		1765	3384			3030			
Volume (vph)	30	180	445	65	60	775	65	10	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	33	196	484	71	65	842	71	11	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	229	555	0	0	989	0	0	
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%	
Turn Type	Prot	Prot			Perm				
Protected Phases	1	1	6			3			
Permitted Phases					3				
Actuated Green, G (s)		21.3	33.2			33.2			
Effective Green, g (s)		21.3	33.2			33.2			
Actuated g/C Ratio		0.15	0.24			0.24			
Clearance Time (s)		4.0	4.0			4.0			
Vehicle Extension (s)		3.0	3.0			3.0			
Lane Grp Cap (vph)		270	808			724			
v/s Ratio Prot		c0.13	0.16						
v/s Ratio Perm						c0.33			
v/c Ratio		0.85	0.69			1.37			
Uniform Delay, d1		57.3	48.2			52.9			
Progression Factor		1.00	1.00			1.00			
Incremental Delay, d2		21.2	2.4			173.5			
Delay (s)		78.4	50.6			226.4			
Level of Service		E	D			F			
Approach Delay (s)			58.7			226.4			
Approach LOS			E			F			
Intersection Summary									
interection ourninary									1

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ተቀ	¥r,	γ.	44	1	Υ	44	p#	7	44	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1519	1687	3374	1509	1719	3438	1481	1719	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1519	1687	3374	1509	1719	3438	1481	1719	3438	1538
Volume (vph)	140	657	140	300	735	390	30	160	30	130	1040	190
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	714	152	326	799	424	33	174	33	141	1130	207
RTOR Reduction (vph)	0	0	123	0	0	284	0	0	28	0	0	87
Lane Group Flow (vph)	152	714	29	326	799	140	33	174	5	141	1130	120
Confl. Bikes (#/hr)			3						16			
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		custom	Prot		custom	Prot		Perm	Prot		ustom
Protected Phases	3	14 2 6	15	13	1826		15	12		11 1 5	16 1 5	315
Permitted Phases			14			18			12			16
Actuated Green, G (s)	10.3	8.6	6.9	16.5	14.8	10.5	2.6	11.5	11.5	12.7	25.6	31.9
Effective Green, g (s)	10.3	8.6	6.9	16.5	14.8	10.5	2.6	11.5	11.5	12.7	25.6	31.9
Actuated g/C Ratio	0.13	0.11	0.08	0.20	0.18	0.13	0.03	0.14	0.14	0.16	0.31	0.39
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	218	364	129	342	614	195	55	486	209	269	1083	679
v/s Ratio Prot	0.09	c0.21	0.01	c0.19	c0.24	0.00	0.02	0.05	0.00	c0.08	c0.33	0.04
v/s Ratio Perm	0.70	1.00	0.01	0.05	4 00	0.09	0.00	0.00	0.00	0.50	4.04	0.04
v/c Ratio	0.70	1.96	0.23	0.95	1.30	0.72	0.60	0.36	0.02	0.52	1.04	0.18
Uniform Delay, d1	34.0	36.4	34.7	32.0	33.2 1.00	34.0	38.8	31.6	30.1	31.5	27.8 0.89	16.1
Progression Factor Incremental Delay, d2	9.3	442.6	0.9	36.2	147.2	11.9	17.0	0.5	0.0	1.17	39.1	0.1
Delay (s)	43.3	442.0	35.6	68.3	180.5	45.9	55.9	32.0	30.1	38.7	63.7	16.4
Level of Service	43.3 D	4/0.9 F	35.0 D	60.3 E	160.5 F	45.9 D	55.9 E	32.0 C	30.1 C	30.7 D	63.7 E	10.4 E
Approach Delay (s)	D	347.7	D		120.0	U		35.0	C	D	54.7	
Approach LOS		547.7 F			F			D			D	
Intersection Summary												
HCM Average Control D	elay		146.8	H	ICM Le	vel of S	ervice		F			
HCM Volume to Capacit			1.09									
Actuated Cycle Length (81.3	S	Sum of I	ost time	(s)		24.0			
Intersection Capacity Ut		٦ I	80.2%			el of Sei			D			
Analysis Period (min)			15									
c Critical Lane Group												

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Synchro 6 Report Page 41

K:\SND_TPTO\095707000\Synchro\HY Al1 AM no Improvements.sy7 KHA Kimley-Horn and Associates, Inc.

Barrio Logan CPU 41: Main St & I-1						Horizon Year Alt 1 without Improvements Timing Plan: AM Peal
	٨	+	Ļ	×	*	
Movement	EDI	EDT	W/DT		CDI	000

Lane Configurations Ideal Flow (vphpl) 1900 1900 1900 1900 1900 1900 1900 190	Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Total Lost time (s) 4.0 4.0 4.0 4.0 Lane Util. Factor 1.00 0.95 0.95 1.00 1.00 Fipb, ped/bikes 1.00 1.00 1.00 1.00 0.99 Fibb, ped/bikes 1.00 1.00 1.00 0.99 Std. Flow (prot) 1770 3539 3539 1583 1637 Fit Permitted 0.95 1.00 1.00 0.99 Satd. Flow (perm) 1770 3539 3539 1583 1637 Volume (vph) 47 181 497 107 108 309 Peak-hour fator, PHF 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 51 197 540 116 117 336 RTOR Reduction (vph) 0 0 0 79 165 0 100 100 100 100 100 100 100 100 100 100 100 100 117 155 0 116 117 36 116 117 36 116 117 36 116	Lane Configurations	×	ሳቀ	44	ľ	×4			
Lane Util. Factor 1.00 0.95 0.95 1.00 1.00 Frpb, ped/bikes 1.00 1.00 1.00 1.00 0.99 Fibb, ped/bikes 1.00 1.00 1.00 1.00 0.99 Fit Protected 0.95 1.00 1.00 1.00 0.99 Satd. Flow (prot) 1770 3539 3539 1583 1637 Fit Permitted 0.95 1.00 1.00 1.00 0.99 Satd. Flow (perm) 1770 3539 3539 1583 1637 Volume (vph) 47 181 497 107 108 309 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 51 197 540 116 117 336 RTOR Reduction (vph) 0 0 0 79 165 0 Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Bikes (#hr) 2 2 Turn Type Prot Perm Protected Phases 5 2 6 4 Permitted Phases 6 Actuated Green, G (s) 1.6 17.6 12.0 12.0 11.7 Actuated Green, G (s) 1.6 17.6 12.0 12.0 11.7 Actuated Green, G (s) 1.6 17.6 12.0 12.0 11.7 Actuated Green, G (s) 3.0 3.0 3.0 3.0 3.0 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Gro Cap Cap (vph) 76 1670 1139 509 513 v/s Ratio Prot 0.1 Progression Factor 1.00 1.00 1.00 Incremental Delay, d1 17.6 55 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 Incremental Delay, d1 17.6 55 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 Incremental Delay, d1 17.6 55 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 Incremental Delay, d1 17.6 55 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 Incremental Delay, d1 17.6 55 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 Incremental Delay, d1 17.6 55 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 Incremental Delay, d1 17.6 55 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 Incremental Delay, d1 17.6 55 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 Incremental Delay, d1 17.6 55 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 Incremental Delay, d1 17.2 HCM Level of Service B HetM Volume to Capacity ratio 0.53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A Analysis Period (min) 15	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Frpb, ped/bikes 1.00 1.00 1.00 1.00 0.99 Fipb, ped/bikes 1.00 1.00 1.00 1.00 1.00 Fit 0.00 1.00 1.00 0.99 Stat. Flow (prot) 1770 3539 3539 1583 1637 Fit Permitted 0.95 1.00 1.00 1.00 0.99 Stat. Flow (perm) 1770 3539 3539 1583 1637 Volume (vph) 47 181 497 107 108 309 Peak-hour factor, PHF 0.92<	Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			
Fipb, ped/bikes 1.00 1.00 1.00 1.00 Frt 1.00 1.00 0.85 0.90 Fit Protected 0.95 1.00 1.00 0.99 Satd. Flow (prot) 1770 3539 3539 1583 1637 Fit Permitted 0.95 1.00 1.00 0.99 Satd. Flow (perm) 1770 3539 3539 1637 Volume (vph) 47 181 497 107 108 309 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 Confl. Peds. (#/hr) 0 0 0 79 165 0 Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Bikes (#/hr) 2 2 Confl. Bikes (#/hr) 2 100 11.7 Turn Type Prot Perm Permitted Phases 6 4 100 100 100 100 100 100 100 100 100 100 100 100 100 100	Lane Util. Factor	1.00	0.95	0.95	1.00	1.00			
Fr. 1.00 1.00 1.00 0.85 0.90 Fit Protected 0.95 1.00 1.00 0.99 Satd. Flow (port) 1.770 3539 3539 1637 Fit Permitted 0.95 1.00 1.00 0.99 Satd. Flow (perm) 1.770 3539 3539 1637 Volume (vph) 47 181 497 107 108 309 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 51 197 540 37 288 0 Confl. Bikes (#hr) 2 2 Confl. Bikes (#hr) 2 2 2 Confl. Bikes (#hr) 2 2 2 Tum Type Prot Perm Permitted Phases 6 4	Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99			
Fri 1.00 1.00 1.00 0.85 0.90 Fit Protected 0.95 1.00 1.00 0.99 Satd. Flow (port) 1770 3539 3539 1637 Fit Permitted 0.95 1.00 1.00 0.99 Satd. Flow (perm) 1770 3539 3539 1637 Volume (vph) 47 181 497 107 108 309 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 51 197 540 116 117 336 RTOR Reduction (vph) 51 197 540 37 28 0 Confl. Bikes (#hrr) 2 2 2 2 2 Tum Type Prot Perm 2 2 2 2 Confl. Bikes (#hrr) 2 2 0.11.7 2 2 2 Confl. Cereen, G (s) 1.6 17.6 12.0 11.7 2 2 2 2 2 2 2 2	Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			
Satd. Flow (prot) 1770 3539 3539 1583 1637 Fit Permitted 0.95 1.00 1.00 0.99 Satd. Flow (perm) 1770 3539 3539 1583 1637 Volume (vph) 47 181 497 107 108 309 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 51 197 540 116 117 336 RTOR Reduction (vph) 0 0 79 165 0 165 0 Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Bikes (#hr) 2 2 Confl. Bikes (#hr) 2 11.7 Turm Type Prot Permited Phases 6 Actuated Green, G (s) 1.6 17.6 12.0 11.7 Effective Green, g (s) 1.6 17.6 12.0 11.7 Cearance Time (s) 4.0 4.0	Frt	1.00	1.00	1.00	0.85	0.90			
Fit Permitted 0.95 1.00 1.00 1.00 0.99 Satd. Flow (perm) 1770 3539 3539 1583 1637 Volume (vph) 47 181 497 107 108 309 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 51 197 540 116 117 336 RTOR Reduction (vph) 0 0 0 79 165 0 Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Peds. (#/hr) 2 2 2 2 2 Confl. Reds. (#/hr) 2 2 2 2 2 Tum Type Prot Perm 7 64 4	Flt Protected	0.95	1.00	1.00	1.00	0.99			
Satd. Flow (perm) 1770 3539 3539 1583 1637 Volume (vph) 47 181 497 107 108 309 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 51 197 540 116 117 336 RTOR Reduction (vph) 0 0 0 79 165 0 Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Bikes (#/hr) 2 2 2 2 2 Confl. Bikes (#/hr) 2 2 2 2 2 Permited Phases 5 2 6 4 4 Permited Phases 5 2 6 4 4 Actuated g/C Ratio 0.04 0.47 0.32 0.32 0.31 0 116 11.7 Actuated g/C Ratio 0.04 0.47 0.32 0.32 0.31 0.40	Satd. Flow (prot)	1770	3539	3539	1583	1637			
Volume (vph) 47 181 497 107 108 309 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 51 197 540 116 117 336 RTOR Reduction (vph) 0 0 79 165 0 Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Peds. (#/hr) 2 2 2	Flt Permitted	0.95	1.00	1.00	1.00	0.99			
Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 51 197 540 116 117 336 RTOR Reduction (vph) 0 0 0 79 165 0 Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Peds. (#/hr) 2 2 2 2 2 Confl. Bikes (#/hr) 2 2 2 2 2 Confl. Peds. (#/hr) 2 2 2 2 2 Confl. Peds. (#/hr) 2 2 2 2 2 2 Confl. Peds. (#/hr) 2 <	Satd. Flow (perm)	1770	3539	3539	1583	1637			
Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 51 197 540 116 117 336 RTOR Reduction (vph) 0 0 0 79 165 0 Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Peds. (#/hr) 2 2 2 2 2 Confl. Bikes (#/hr) 2 2 2 2 Turn Type Prot Perm 2 11.7 Protected Phases 5 2 6 4 Permitted Phases 6 4 4.0 4.0 4.0 4.0 Actuated Green, G (s) 1.6 17.6 12.0 11.7 Effective Green, g (s) 3.0 <td< td=""><td>Volume (vph)</td><td>47</td><td>181</td><td>497</td><td>107</td><td>108</td><td>309</td><td></td><td></td></td<>	Volume (vph)	47	181	497	107	108	309		
Adj. Flow (vph) 51 197 540 116 117 336 RTOR Reduction (vph) 0 0 0 79 165 0 Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Bikes (#/hr) 2 2 2 2 Confl. Bikes (#/hr) 2 2 2 Protected Phases 5 2 6 4 Permitted Phases 6 6 6 Actuated Green, G (s) 1.6 17.6 12.0 11.7 Effective Green, g (s) 1.6 17.6 12.0 11.7 Actuated g/C Ratio 0.04 0.47 0.32 0.31 Clearance Time (s) 4.0 Clearance Time (s) 3.0 3.0 3.0 3.0 3.0 3.0 1.0 V/s Ratio Port 0.03 0.06 c0.15 c0.18 v/v/s Ratio Port 1.00 1.00 V/s Ratio Perm 0.02 0.7 0.56 1.16 1.16 1.8.8 10.7 Progression Factor 1.00									
RTOR Reduction (vph) 0 0 79 165 0 Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Peds. (#/hr) 2 2 2 2 2 Confl. Bikes (#/hr) 2 2 2 2 2 Tum Type Prot Perm 2 2 2 2 Confl. Bikes (#/hr) 2									
Lane Group Flow (vph) 51 197 540 37 288 0 Confl. Peds. (#/hr) 2									
Confl. Peds. (#/hr) 2 2 Confl. Bikes (#/hr) 2 2 Confl. Bikes (#/hr) 2 2 Turn Type Prot Perm Protected Phases 5 2 6 4 Permitted Phases 6 4 4 4 Actuated Green, G (s) 1.6 17.6 12.0 11.7 Effective Green, g (s) 1.6 17.6 12.0 11.7 Actuated g/C Ratio 0.04 0.47 0.32 0.31 Clearance Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vis Ratio Prot c0.03 0.06 c0.15 c0.18 v/v/s Ratio Perm 0.02 v/c Ratio 0.67 0.12 0.47 0.07 0.56 1.01 1.00 1.00 Inform Delay, d1 17.6 5.5 10.1 8.8 10.7 Protected Service D A B A B A B A B<									
Confl. Bikes (#/hr) 2 Turn Type Prot Perm Protected Phases 5 2 6 4 Permitted Phases 6 6 6 Actuated Green, G (s) 1.6 17.6 12.0 11.7 Effective Green, g (s) 1.6 17.6 12.0 11.7 Actuated g/C Ratio 0.04 0.47 0.32 0.31 Clearance Time (s) 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Vis Ratio Prot c0.03 0.06 c0.15 c0.18 v/s V/s Ratio Perm 0.02 v/c Ratio 0.67 0.12 0.47 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 100 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00									
Turn Type Prot Permi Protected Phases 5 2 6 4 Permitted Phases 6 6 6 Actuated Green, G (s) 1.6 17.6 12.0 11.7 Effective Green, g (s) 1.6 17.6 12.0 11.7 Actuated g/C Ratio 0.04 0.47 0.32 0.32 0.31 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 1.0 Lane Grp Cap (vph) 76 1670 1139 509 513 v/s Ratio Perm 0.02 v/c Ratio 0.67 0.12 0.47 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1									
Protected Phases 5 2 6 4 Permitted Phases 6 6 6 Actuated Green, G (s) 1.6 17.6 12.0 11.7 Effective Green, g (s) 1.6 17.6 12.0 11.7 Actuated g/C Ratio 0.04 0.47 0.32 0.32 0.31 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 76 1670 1139 509 513 v/s Ratio Perm 0.02 v/c Ratio 0.67 0.12 0.47 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.02 1.12	. ,	Prot			Perm				
Permitted Phases 6 Actuated Green, G (s) 1.6 17.6 12.0 11.7 Effective Green, g (s) 1.6 17.6 12.0 11.7 Actuated g/C Ratio 0.04 0.47 0.32 0.32 0.31 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 76 1670 1139 509 513 v/s Ratio Prot c0.03 0.66 c0.15 c0.18 v/v/s Ratio Perm 0.02 v/c Ratio 0.67 0.12 0.47 0.07 0.56 1.01 1.00			2	6		4			
Actuated Green, G (s) 1.6 17.6 12.0 11.7 Effective Green, g (s) 1.6 17.6 12.0 11.7 Actuated g/C Ratio 0.04 0.47 0.32 0.32 0.31 Clearance Time (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 76 1670 1139 509 513 v/s Ratio Prot c0.03 0.06 c0.15 c0.18 v/s Ratio Perm 0.02 0.02 0.04 1.00 1.00 V/c Ratio 0.67 0.12 0.47 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B B B Approach LOS B B B B B B		-	_		6	-			
Effective Green, g (s) 1.6 17.6 12.0 11.7 Actuated g/C Ratio 0.04 0.47 0.32 0.32 0.31 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 76 1670 1139 509 513 v/s Ratio Prot c0.03 0.06 c0.15 c0.18 v/s Ratio Perm 0.02 v/c Ratio 0.67 0.12 0.47 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 <td></td> <td>1.6</td> <td>17.6</td> <td>12.0</td> <td></td> <td>11.7</td> <td></td> <td></td> <td></td>		1.6	17.6	12.0		11.7			
Actuated g/C Ratio 0.04 0.47 0.32 0.32 0.31 Clearance Time (s) 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 76 1670 1139 509 513 v/s Ratio Prot c0.03 0.06 c0.15 c0.18 v/s Ratio Perm 0.02 .002 .002 v/c Ratio 0.67 0.12 0.47 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B B B Approach LOS B B B B B Intersection Summary 11.2 HCM Level of Service B Actuated Cycle Length (s) 37.3 Sum of lost t		1.6				11.7			
Clearance Time (s) 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 76 1670 1139 509 513 V/s Ratio Prot c0.03 0.06 c0.15 c0.18 V/s Ratio Perm 0.02 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B A Approach LOS B B B B Intersection Summary 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A Analysis Period (min) 15 15			0.47	0.32	0.32	0.31			
Lane Grp Cap (vph) 76 1670 1139 509 513 v/s Ratio Prot c0.03 0.06 c0.15 c0.18 v/s Ratio Perm 0.02 0.06 c0.15 c0.18 v/s Ratio Perm 0.02 0.07 0.12 0.47 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B A B Approach LOS B B B B B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service <td< td=""><td></td><td>4.0</td><td>4.0</td><td>4.0</td><td>4.0</td><td>4.0</td><td></td><td></td><td></td></td<>		4.0	4.0	4.0	4.0	4.0			
Lane Grp Cap (vph) 76 1670 1139 509 513 v/s Ratio Prot c0.03 0.06 c0.15 c0.18 v/s Ratio Perm 0.02 v/s Ratio Perm 0.02 v/c Ratio 0.67 0.12 0.47 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B A B Approach LOS B B B B B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A	Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			
v/s Ratio Prot c0.03 0.06 c0.15 c0.18 v/s Ratio Perm 0.02 0.02 v/s Ratio Derm 0.02 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B A B Approach Delay (s) 12.3 10.2 12.1 Approach LOS B B B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A A A									
v/s Ratio Perm 0.02 v/c Ratio 0.67 0.12 0.47 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B A B Approach Delay (s) 12.3 10.2 12.1 Approach LOS B B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A A					000				
v/c Ratio 0.67 0.12 0.47 0.07 0.56 Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B A B Approach Delay (s) 12.3 10.2 12.1 Approach LOS B B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53		20.00	0.00	505	0.02	20.10			
Uniform Delay, d1 17.6 5.5 10.1 8.8 10.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B A B Approach Delay (s) 12.3 10.2 12.1 Approach LOS B B B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity ratio 0.53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A A		0.67	0.12	0.47		0.56			
Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B A B Approach Delay (s) 12.3 10.2 12.1 Approach LOS B B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53									
Incremental Delay, d2 20.8 0.0 0.3 0.1 1.4 Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B A B Approach Delay (s) 12.3 10.2 12.1 Approach LOS B B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A A									
Delay (s) 38.4 5.5 10.4 8.8 12.1 Level of Service D A B A B Approach Delay (s) 12.3 10.2 12.1 Approach LOS B B B Intersection Summary B B B B B B HCM Average Control Delay 11.2 HCM Level of Service B A HCM Volume to Capacity ratio 0.53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A Analysis Period (min) 15 15 12.0									
Level of Service D A B A B Approach Delay (s) 12.3 10.2 12.1 Approach LOS B B B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A Analysis Period (min) 15									
Approach Delay (s) 12.3 10.2 12.1 Approach LOS B B B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A Analysis Period (min) 15 15									
Approach LOS B B B Intersection Summary Intersection Service B HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53		2							
Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A Analysis Period (min) 15									
HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.53 53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A Analysis Period (min) 15			5	5		5			
HCM Volume to Capacity ratio 0.53 Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A Analysis Period (min) 15									
Actuated Cycle Length (s) 37.3 Sum of lost time (s) 12.0 Intersection Capacity Utilization 52.2% ICU Level of Service A Analysis Period (min) 15					H	ICM Lev	el of Service	В	
Intersection Capacity Utilization 52.2% ICU Level of Service A AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA									
Analysis Period (min) 15									
		tilization			10	CU Leve	el of Service	A	
c Critical Lane Group				15					
	c Critical Lane Group								

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Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWF
Lane Configurations		\$		4			474			AT A		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)		4.0		4.0			4.0			4.0		
Lane Util. Factor		1.00		1.00			0.95			0.95		
Frpb, ped/bikes		1.00		1.00			1.00			0.99		
Flpb, ped/bikes		1.00		1.00			1.00			1.00		
Frt		1.00		0.97			0.99			0.98		
Flt Protected		0.99		1.00			1.00			1.00		
Satd. Flow (prot)		1838		1805			3514			3437		
Flt Permitted		0.54		1.00			0.93			0.87		
Satd. Flow (perm)		1008		1805			3267			3008		
Volume (vph)	64	348	15	488	122	21	670	26	40	490	77	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	70	378	16	530	133	23	728	28	43	533	84	
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	15	0	
Lane Group Flow (vph)	0	462	0	663	0	0	779	0	0	645	0	
Confl. Peds. (#/hr)			9		11	28			7		28	
Confl. Bikes (#/hr)			1		2							
Turn Type	Perm					Perm			Perm		C	custor
Protected Phases		4		8			2			6		
Permitted Phases	4					2			6			
Actuated Green, G (s)		27.0		27.0			27.0			27.0		
Effective Green, g (s)		27.0		27.0			27.0			27.0		
Actuated g/C Ratio		0.44		0.44			0.44			0.44		
Clearance Time (s)		4.0		4.0			4.0			4.0		
Vehicle Extension (s)		3.0		3.0			3.0			3.0		
Lane Grp Cap (vph)		439		786			1423			1310		
v/s Ratio Prot				0.37								
v/s Ratio Perm		c0.46					c0.24			0.21		
v/c Ratio		1.05		0.84			0.55			0.49		
Uniform Delay, d1		17.5		15.6			13.0			12.6		
Progression Factor		1.00		1.00			1.00			1.00		
Incremental Delay, d2		57.6		8.2			1.5			1.3		
Delay (s)		75.1		23.8			14.5			13.9		
Level of Service		E		С			В			В		
Approach Delay (s)		75.1		23.8			14.5			13.9		
Approach LOS		E		С			В			В		
Intersection Summary												
HCM Average Control E			27.7	F	ICM Lev	el of S	ervice		С			
HCM Volume to Capaci			0.80									
Actuated Cycle Length (62.0		Sum of I				8.0			
Intersection Capacity Ut	ilization	1	13.3%	l.	CU Leve	el of Sei	rvice		Н			
Analysis Period (min)			15									

Horizon Year Alt 1 without Improvements

Timing Plan: PM Peak 1

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU

1: Commercial St & 16th St

Synchro 6 Report 3/4/2011

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4 1⊅		24	To			et.			17.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	91	347	31	3	458	25	61	41	7	127	25	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	377	34	3	498	27	66	45	8	138	27	76
Pedestrians		14			10			37			27	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			3			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					668							
pX, platoon unblocked												
vC, conflicting volume	552			448			1237	1187	252	971	1191	552
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	552			448			1237	1187	252	971	1191	552
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			19	72	99	0	83	83
cM capacity (veh/h)	991			1075			82	159	718	139	158	461
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	288	222	3	525	118	241						
Volume Left	99	0	3	0	66	138						
Volume Right	0	34	0	27	8	76						
cSH	991	1700	1075	1700	107	181						
Volume to Capacity	0.10	0.13	0.00	0.31	1.10	1.33						
Queue Length 95th (ft)	8	0	0	0	185	350						
Control Delay (s)	3.8	0.0	8.4	0.0	193.2	232.1						
Lane LOS	А		А		F	F						
Approach Delay (s)	2.1		0.1		193.2	232.1						
Approach LOS					F	F						
Intersection Summary												
Average Delay			57.2									
Intersection Capacity Ut	ilization	1	65.2%	1	CULev	el of Sei	vice		С			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Ť.		ЪÇ.	1÷			el.			5.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			0.99			1.00	
Frt	1.00	0.98		1.00	0.99			0.99			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1751	1806		1758	1829			1784			1685	
Flt Permitted	0.58	1.00		0.47	1.00			0.82			0.97	
Satd. Flow (perm)	1067	1806		862	1829			1506			1643	
Volume (vph)	34	315	62	9	246	27	75	61	13	6	23	39
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	342	67	10	267	29	82	66	14	7	25	42
RTOR Reduction (vph)	0	11	0	0	7	0	0	5	0	0	28	C
Lane Group Flow (vph)	37	398	0	10	289	0	0	157	0	0	46	0
Confl. Peds. (#/hr)	21		16	16		21	28		9	9		28
Confl. Bikes (#/hr)			4						3			6
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.3	12.3		12.3	12.3			10.1			10.1	
Effective Green, q (s)	12.3	12.3		12.3	12.3			10.1			10.1	
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.33			0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	432	731		349	740			500			546	
v/s Ratio Prot		c0.22			0.16							
v/s Ratio Perm	0.03			0.01				c0.10			0.03	
v/c Ratio	0.09	0.54		0.03	0.39			0.31			0.08	
Uniform Delay, d1	5.6	6.9		5.5	6.4			7.6			7.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.8		0.0	0.3			0.4			0.1	
Delay (s)	5.7	7.7		5.5	6.7			7.9			7.0	
Level of Service	A	А		A	A			A			A	
Approach Delay (s)		7.6			6.7			7.9			7.0	
Approach LOS		А			А			А			А	
Intersection Summary												
HCM Average Control E	Delay		7.3	F	ICM Le	vel of Se	ervice		Α			
HCM Volume to Capaci	ty ratio		0.44									
Actuated Cycle Length (30.4	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization	i .	49.9%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									
c Critical Lane Group												

Synchro 6 Report 3/4/2011

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Synchro 6 Report 3/4/2011

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			40			10	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	9	50	29	9	50	23	20	91	12	16	38	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	54	32	10	54	25	22	99	13	17	41	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	96	89	134	67								
Volume Left (vph)	10	10	22	17								
Volume Right (vph)	32	25	13	9								
Hadj (s)	-0.14	-0.11	0.01	0.01								
Departure Headway (s)	4.3	4.4	4.4	4.5								
Degree Utilization, x	0.11	0.11	0.16	0.08								
Capacity (veh/h)	790	774	778	754								
Control Delay (s)	7.9	7.9	8.3	7.9								
Approach Delay (s)	7.9	7.9	8.3	7.9								
Approach LOS	A	A	А	Α								
Intersection Summary												
Delay			8.0									
HCM Level of Service			А									
ntersection Capacity Ut	ilizatior	1	23.3%	- 10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 5: Main St & Sigsbe	e St					Hori	zon Ye	ear Alt	1 with T	out Im iming P		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			610			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	4	2	13	38	0	31	0	98	12	20	60	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	2	14	41	0	34	0	107	13	22	65	2
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	21	75	120	89								
Volume Left (vph)	4	41	0	22								
Volume Right (vph)	14	34	13	2								
Hadj (s)	-0.33	-0.13	-0.03	0.07								
Departure Headway (s)	4.1	4.3	4.2	4.3								
Degree Utilization, x	0.02	0.09	0.14	0.11								
Capacity (veh/h)	824	803	833	812								
Control Delay (s)	7.2	7.7	7.8	7.8								
Approach Delay (s)	7.2	7.7	7.8	7.8								
Approach LOS	А	А	А	A								
Intersection Summary												
Delay			7.8									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	ı	27.7%	- 10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									

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Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 PM no Improvements.sy7

Kimley-Horn and Associates, Inc.

Barrio Logan CPU	Horizon Year Alt 1 without Improvements
<u>6:</u> Harbor Dr & Sigsbee St	Timing Plan: PM Peak
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		-				•		-
Movement	EBL	EBT	WBT	WBR	SBL	SBR		SBR
Lane Configurations	۲	^	朴		Υ.			
Sign Control		Free	Free		Stop			
Grade		0%	0%		0%			
Volume (veh/h)	160	1945	780	100	100	80		80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92
Hourly flow rate (vph)	174	2114	848	109	109	87		87
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type					Raised			
Median storage veh)					0			
Upstream signal (ft)			1319					
pX, platoon unblocked	0.94				0.94	0.94		0.94
vC, conflicting volume	957				2307	478		478
vC1, stage 1 conf vol					902			
vC2, stage 2 conf vol					1405			
vCu, unblocked vol	888				2327	378		378
tC, single (s)	4.1				6.8	6.9		6.9
tC, 2 stage (s)					5.8			
tF (s)	2.2				3.5	3.3		3.3
p0 queue free %	76				0	85		85
cM capacity (veh/h)	712				77	581		581
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1		SR 1
Volume Total	174	1057	1057	565	391	196		-
Volume Left	174	0	0	0	0	109		
Volume Right	0	0	0	0	109	87		
cSH	712	1700	1700	1700	1700	125		
Volume to Capacity	0.24	0.62	0.62	0.33	0.23	1.57		
Queue Length 95th (ft)	24	0.02	0.02	0.55	0.23	352		
Control Delay (s)	11.7	0.0	0.0	0.0	0.0	352.4		
Lane LOS	B	0.0	0.0	0.0	0.0	552.4 F		
Approach Delay (s)	0.9			0.0		352.4		-
Approach LOS	0.9			0.0		552.4 F		
Approach LUS						F		F
Intersection Summary								
Average Delay			20.6					
Intersection Capacity Ut	ilization		70.9%	1	CU Lev	el of Servic	е	l of Service
Analysis Period (min)			15					

Barrio Logan CPU 7: Logan Ave & Bea	irdsley	St				Horiz	zon Ye	ear Alt	1 with		proven lan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		Т.		γ	4			de.			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	515	69	41	154	0	56	0	122	272	110	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	560	75	45	167	0	61	0	133	296	120	41
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	635	45	167	193	457							
Volume Left (vph)	0	45	0	61	296							
Volume Right (vph)	75	0	0	133	41							
Hadj (s)	-0.04	0.53	0.03	-0.31	0.11							
Departure Headway (s)	7.1	8.8	8.3	7.6	7.1							
Degree Utilization, x	1.25	0.11	0.38	0.41	0.91							
Capacity (veh/h)	513	390	413	441	499							
Control Delay (s)	149.8	11.6	15.1	15.8	46.9							
Approach Delay (s)	149.8	14.4		15.8	46.9							
Approach LOS	F	В		С	E							
Intersection Summary												
Delay			81.9									
HCM Level of Service			F									
Intersection Capacity Ut	ilizatior	า	77.8%	10	CU Leve	el of Ser	vice		D			
Analysis Period (min)			15									

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Synchro 6 Report 3/4/2011

Barrio Logan CPU 8: National Ave & Be	eardsl	ev St				Horiz	zon Ye	ear Alt			proven Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	Ţ.		76	Þ			et.			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	19	625	2	113	347	77	9	43	134	189	83	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	679	2	123	377	84	10	47	146	205	90	12
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	21	682	123	461	202	308						
Volume Left (vph)	21	0	123	0	10	205						
Volume Right (vph)	0	2	0	84	146	12						
Hadj (s)	0.53	0.03	0.53	-0.09	-0.39	0.14						
Departure Headway (s)	8.6	8.1	8.4	7.8	8.3	8.2						
Degree Utilization, x	0.05	1.54	0.29	1.00	0.46	0.70						
Capacity (veh/h)	415	446	422	461	410	427						
Control Delay (s)	10.9	273.1	13.6	67.8	18.2	28.2						
Approach Delay (s)	265.4		56.4		18.2	28.2						
Approach LOS	F		F		С	D						
Intersection Summary												
Delay			129.0									
HCM Level of Service			F									
Intersection Capacity Ut	ilizatior	ı	80.5%	10	CU Lev	el of Ser	vice		D			
Analysis Period (min)			15									

Barrio Logan CPU 9: Newton Ave & Be	ardsle	ey St				Hori	zon Ye	ear Alt	1 with T		prover lan: PN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		¢.			\$			4.0			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	60	4	13	93	19	5	71	37	46	94	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	65	4	14	101	21	5	77	40	50	102	13
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	77	136	123	165								
Volume Left (vph)	8	14	5	50								
Volume Right (vph)	4	21	40	13								
Hadj (s)	0.02	-0.04	-0.15	0.05								
Departure Headway (s)	4.8	4.6	4.5	4.6								
Degree Utilization, x	0.10	0.18	0.15	0.21								
Capacity (veh/h)	694	721	758	735								
Control Delay (s)	8.3	8.6	8.3	8.9								
Approach Delay (s)	8.3	8.6	8.3	8.9								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			8.6									
HCM Level of Service			А									
Intersection Capacity Uti	ilizatior	ı	32.3%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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EBT Stop 64 0.92 70 WB 1 207 85 86 -0.13 4.8	EBR 4 0.92 4 NB 1 146 0 118 -0.45	WBL 78 0.92 85 SB 1 217 157 18	WBT Stop 33 0.92 36	WBR 79 0.92 86	NBL 0 0.92 0	NBT Stop 25 0.92 27	NBR 109 0.92 118	SBL 144 0.92 157	SBT \$top 39 0.92 42	SBR 17 0.92 18
Stop 64 0.92 70 WB 1 207 85 86 -0.13	0.92 4 NB 1 146 0 118	0.92 85 SB 1 217 157 18	Stop 33 0.92	0.92	0.92	Stop 25 0.92	0.92	0.92	Stop 39 0.92	0.92
64 0.92 70 WB 1 207 85 86 -0.13	0.92 4 NB 1 146 0 118	0.92 85 SB 1 217 157 18	33 0.92	0.92	0.92	25 0.92	0.92	0.92	39 0.92	0.92
0.92 70 WB 1 207 85 86 -0.13	0.92 4 NB 1 146 0 118	0.92 85 SB 1 217 157 18	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
70 WB 1 207 85 86 -0.13	4 NB 1 146 0 118	85 SB 1 217 157 18								
WB 1 207 85 86 -0.13	NB 1 146 0 118	SB 1 217 157 18	36	86	0	27	118	157	42	18
207 85 86 -0.13	146 0 118	217 157 18								
85 86 -0.13	0 118	157 18								
86 -0.13	118	18								
-0.13										
	-0.45	0 40								
48		0.13								
7.0	4.5	5.0								
0.28	0.18	0.30								
694	731	676								
9.6	8.5	10.1								
9.6		10.1								
A	A	В								
	9.5									
	А									
4	47.4%	10	CU Lev	el of Sei	vice		А			
	9.6 A	9.6 8.5 A A 9.5 A 47.4%	9.6 8.5 10.1 A A B 9.5 A 47.4% II	9.6 8.5 10.1 A A B 9.5 A 47.4% ICU Lev	9.6 8.5 10.1 A A B 9.5 A 47.4% ICU Level of Ser	9.6 8.5 10.1 A A B 9.5 A 47.4% ICU Level of Service	9.6 8.5 10.1 A A B 9.5 A 47.4% ICU Level of Service	9.6 8.5 10.1 A A B 9.5 A 47.4% ICU Level of Service A	9.6 8.5 10.1 A A B 9.5 A	9.6 8.5 10.1 A A B 9.5 A 47.4% ICU Level of Service A

11: Harbor Dr & Bea	ardsley	/ St					Timing Plan: PM Pea
	۶	→	+	×	×	-	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	ň	ተቀ	≜ Ъ		44		
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	95	1950	860	20	40	35	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	103	2120	935	22	43	38	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					Raised		
Median storage veh)					0		
Upstream signal (ft)			658				
pX, platoon unblocked	0.88				0.88	0.88	
vC, conflicting volume	957				2212	478	
vC1, stage 1 conf vol					946		
vC2, stage 2 conf vol					1266		
vCu, unblocked vol	820				2240	280	
tC, single (s)	4.3				6.8	6.9	
tC, 2 stage (s)	0.0				5.8	2.2	
tF (s)	2.3				3.5	3.3 94	
p0 queue free %	85				53 93	.	
cM capacity (veh/h)	668					635	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1		SB 1	
Volume Total	103	1060	1060	623	333	82	
Volume Left	103	0	0	0	0	43	
Volume Right	0	0	0	0	22	38	
cSH	668	1700	1700	1700	1700	155	
Volume to Capacity	0.15	0.62	0.62	0.37	0.20	0.53	
Queue Length 95th (ft)	14 11.4	0.0	0.0	0.0	0.0	65 51.6	
Control Delay (s) Lane LOS	11.4 B	0.0	0.0	0.0	0.0	51.6 F	
Approach Delay (s)	0.5			0.0		51.6	
Approach LOS	0.5			0.0		51.6 F	
Intersection Summary							
Average Delay			1.7				
Intersection Capacity Ut	ilization		64.9%	1	CILLeve	el of Service	C
Analysis Period (min)	mzation		15				U U

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				λί,	4		Υç	4			41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor				0.95	0.95		1.00	1.00			0.95	
Frt				1.00	0.95		1.00	1.00			0.98	
Flt Protected				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (prot)				1478	1452		1626	1712			3200	
Flt Permitted				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (perm)				1478	1452		1626	1712			3200	
Volume (vph)	0	0	0	517	157	154	382	345	0	0	330	40
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	562	171	167	415	375	0	0	359	43
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	12	C
Lane Group Flow (vph)	0	0	0	444	432	0	415	375	0	0	390	C
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%
Turn Type				Split			Split					
Protected Phases				. 8	8		6	6			2	
Permitted Phases												
Actuated Green, G (s)				25.3	25.3		21.7	21.7			14.0	
Effective Green, g (s)				25.3	25.3		21.7	21.7			14.0	
Actuated g/C Ratio				0.35	0.35		0.30	0.30			0.19	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				512	503		483	509			614	
v/s Ratio Prot				c0.30	0.30		c0.26	0.22			c0.12	
v/s Ratio Perm												
v/c Ratio				0.87	0.86		0.86	0.74			0.63	
Uniform Delay, d1				22.3	22.2		24.2	23.1			27.1	
Progression Factor				1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2				14.4	13.7		14.1	5.5			2.2	
Delay (s)				36.6	35.9		38.3	28.6			29.3	
Level of Service				D	D		D	С			С	
Approach Delay (s)		0.0			36.3			33.7			29.3	
Approach LOS		А			D			С			С	
Intersection Summary												
HCM Average Control De			34.0	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacity			0.81									
Actuated Cycle Length (s			73.0			ost time			12.0			
Intersection Capacity Util	lization		64.7%	10	CU Lev	el of Se	rvice		С			
Analysis Period (min)			15									

Horizon Year Alt 1 without Improvements

Barrio Logan CPU 13: Logan Ave & Ce	sar E.	Chav	ez Pkv	vy		Horizon Year Alt 1 without Improvements Timing Plan: PM Peak							
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF	
Lane Configurations	ž	ĥ		ž	*	7	μÇ	44	ř	ž	41.		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.96	1.00	1.00		
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1760	1749		1766	1863	1549	1530	3059	1312	1530	3018		
Flt Permitted	0.48	1.00		0.12	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	898	1749		219	1863	1549	1530	3059	1312	1530	3018		
Volume (vph)	130	420	230	120	280	90	140	506	670	114	694	52	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	141	457	250	130	304	98	152	550	728	124	754	57	
RTOR Reduction (vph)	0	25	0	0	0	56	0	0	144	0	7	(
Lane Group Flow (vph)	141	682	0	130	304	42	152	550	584	124	804	(
Confl. Peds. (#/hr)	10		13	13		10			27			27	
Confl. Bikes (#/hr)			4			2			3			2	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%	
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot			
Protected Phases		4			8		5	2		1	6		
Permitted Phases	4			8		8			2				
Actuated Green, G (s)	34.0	34.0		34.0	34.0	34.0	9.6	29.0	29.0	5.0	24.4		
Effective Green, g (s)	34.0	34.0		34.0	34.0	34.0	9.6	29.0	29.0	5.0	24.4		
Actuated g/C Ratio	0.42	0.42		0.42	0.42	0.42	0.12	0.36	0.36	0.06	0.30		
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	382	743		93	792	658	184	1109	476	96	920		
v/s Ratio Prot		0.39			0.16		0.10	0.18		c0.08	0.27		
v/s Ratio Perm	0.16			c0.59		0.03			c0.45				
v/c Ratio	0.37	0.92		1.40	0.38	0.06	0.83	0.50	1.23	1.29	0.87		
Uniform Delay, d1	15.7	21.7		23.0	15.8	13.6	34.4	19.8	25.5	37.5	26.3		
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.80	0.82	0.66	1.00	1.00		
Incremental Delay, d2	0.6	16.2		231.6	0.3	0.0	8.8	0.5	107.8	188.9	11.3		
Delay (s)	16.3	37.9		254.6	16.1	13.6	36.2	16.7	124.6	226.4	37.7		
Level of Service	В	D		F	В	В	D	В	F	F	D		
Approach Delay (s)		34.3			73.9			73.7			62.7		
Approach LOS		С			E			E			E		
Intersection Summary													
HCM Average Control D	Delay		62.1	H	ICM Le	vel of S	ervice		E				
HCM Volume to Capacit	ty ratio		1.32										
Actuated Cycle Length (s)		80.0	S	um of I	ost time	e (s)		12.0				
Intersection Capacity Ut		1	96.9%	10	CU Lev	el of Se	rvice		F				
Analysis Period (min)			15										
c Critical Lane Group													

c Critical Lane Group

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Barrio Logan CPU

Synchro 6 Report 3/4/2011

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU	
14: National Ave & Cesar F. Chavez Pkwy	

Horizon Year Alt 1 without Improvements Timing Plan: PM Peak

Synchro 6 Report 3/4/2011

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	ň	Ţ.	34	To	7	41.	H	↑	ř
Volume (vph)	300	400	110	270	120	1000	120	550	410
Turn Type	Perm		Perm		Perm		Perm		Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phases	4	4	8	8	2	2	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	42.0	42.0	42.0	42.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	52.5%	52.5%	52.5%	52.5%	47.5%	47.5%	47.5%	47.5%	47.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None		C-Min				
Act Effct Green (s)	38.0	38.0	38.0	38.0	34.0	34.0	34.0	34.0	34.0
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.42	0.42	0.42	0.42	0.42
v/c Ratio	1.48	0.87	1.13	0.71	0.92	0.88	1.60	0.87	0.53
Control Delay	262.8	30.4	155.1	21.3	79.7	25.8	313.5	16.6	1.1
Queue Delay	0.0	0.3	4.1	0.0	0.0	1.3	0.0	1.0	0.6
Total Delay	262.8	30.8	159.2	21.3	79.7	27.2	313.5	17.6	1.7
LOS	F	С	F	С	E	С	F	В	A
Approach Delay		101.1		44.5		32.3		44.3	
Approach LOS		F		D		С		D	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	n: 80								
Offset: 2 (3%), Referen	nced to p	hase 2	:NBTL a	and 6:SI	BTL, Sta	art of G	reen		
Natural Cycle: 65					,				
Control Type: Actuated	d-Coordii	nated							
Maximum v/c Ratio: 1	.60								
Intersection Signal Del	lay: 54.9				Intersec	tion LO	S: D		
Intersection Capacity L		n 98.5%)		CU Lev	el of Se	rvice F		
Analysis Period (min)									

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy

	→ ø4	
38 s	42 s	
\$ ▶ ø6	∜ ø8	
38 s	42 s	

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14: National Ave & 0	Cesar	E. Cha	avez P	kwy					T	iming F	Plan: PN	1 Peak
	٦	→	$\mathbf{\hat{z}}$	4	+	•	1	t	1	1	ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	T.		14	To		AL.	个门		7	1	۳
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1745		1770	1722		1612	3179		1530	1610	1369
Flt Permitted	0.25	1.00		0.12	1.00		0.19	1.00		0.12	1.00	1.00
Satd. Flow (perm)	463	1745		224	1722		331	3179		189	1610	1369
Volume (vph)	300	400	290	110	270	275	120	1000	100	120	550	410
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	435	315	120	293	299	130	1087	109	130	598	446
RTOR Reduction (vph)	0	33	0	0	18	0	0	9	0	0	0	256
Lane Group Flow (vph)	326	717	0	120	574	0	130	1187	0	130	598	190
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	38.0	38.0		38.0	38.0		34.0	34.0		34.0	34.0	34.0
Effective Green, g (s)	38.0	38.0		38.0	38.0		34.0	34.0		34.0	34.0	34.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	220	829		106	818		141	1351		80	684	582
v/s Ratio Prot		0.41			0.33			0.37			0.37	
v/s Ratio Perm	c0.70			0.54			0.39			c0.69		0.14
v/c Ratio	1.48	0.87		1.13	0.70		0.92	0.88		1.62	0.87	0.33
Uniform Delay, d1	21.0	18.7		21.0	16.5		21.7	21.1		23.0	21.0	15.3
Progression Factor	1.00	1.00		1.00	1.00		0.79	0.81		0.40	0.38	0.08
Incremental Delay, d2	239.6	9.4		127.4	2.7		55.0	7.9		302.5	6.4	0.6
Delay (s)	260.6	28.1		148.4	19.3		72.2	25.0		311.6	14.4	1.9
Level of Service	F	С		F	В		E	С		F	В	A
Approach Delay (s)		98.5			41.0			29.7			42.5	
Approach LOS		F			D			С			D	
Intersection Summary												
HCM Average Control E			52.4	F	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci	ty ratio		1.55									
Actuated Cycle Length ((s)		80.0	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut	tilization		98.5%	10	CU Lev	el of Se	rvice		F			
Analysis Period (min)			15									
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Horizon Year Alt 1 without Improvements

Analysis Period (min) c Critical Lane Group

Barrio Logan CPU

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15: Newton Ave &	Cesari	011a	VEZII	(vv y					Timing Plan: PM Pea
	≯	-	1	+	1	†	1	Ŧ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	7	Т.	35	To	7	41.	H.	Þ	
Volume (vph)	135	130	90	70	40	795	165	890	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0	
Total Split (%)		38.8%			61.3%				
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	15.6	15.6	15.6	15.6	56.4	56.4	56.4	56.4	
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.70	0.70	0.70	0.70	
v/c Ratio	0.72	0.58	0.49	0.49	0.41	0.41	0.61	0.87	
Control Delay	48.7	29.3	35.6	15.9	16.9	4.5	14.1	15.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.6	
Total Delay	48.7	29.3	35.6	15.9	16.9	4.6	14.1	16.6	
LOS	D	С	D	В	В	А	В	В	
Approach Delay		37.1		22.3		5.1		16.2	
Approach LOS		D		С		А		В	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	n: 80								
Offset: 0 (0%), Refere		hase 2	NBTI a	and 6:SE	STI Sta	art of G	reen		
Natural Cycle: 90					. L , Old		0.011		
Control Type: Actuate	d-Coordii	nated							
Maximum v/c Ratio: 0		alou							
Intersection Signal De				1	ntersec	tion LO	S∙ B		
Intersection Capacity						el of Se			
Analysis Period (min)					00 201	0. 01 00			

Splits and Phases:	15: Newton Ave & Cesar E. Chave	Pkwy	
↑ ø2		l → ₀4	
49 s		31 s	
↓ ⊳ _{ø6}		↓ ø8	
49 s		31 s	

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 15: Newton Ave & C	Hori	zon Ye	ear Alt			prover Plan: PM						
	۶	→	\mathbf{r}	4	+	•	1	Ť	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	ţ,		ĸ	1×		¥.	个门		×	1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.95		1.00	0.91		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1765		1770	1686		1612	3189		1612	1682	
Flt Permitted	0.45	1.00		0.43	1.00		0.15	1.00		0.28	1.00	
Satd. Flow (perm)	847	1765		801	1686		257	3189		477	1682	
Volume (vph)	135	130	70	90	70	120	40	795	60	165	890	55
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	141	76	98	76	130	43	864	65	179	967	60
RTOR Reduction (vph)	0	30	0	0	93	0	0	5	0	0	2	0
Lane Group Flow (vph)	147	187	0	98	113	0	43	924	0	179	1025	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.6	15.6		15.6	15.6		56.4	56.4		56.4	56.4	
Effective Green, g (s)	15.6	15.6		15.6	15.6		56.4	56.4		56.4	56.4	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.70	0.70		0.70	0.70	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	165	344		156	329		181	2248		336	1186	
v/s Ratio Prot		0.11			0.07			0.29			c0.61	
v/s Ratio Perm	c0.17			0.12			0.17			0.38		
v/c Ratio	0.89	0.54		0.63	0.34		0.24	0.41		0.53	0.86	
Uniform Delay, d1	31.4	29.0		29.5	27.8		4.2	4.9		5.6	8.9	
Progression Factor	1.00	1.00		1.00	1.00		0.70	0.71		0.67	0.67	
Incremental Delay, d2	40.3	1.8		7.7	0.6		2.3	0.4		3.7	5.4	
Delay (s)	71.7	30.8		37.2	28.4		5.2	3.9		7.4	11.4	
Level of Service	E	С		D	С		А	A		А	В	
Approach Delay (s)		47.3			31.2			4.0			10.8	
Approach LOS		D			С			A			В	
Intersection Summary												
HCM Average Control E)olov		15.3			vel of S	onvice		В			
HCM Volume to Capaci			0.87	-			ervice		В			
Actuated Cycle Length (80.0		um of I	oet time	(c)		8.0			
	ersection Capacity Utilization								0.0 E			
Analysis Period (min)	mzauon		85.4% 15		CO Lev		VICE		E			
Analysis Periou (min)			13									

c Critical Lane Group

Synchro 6 Report 3/4/2011

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 16: Main St & Cesa	ar E. Cl	havez	Pkwy			Hor	izon Y	ear Alt	: 1 without Improvements Timing Plan: PM Peak
	۶	-	-	-	1	t	1	ţ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	7	ţ,	35	Ъ	7	41.	ЯÇ	ь	
Volume (vph)	120	290	70	230	70	640	250	540	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	36.0	36.0	36.0	36.0	44.0	44.0	44.0	44.0	
Total Split (%)		45.0%		45.0%			55.0%	55.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	27.9	27.9	27.9	27.9	44.1	44.1	44.1	44.1	
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.55	0.55	0.55	0.55	
v/c Ratio	0.92	0.53	0.28	0.84	0.84	0.53	1.27	1.01	
Control Delay	82.8	22.7	19.7	32.3	86.5	13.0	164.1	42.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.2	0.0	19.5	
Total Delay	82.8	22.7	19.7	32.3	86.5	14.2	164.1	62.2	
LOS	F	С	В	С	F	В	F	E	
Approach Delay		39.3		30.7		19.9		86.5	
Approach LOS		D		С		В		F	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	: 80								
Offset: 2 (3%), Referen	nced to p	phase 2	NBTL a	and 6:SI	BTL, Sta	art of G	reen		
Natural Cycle: 75									
Control Type: Actuated	d-Coordi	nated							
Maximum v/c Ratio: 1.	27								
Intersection Signal Del	ay: 48.6			1	ntersec	tion LO	S: D		
Intersection Capacity L	Jtilizatio	n 98.3%		1	CU Lev	el of Se	ervice F		
Analysis Period (min)	15								
Splits and Phases: 1	l6: Main	St & Ce	esar E. (Chavez	Pkwy				

↑ ⁰² ²	→ ₀₄
44 s	36 s
↓ _{ø6}	√ ø8
44 s	36 s

Kimley-Horn and Associates, Inc.

16: Main St & Cesar	٠		~	~	+	۰.	•	+	*	6	1	2
	_	-	•	•	-	`	7		1	•	+	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	Ţ.		Ψ.	To		۲ŗ	41.		۲	Ť.»	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.92		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1760	1836		1750	1684		1556	2974		1543	1534	
Flt Permitted	0.16	1.00		0.39	1.00		0.11	1.00		0.26	1.00	
Satd. Flow (perm)	288	1836		721	1684		183	2974		416	1534	
Volume (vph)	120	290	25	70	230	270	70	640	180	250	540	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	315	27	76	250	293	76	696	196	272	587	283
RTOR Reduction (vph)	0	4	0	0	57	0	0	29	0	0	19	(
Lane Group Flow (vph)	130	338	0	76	486	0	76	863	0	272	851	(
Confl. Peds. (#/hr)	19		24	24		19	16		20	20		16
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	27.9	27.9		27.9	27.9		44.1	44.1		44.1	44.1	
Effective Green, g (s)	27.9	27.9		27.9	27.9		44.1	44.1		44.1	44.1	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.55	0.55		0.55	0.55	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	100	640		251	587		101	1639		229	846	
v/s Ratio Prot		0.18			0.29			0.29			0.55	
v/s Ratio Perm	c0.45			0.11			0.41			c0.65		
v/c Ratio	1.30	0.53		0.30	0.83		0.75	0.53		1.19	1.01	
Uniform Delay, d1	26.1	20.8		19.0	23.8		13.8	11.3		18.0	18.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.78	0.76	
Incremental Delay, d2	190.3	0.8		0.7	9.3		39.9	1.2		106.3	24.4	
Delay (s)	216.4	21.6		19.7	33.2		53.7	12.6		120.3	38.1	
Level of Service	F	С		В	С		D	В		F	D	
Approach Delay (s)		75.2			31.5			15.8			57.6	
Approach LOS		E			С			В			E	
Intersection Summary												
HCM Average Control E	Delay		42.5	H	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci	CM Volume to Capacity ratio		1.23									
Actuated Cycle Length (ctuated Cycle Length (s)			Sum of lost time (s)					8.0			
Intersection Capacity Ut	ection Capacity Utilization 98.3% ICU Le						vice		F			
Analysis Period (min)			15									
Critical Lana Croup												

c Critical Lane Group

Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 PM no Improvements.sy7

Kimley-Horn and Associates, Inc.

Barrio Logan CPU 17: Harbor Dr & Ces	sar E.	Chave	z Pkw	/	Horizon Year Alt 1 without Improvements Timing Plan: PM Peak							
	۶	-	\mathbf{r}	4	+	×	•	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ቀኈ		jir.	† I>		Υç	Þ			4	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1641	3265		1421	3232		1363	1314			1596	1368
Flt Permitted	0.95	1.00		0.95	1.00		0.71	1.00			0.83	1.00
Satd. Flow (perm)	1641	3265		1421	3232		1021	1314			1358	1368
Volume (vph)	468	1500	40	50	465	43	50	63	35	33	30	324
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	509	1630	43	54	505	47	54	68	38	36	33	352
RTOR Reduction (vph)	0	1	0	0	5	0	0	15	0	0	0	280
Lane Group Flow (vph)	509	1672	0	54	547	0	54	91	0	0	69	72
Confl. Peds. (#/hr)			11			6	4		1	1		4
Confl. Bikes (#/hr)			9			14			3			
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	3	14 2 6		13	1826			12			1 5 16	
Permitted Phases		50.0					12	44.0		1 5 16	00.5	1516
Actuated Green, G (s)	26.8	53.2		6.2	32.6		14.3	14.3			22.5	22.5
Effective Green, g (s)	26.8	53.2		6.2	32.6		14.3	14.3			22.5	22.5
Actuated g/C Ratio	0.24	0.48		0.06	0.30		0.13	0.13			0.20	0.20
Clearance Time (s)	4.0			4.0			4.0	4.0				
Vehicle Extension (s)	3.0	4504		3.0	050		3.0	3.0			070	
Lane Grp Cap (vph)	400	1581		80	959		133	171			278	280
v/s Ratio Prot	c0.31	c0.51		0.04	0.17		0.05	c0.07			0.05	.0.05
v/s Ratio Perm	4.07	1.00		0.00	0.57		0.05	0.50			0.05	c0.05
v/c Ratio	1.27 41.6	1.06		0.68	0.57		0.41	0.53			0.25	0.26
Uniform Delay, d1	1.00	20.4		1.00	1.00		43.9	1.00			1.21	3.67
Progression Factor Incremental Delay, d2	140.9	39.6		20.2	0.8		2.0	3.2			0.5	0.5
	182.5	67.9		71.1	33.5		45.9	47.9			44.6	135.2
Delay (s) Level of Service	162.5 F	67.9 E		/ 1. 1 E	33.5 C		45.9 D	47.9 D			44.0 D	135.2 F
Approach Delay (s)		94.6			36.9		U	47.2			120.3	
Approach LOS		54.0 F			50.9 D			47.2 D			120.5	
Approach 200					U			U				
Intersection Summary												
HCM Average Control E			85.2	H	ICM Le	vel of S	ervice		F			
HCM Volume to Capaci			0.94									
Actuated Cycle Length (109.9			ost time	· · /		24.0			
Intersection Capacity Ut	ilizatior	ו	66.6%	10	CU Lev	el of Sei	rvice		С			
Analysis Period (min)			15									

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 18: Logan Ave & I-5	SB O	n-ram	0		Horizon Year Alt 1 without Improvements Timing Plan: PM Peak								
	۶	+	7	4	ł	*	<	1	1	1	ţ	1	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	×	ţ,		λ.	1×				۴				
Sign Control		Free			Free			Stop			Stop		
Grade		0%			0%			0%			0%		
Volume (veh/h)	933	527	8	0	158	73	0	0	16	0	0	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	1014	573	9	0	172	79	0	0	17	0	0	0	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type								None			None		
Median storage veh)													
Upstream signal (ft)		667											
pX, platoon unblocked		001											
vC, conflicting volume	251			582			2777	2857	577	2830	2821	211	
vC1, stage 1 conf vol	201			002			2	2007	011	2000	2021	211	
vC2, stage 2 conf vol													
vCu, unblocked vol	251			582			2777	2857	577	2830	2821	211	
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2	
tC, 2 stage (s)	4.1			4.1			1.1	0.5	0.2	1.1	0.5	0.2	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	23			100			100	100	97	100	100	100	
cM capacity (veh/h)	1314			993			4	4	516	4	4	829	
civi capacity (venini)	1014			333			-	-	510	-	-	023	
Direction, Lane #	EB 1	EB 2		WB 2	NB 1								
Volume Total	1014	582	0	251	17								
Volume Left	1014	0	0	0	0								
Volume Right	0	9	0	79	17								
cSH	1314	1700	1700	1700	516								
Volume to Capacity	0.77	0.34	0.00	0.15	0.03								
Queue Length 95th (ft)	207	0	0	0	3								
Control Delay (s)	16.3	0.0	0.0	0.0	12.2								
Lane LOS	С				В								
Approach Delay (s)	10.3		0.0		12.2								
Approach LOS					В								
Intersection Summary													
Average Delay			9.0										
Intersection Capacity Ut	ilization		71.1%	- 10	CU Lev	el of Sei	vice		С				
Analysis Period (min)			15										

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Synchro 6 Report 3/4/2011

Barrio Logan CPU	
19: National Ave & SR-75 Off-ramp	

Horizon Year Alt 1 without Improvements Timing Plan: PM Peak

メッチャンシイ

MovementEBLEBTWBTWBRSBLSBRLane ConfigurationsFreeFreeStopSign ControlFreeFreeStopGrade0%0%0%0%Volume (veh/h)03082600126238Peak Hour Factor0.920.920.920.920.920.92Hourly flow rate (vph)03352830137259PedestriansEare Width (ft)Eare Width (ft)Eare Width (ft)Eare Width (ft)Walking Speed (ft/s)Percent BlockageTWLTLMedian typeTWLTLImage: State	
Sign Control Free Free Stop Grade 0% 0% 0% Volume (veh/h) 0 308 260 0 126 238 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Hourly flow rate (vph) 0 335 283 0 137 259 Pedestrians	
Grade 0% 0% 0% Volume (veh/h) 0 308 260 0 126 238 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 Hourly flow rate (vph) 0 335 283 0 137 259 Pedestrians	
Volume (veh/h) 0 308 260 0 126 238 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 Hourly flow rate (vph) 0 335 283 0 137 259 Pedestrians 2 2 2 335 283 0 137 259 Lane Width (ft) 335 2 8 0 137 259 Percent Blockage Right turn flare (veh) 5 <td></td>	
Peak Hour Factor 0.92	
Hourly flow rate (vph) 0 335 283 0 137 259 Pedestrians	
Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type TWLTL Median storage veh) 1	
Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type TWLTL Median storage veh) 1	
Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type TWLTL Median storage veh) 1	
Percent Blockage Right turn flare (veh) Median type TWLTL Median storage veh) 1	
Right turn flare (veh) Median type TWLTL Median storage veh) 1	
Median type TWLTL Median storage veh) 1	
Median storage veh) 1	
Upstream signal (ft) 1100 875	
pX, platoon unblocked	
vC, conflicting volume 283 617 283	
vC1, stage 1 conf vol 283	
vC2, stage 2 conf vol 335	
vCu, unblocked vol 283 617 283	
tC, single (s) 4.1 6.4 6.2	
tC, 2 stage (s) 5.4	
tF (s) 2.2 3.5 3.3	
p0 queue free % 100 75 66	
cM capacity (veh/h) 1280 546 756	
Direction, Lane # EB 1 WB 1 SB 1 SB 2	
Volume Total 335 283 137 259	
Volume Left 0 0 137 0	
Volume Right 0 0 0 259	
cSH 1700 1700 546 756	
Volume to Capacity 0.20 0.17 0.25 0.34	
Queue Length 95th (ft) 0 0 25 38	
Control Delay (s) 0.0 0.0 13.8 12.2	
Lane LOS B B	
Approach Delay (s) 0.0 0.0 12.8	
Approach LOS B	
Intersection Summary	
Average Delay 5.0	
Intersection Capacity Utilization 35.1% ICU Level of Service	
Analysis Period (min) 15	

20: National Ave & Evans St Timing Plan: PM P	_
$\mathscr{I} \to \mathscr{I} \checkmark = \mathscr{I} \checkmark \land \land \land \land \checkmark \mathscr{I} \mathscr{I} $	∢_
Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT S	SBR
Lane Configurations	
Sign Control Free Free Stop Stop	
Grade 0% 0% 0% 0%	
Volume (veh/h) 37 390 36 32 192 23 13 18 62 45 22	72
Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	0.92
Hourly flow rate (vph) 40 424 39 35 209 25 14 20 67 49 24	78
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type None None	
Median storage veh)	
Upstream signal (ft) 1314 661	
pX, platoon unblocked	
vC, conflicting volume 234 463 892 827 443 872 834	221
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol 234 463 892 827 443 872 834	221
tC, single (s) 4.1 4.1 7.1 6.5 6.2 7.1 6.5	6.2
tC, 2 stage (s)	
tF(s) 2.2 2.2 3.5 4.0 3.3 3.5 4.0	3.3
p0 queue free % 97 97 93 93 89 78 92	90
cM capacity (veh/h) 1334 1098 212 288 614 218 285	818
Direction, Lane # EB 1 EB 2 WB 1 WB 2 NB 1 SB 1	
Volume Total 40 463 35 234 101 151	
Volume Left 40 0 35 0 14 49	
Volume Right 0 39 0 25 67 78	
cSH 1334 1700 1098 1700 414 374	
Volume to Capacity 0.03 0.27 0.03 0.14 0.24 0.40	
Queue Length 95th (ft) 2 0 2 0 24 48	
Control Delay (s) 7.8 0.0 8.4 0.0 16.5 21.0	
Lane LOS A A C C	
Approach Delay (s) 0.6 1.1 16.5 21.0	
Approach LOS C C	
Intersection Summary	
Average Delay 5.3	
Intersection Capacity Utilization 50.8% ICU Level of Service A	
Analysis Period (min) 15	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		_ 🕸			4			et.			1.	
Sign Control		Free			Free			Stop			Stop	
Grade	04	0%		07	0%	07	-	0%	00	00	0%	04
Volume (veh/h)	24	124	41	27	70	27	7	47	28	30	28	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	135	45	29	76	29	8	51	30	33	30	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked	405			470			007	070	457	445	004	04
vC, conflicting volume	105			179			397	373	157	415	381	91
vC1, stage 1 conf vol												
vC2, stage 2 conf vol	405			470			007	070	457	445	004	04
vCu, unblocked vol	105			179			397	373	157	415	381	91
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)	2.2			2.2			25	10	2.2	25	10	2.0
tF (s)							3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			99	90	97	93	94	98
cM capacity (veh/h)	1486			1396			511	536	888	477	531	967
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	205	135	89	86								
Volume Left	26	29	8	33								
Volume Right	45	29	30	23								
cSH	1486	1396	617	575								
Volume to Capacity	0.02	0.02	0.14	0.15								
Queue Length 95th (ft)	1	2	13	13								
Control Delay (s)	1.1	1.8	11.8	12.4								
Lane LOS	A	A	В	В								
Approach Delay (s)	1.1	1.8	11.8	12.4								
Approach LOS			В	В								
Intersection Summary												
Average Delay			5.0									
Intersection Capacity Ut	ilizatior	1	29.9%	10	CU Lev	el of Ser	vice		А			

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Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		\$	D		**		
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	12	270	239	62	75	16	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	13	293	260	67	82	17	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage veh)					NULLE		
Upstream signal (ft)		1318					
		1318					
pX, platoon unblocked	007				040	000	
vC, conflicting volume	327				613	293	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol	007				040		
vCu, unblocked vol	327				613	293	
tC, single (s)	4.1				6.4	6.2	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	99				82	98	
cM capacity (veh/h)	1232				451	746	
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	307	327	99				
Volume Left	13	0	82				
Volume Right	0	67	17				
cSH	1232	1700	485				
Volume to Capacity	0.01	0.19	0.20				
Queue Length 95th (ft)	1	0	19				
Control Delay (s)	0.4	0.0	14.3				
Lane LOS	A		В				
Approach Delay (s)	0.4	0.0	14.3				
Approach LOS			В				
Intersection Summary							
Average Delay			2.1				
Intersection Capacity Ut	ilization	1	35.8%	10		of Service	А
Analysis Period (min)		•	15				~

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	ţ,		×	1×			1			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	108	255	203	143	87	54	235	400	101	66	256	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	117	277	221	155	95	59	255	435	110	72	278	14
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	117	498	155	153	800	364						
Volume Left (vph)	117	0	155	0	255	72						
Volume Right (vph)	0	221	0	59	110	14						
Hadj (s)	0.53	-0.28	0.53	-0.23	0.02	0.05						
Departure Headway (s)	9.2	8.4	9.9	9.1	8.3	8.6						
Degree Utilization, x	0.30	1.16	0.43	0.39	1.84	0.87						
Capacity (veh/h)	387	433	347	384	440	405						
Control Delay (s)	14.9	121.7	18.9	16.6	408.1	47.1						
Approach Delay (s)	101.3		17.8		408.1	47.1						
Approach LOS	F		С		F	E						
Intersection Summary												
Delay			197.1									
HCM Level of Service			F									
Intersection Capacity Ut	ilization	1	05.2%	1	CU Lev	el of Ser	vice		G			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	۲	ţ.		μ,	T+			4.			1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98			1.00			0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.91			0.98			0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1760	1829		1753	1667			1817			1723	
Flt Permitted	0.64	1.00		0.67	1.00			0.98			0.80	
Satd. Flow (perm)	1187	1829		1238	1667			1782			1402	
Volume (vph)	162	111	12	21	70	100	13	185	30	123	86	107
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	121	13	23	76	109	14	201	33	134	93	116
RTOR Reduction (vph)	0	6	0	0	78	0	0	7	0	0	24	(
Lane Group Flow (vph)	176	128	0	23	107	0	0	241	0	0	319	(
Confl. Peds. (#/hr)	7		11	11		7	25		21	21		2
Confl. Bikes (#/hr)			3			3			6			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.9	11.9		11.9	11.9			22.0			22.0	
Effective Green, g (s)	11.9	11.9		11.9	11.9			22.0			22.0	
Actuated g/C Ratio	0.28	0.28		0.28	0.28			0.53			0.53	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	337	519		352	473			936			736	
v/s Ratio Prot		0.07			0.06							
v/s Ratio Perm	c0.15			0.02				0.14			c0.23	
v/c Ratio	0.52	0.25		0.07	0.23			0.26			0.43	
Uniform Delay, d1	12.6	11.5		10.9	11.5			5.5			6.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.5	0.2		0.1	0.2			0.1			0.4	
Delay (s)	14.1	11.8		11.0	11.7			5.6			6.5	
Level of Service	В	В		В	В			А			А	
Approach Delay (s)		13.1			11.6			5.6			6.5	
Approach LOS		В			В			A			A	
Intersection Summary												
HCM Average Control D	Delay		9.1	H	ICM Le	vel of S	ervice		A			
HCM Volume to Capacit			0.46									
Actuated Cycle Length (41.9	S	Sum of I	ost time	(s)		8.0			
									0			
Intersection Capacity Ut	ilization		68.7%		CU Lev	el of Sei	rvice		С			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			10			10	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	34	119	24	0	76	31	13	90	20	19	66	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	129	26	0	83	34	14	98	22	21	72	21
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	192	116	134	113								
Volume Left (vph)	37	0	14	21								
Volume Right (vph)	26	34	22	21								
Hadj (s)	-0.01	-0.14	-0.04	-0.04								
Departure Headway (s)	4.6	4.6	4.8	4.8								
Degree Utilization, x	0.25	0.15	0.18	0.15								
Capacity (veh/h)	726	724	706	695								
Control Delay (s)	9.2	8.4	8.8	8.6								
Approach Delay (s)	9.2	8.4	8.8	8.6								
Approach LOS	A	А	А	А								
Intersection Summary												
Delay			8.8									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	ı	32.5%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 26: Main St & Samp	son S	t				Hori	zon Ye	ear Alt	1 with		prover lan: PN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		÷.			4			10			10	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	118	142	33	27	83	8	60	46	49	8	27	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	154	36	29	90	9	65	50	53	9	29	92
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	318	128	168	130								
Volume Left (vph)	128	29	65	9								
Volume Right (vph)	36	9	53	92								
Hadj (s)	0.05	0.04	-0.08	-0.38								
Departure Headway (s)	4.9	5.2	5.2	4.9								
Degree Utilization, x	0.43	0.18	0.24	0.18								
Capacity (veh/h)	693	638	627	654								
Control Delay (s)	11.6	9.3	9.8	9.0								
Approach Delay (s)	11.6	9.3	9.8	9.0								
Approach LOS	В	A	А	A								
Intersection Summary												
Delay			10.4									
HCM Level of Service			В									
Intersection Capacity Ut	ilizatior	۱	45.7%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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27: Harbor Dr & Sar	npson	St				Tion	2011 1	ear Ait			Plan: PN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	仲孙		14	41+			et.			1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.97			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3469		1770	3443			1780			1776	
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.77	
Satd. Flow (perm)	1770	3469		1770	3443			1697			1396	
Volume (vph)	56	1500	5	19	488	62	23	111	41	58	66	26
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	1630	5	21	530	67	25	121	45	63	72	28
RTOR Reduction (vph)	0	0	0	0	7	0	0	8	0	0	5	0
Lane Group Flow (vph)	61	1635	0	21	590	0	0	183	0	0	158	0
Confl. Peds. (#/hr)	01	1000	15	21	000	29	7	100	4	4	100	7
Confl. Bikes (#/hr)			12			20			7			7
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	470	2 /0	Prot	2 /0	2 /0	Perm	2 /0	2 /0	Perm	2 /0	2 /0
Protected Phases		14 2 6			1826		Feilii	12		Feilii	16 1 5	
Permitted Phases	3	14 2 0		13	1020		12	12		16 1 5	1015	
	5.1	49.5		1.2	45.6		12	16.2		10 1 5	29.0	
Actuated Green, G (s)	5.1	49.5		1.2	45.6			16.2			29.0	
Effective Green, g (s)	0.05	49.5 0.48		0.01	45.6			0.16			0.28	
Actuated g/C Ratio	4.0	0.40		4.0	0.44			4.0			0.20	
Clearance Time (s)												
Vehicle Extension (s)	3.0	1050		3.0	4544			3.0			000	
Lane Grp Cap (vph)	87	1656		20	1514			265			390	
v/s Ratio Prot	c0.03	c0.47		0.01	0.17			0.44			0.11	_
v/s Ratio Perm	0 70			4.05				c0.11			c0.11	
v/c Ratio	0.70	0.99		1.05	0.39			0.69			0.41	
Uniform Delay, d1	48.5	26.8		51.2	19.6			41.4			30.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.05	
Incremental Delay, d2	22.5	19.0		217.8	0.2			7.6			0.7	
Delay (s)	71.0	45.7		269.0	19.8			49.0			32.5	
Level of Service	E	D		F	В			D			С	
Approach Delay (s)		46.7			28.3			49.0			32.5	
Approach LOS		D			С			D			С	
Intersection Summary												
HCM Average Control E	Delay		41.7	F	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci	ty ratio		0.83									
Actuated Cycle Length (103.7	S	Sum of I	ost time	(s)		24.0			
Intersection Capacity Ut	ilizatior	ı	73.8%	10	CU Lev	el of Sei	vice		D			
Analysis Period (min)			15									
o Critical Lana Group												

Horizon Year Alt 1 without Improvements

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c Critical Lane Group

Barrio Logan CPU

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Barrio Logan CPU 28: National Ave & S	Sicard	St				Hori	zon Ye	ear Alt			prover Plan: PN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Т.			4			de.			4.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	40	169	38	8	125	1	33	46	17	4	18	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	184	41	9	136	1	36	50	18	4	20	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		641										
pX, platoon unblocked												
vC, conflicting volume	137			225			501	446	204	468	466	136
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	137			225			501	446	204	468	466	136
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			92	90	98	99	96	95
cM capacity (veh/h)	1447			1344			430	489	836	443	476	912
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	43	225	146	104	70							
Volume Left	43	0	9	36	4							
Volume Right	0	41	1	18	46							
cSH	1447	1700	1344	502	689							
Volume to Capacity	0.03	0.13	0.01	0.21	0.10							
Queue Length 95th (ft)	2	0	0	19	8							
Control Delay (s)	7.6	0.0	0.5	14.0	10.8							
Lane LOS	A		A	В	В							
Approach Delay (s)	1.2		0.5	14.0	10.8							
Approach LOS				В	В							
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Ut	ilization		36.2%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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29: National Ave & 2	2011 3									inning i	lan: PN	T Cak
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ĥ		ž	Þ			40			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	33	156	65	35	124	55	46	60	34	90	68	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	170	71	38	135	60	50	65	37	98	74	25
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						(
Volume Total (vph)	36	240	38	195	152	197						
Volume Left (vph)	36	0	38	0	50	98						
Volume Right (vph)	0	71	0	60	37	25						
Hadj (s)	0.53	-0.17	0.53	-0.18	-0.05	0.06						
Departure Headway (s)	6.4	5.7	6.5	5.7	5.6	5.6						
Degree Utilization, x	0.06	0.38	0.07	0.31	0.24	0.30						
Capacity (veh/h)	529	599	521	589	580	592						
Control Delay (s)	8.6	10.9	8.7	10.1	10.3	11.0						
Approach Delay (s)	10.6		9.9		10.3	11.0						
Approach LOS	В		A		В	В						
Intersection Summary												
Delay			10.4									
HCM Level of Service			В									
Intersection Capacity Ut	ilization	l.	41.9%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

		\mathbf{r}	-	+	•	/	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	Te-	LDIX	WDL	41	NDL	74	
Sign Control	Free			Free	Stop	1.	
Grade	0%			0%	0%		
Volume (veh/h)	368	23	31	234	94	296	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	400	25	34	254	102	322	
Pedestrians					36		
Lane Width (ft)					12.0		
Walking Speed (ft/s)					4.0		
Percent Blockage					3		
Right turn flare (veh)							
Median type					None		
Median storage veh)							
Upstream signal (ft)				670			
pX, platoon unblocked							
vC, conflicting volume			461		643	448	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			461		643	448	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)					0.5		
tF (s)			2.2		3.5	3.3	
p0 queue free %			97		73	41	
cM capacity (veh/h)			1064		381	541	
Direction, Lane #	EB 1		WB 2	NB 1	NB 2		
Volume Total	425	118	170	102	322		
Volume Left	0	34	0	102	0		
Volume Right	25	0	0	0	322		
cSH	1700	1064	1700	381	541		
Volume to Capacity	0.25	0.03	0.10	0.27	0.59		
Queue Length 95th (ft)	0	2	0	27	96		
Control Delay (s)	0.0	2.6	0.0	17.9	20.9		
Lane LOS	0.0	A		C	С		
Approach Delay (s)	0.0	1.1		20.2			
Approach LOS				С			
Intersection Summary							
Average Delay			7.8				
Intersection Capacity Ut Analysis Period (min)	ilizatior	1 I	45.9%	10	CU Leve	el of Service	A

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Barrio Logan CPU 31: Main St & 26th S	St					Hori	zon Ye	ear Alt	1 with T		prover Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$)r	ţ.	1		4	P ^r		1.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	14	180	16	49	50	29	7	61	200	28	12	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	196	17	53	54	32	8	66	217	30	13	9
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1					
Volume Total (vph)	228	53	54	32	74	217	52					
Volume Left (vph)	15	53	0	0	8	0	30					
Volume Right (vph)	17	0	0	32	0	217	9					
Hadj (s)	0.00	1.10	0.03	-0.67	0.05	-0.41	0.05					
Departure Headway (s)	4.5	6.1	5.0	3.2	4.8	3.2	4.9					
Degree Utilization, x	0.28	0.09	0.08	0.03	0.10	0.19	0.07					
Capacity (veh/h)	783	566	684	1121	693	1121	686					
Control Delay (s)	9.2	8.5	7.3	5.1	8.4	7.0	8.2					
Approach Delay (s)	9.2	7.2			7.3		8.2					
Approach LOS	Α	A			A		А					
Intersection Summary												
Delay			8.0									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	ı	38.5%	10	CU Lev	el of Sei	rvice		А			
Analysis Period (min)			15									

Barrio Logan CPU 32: Harbor Dr & Sch	iley St	t				-					prover Plan: PN	
	≯	+	*	4	Ļ	•	•	1	*	1	Ļ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	×	仲弘			41.						**	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0						4.0	
Lane Util. Factor	1.00	0.95			0.95						1.00	
Frpb, ped/bikes	1.00	1.00			1.00						0.98	
Flpb, ped/bikes	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			0.99						0.90	
Flt Protected	0.95	1.00			1.00						0.99	
Satd. Flow (prot)	1543	3539			3504						1510	
Flt Permitted	0.95	1.00			1.00						0.99	
Satd. Flow (perm)	1543	3539			3504						1510	
Volume (vph)	203	1400	0	0	538	39	0	0	0	16	10	7
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	221	1522	0	0	585	42	0.02	0.02	0	17	11	82
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	67	(
Lane Group Flow (vph)	221	1522	0	0	623	0	0	0	0	0	43	(
Confl. Peds. (#/hr)			8	8	020	· ·	Ű	Ŭ	2	2		
Confl. Bikes (#/hr)			Ū	Ŭ					4	-		ç
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot	2 /0	2 /0	2 /0	2 /0	2 /0	2 /0	2 /0	2 /0	Perm	770	10 /
Protected Phases		1826			14 2 6					1 enn	11 1 5	
Permitted Phases	15	10 2 0			14 2 0					11 1 5	1115	
Actuated Green, G (s)	9.4	49.4			32.0					1115	15.2	
Effective Green, g (s)	9.4	49.4			32.0						15.2	
Actuated g/C Ratio	0.12	0.61			0.40						0.19	
Clearance Time (s)	4.0	0.01			0.40						0.19	
	3.0											
Vehicle Extension (s)		0.400			1001						005	
Lane Grp Cap (vph)	180	2169			1391						285	
v/s Ratio Prot	c0.14	c0.43			0.18						0.00	
v/s Ratio Perm	1.00	0.70			0.45						0.03	
v/c Ratio	1.23	0.70			0.45						0.15	
Uniform Delay, d1	35.6	10.6			17.8						27.3	
Progression Factor	1.00	1.00			1.00						1.10	
Incremental Delay, d2	141.5	1.0			0.2						0.2	
Delay (s)	177.1	11.6			18.1						30.3	
Level of Service	F	В			В						С	
Approach Delay (s)		32.6			18.1			0.0			30.3	
Approach LOS		С			В			Α			С	
Intersection Summary												
HCM Average Control E	Delay		28.8	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.65									
Actuated Cycle Length (80.6			ost time			20.0			
Intersection Capacity Ut	ilizatior	ı	58.1%	10	CU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	ተቀ	1	14	To			ন	P		44.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	0.95			1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.98	
Satd. Flow (prot)	1770	3539	1583	1597	1762			1762	1509		1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.90	1.00		0.78	
Satd. Flow (perm)	1770	3539	1583	1597	1762			1591	1509		1350	
Volume (vph)	94	612	85	463	427	240	18	98	168	199	210	102
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	665	92	503	464	261	20	107	183	216	228	11
RTOR Reduction (vph)	0	0	69	0	14	0	0	0	108	0	6	(
Lane Group Flow (vph)	102	665	23	503	711	0	0	127	75	0	549	(
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)	9.0	30.2	30.2	46.0	67.2			61.0	61.0		61.0	
Effective Green, g (s)	9.0	30.2	30.2	46.0	67.2			61.0	61.0		61.0	
Actuated g/C Ratio	0.06	0.20	0.20	0.31	0.45			0.41	0.41		0.41	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	107	716	320	492	794			650	617		552	
v/s Ratio Prot	0.06	0.19	020	c0.31	c0.40			000	011		002	
v/s Ratio Perm	0.00	0.10	0.01	00.01	00.10			0.08	0.05		c0.41	
v/c Ratio	0.95	0.93	0.07	1.02	0.90			0.20	0.12		0.99	
Uniform Delay, d1	69.9	58.4	48.1	51.6	37.8			28.3	27.4		43.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	71.6	18.2	0.1	46.4	12.6			0.1	0.1		36.7	
Delay (s)	141.5	76.7	48.2	98.0	50.4			28.5	27.5		80.7	
Level of Service	F	E	D	50.0	D			20.0 C	C		F	
Approach Delay (s)	•	81.3		•	69.9			27.9	Ŭ		80.7	
Approach LOS		F			E			C			F	
Intersection Summary												
HCM Average Control E	Delay		70.8	H	ICM Le	vel of S	ervice		E			
HCM Volume to Capaci			0.97						-			
Actuated Cycle Length			149.2	5	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut			87.5%			el of Se			E			
Analysis Period (min)			15						_			

Lane Configurations 1	ar Alt	ar Alt			prover Plan: PN	
Lane Configurations11111Ideal Flow (vphpl)1900190019001900190019001900Total Lost time (s)4.04.04.04.04.04.0Lane Util. Factor1.000.931.000.921.00Frt1.000.951.000.921.00Fit Protected0.951.000.951.000.95Satd. Flow (prot)16871650168716431770Fit Permitted0.651.000.361.000.95Satd. Flow (perm)1152165063416431770Volume (vph)32018016060707050Peak-hour factor, PHF0.920.920.920.920.920.92Adj. Flow (vph)34819617465767654RTOR Reduction (vph)046005000Leavy Vehicles (%)7%7%7%7%7%7%2%Turn TypePermPermProtected Phases485Permitted Phases4855120.553.03.03.0Line Group G(pt)3925612165598344Actuated Green, G (s)24.824.824.824.83.44Actuated g/C Ratio0.340.340.340.055	t	Ť	*	1	ţ	~
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	NBT	NBT	NBR	SBL	SBT	SBR
Total Lost time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 Frt 1.00 0.93 1.00 0.92 1.00 Fit Protected 0.95 1.00 0.95 1.00 0.95 Satd. Flow (prot) 1687 1650 1687 1643 1770 5 Satd. Flow (perm) 1152 1650 634 1643 1770 5 Volume (vph) 320 180 160 60 70 70 50 Peak-hour factor, PHF 0.92 0	44	44	٣	7	41.	
Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 Frt 1.00 0.93 1.00 0.92 1.00 Fit Protected 0.95 1.00 0.95 1.00 0.95 Stdt. Flow (prot) 1687 16650 1687 1643 1770 3 Stdt. Flow (perm) 1152 1650 6344 1643 1770 3 Volume (vph) 320 180 160 60 70 70 50 Peak-hour factor, PHF 0.92<	1900	1900	1900	1900	1900	1900
Frt 1.00 0.93 1.00 0.92 1.00 Fit Protected 0.95 1.00 0.95 1.00 0.95 Satd. Flow (prot) 1687 1650 1687 1643 1770 2 Fit Permitted 0.65 1.00 0.36 1.00 0.95 Satd. Flow (perm) 1152 1650 634 1643 1770 2 Volume (vph) 320 180 160 60 70 70 50 Peak-hour factor, PHF 0.92	4.0	4.0	4.0	4.0	4.0	
Fit Protected 0.95 1.00 0.95 1.00 0.95 Satd. Flow (prot) 1687 1650 1687 1643 1770 2 Fit Permitted 0.65 1.00 0.36 1.00 0.95 Satd. Flow (perm) 1152 1650 634 1643 1770 2 Volume (vph) 320 180 160 60 70 70 50 Peak-hour factor, PHF 0.92	0.95	0.95	1.00	1.00	0.95	
Satd. Flow (prot) 1687 1650 1687 1643 1770 Satd. Flow (perm) 1152 1650 634 1663 1770 Satd. Flow (perm) 1152 1650 634 1663 1770 Satd. Flow (perm) 348 196 174 65 76 76 54 76 76 54 76 76 54 76 76 54 76 76 54 76 76 77	1.00		0.85	1.00	0.97	
Fit Permitted 0.65 1.00 0.36 1.00 0.95 Satd. Flow (perm) 1152 1650 634 1643 1770 3 Volume (vph) 320 180 160 60 70 70 50 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 348 196 174 65 76 76 54 76 RTOR Reduction (vph) 0 46 0 0 50 0 0 Lane Group Flow (vph) 348 324 0 65 102 0 54 7 Heavy Vehicles (%) 7% 7% 7% 7% 7% 7% 7% 2% Turn Type Perm Perm Permited Phases 4 8 5 5 Permitted Phases 4 8 24.8 24.8 3.4 Actuated g/C Ratio 0.34 0.34 0.34 0.05 0.05 0.05 0.05 0.05 0.06 0.03	1.00		1.00	0.95	1.00	
Satd. Flow (perm) 1152 1650 634 1643 1770 2 Volume (vph) 320 180 160 60 70 70 50 70 76 77	3539		1583	1770	3425	
Volume (vph) 320 180 160 60 70 70 50 Peak-hour factor, PHF 0.92 1.92 16 160 174 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76	1.00		1.00	0.95	1.00	
Peak-hour factor, PHF 0.92 0.02 0.06 0.03 Lane Group Imme (s) 4.0	3539		1583	1770	3425	
Adj. Flow (vph) 348 196 174 65 76 76 54 RTOR Reduction (vph) 0 46 0 0 50 0 0 Lane Group Flow (vph) 348 324 0 65 102 0 54 Heavy Vehicles (%) 7% 7% 7% 7% 7% 7% 2% Turn Type Perm Perm Perm Prot Prot Protected Phases 4 8 5 Actuated Green, G (s) 24.8 24.8 24.8 3.4 Actuated g/C Ratio 0.34 0.34 0.34 0.34 0.05 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 392 551 216 559 83 7/5 V/s Ratio Perm 0.30 0.010 0.06 0.03 0.18 0.655 Uniform Delay, d1 22.7 19.8 17.7 <	1050		200	330	980	270
RTOR Reduction (vph) 0 46 0 0 50 0 0 Lane Group Flow (vph) 348 324 0 65 102 0 54 Heavy Vehicles (%) 7% 7% 7% 7% 7% 7% 7% 2% Turn Type Perm Perm Perm Protected Phases 4 8 5 Permitted Phases 4 8 4 8 5 Permitted Phases 4 8 4 8 3.4 Actuated Green, G (s) 24.8 24.8 24.8 24.8 3.4 Effective Green, g (s) 24.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grop Cap (vph) 392 561 216 559 83 4/s v/s Ratio Port 0.20 0.06 0.03 0/s 8.0.2 16.8	0.92		0.92	0.92	0.92	0.92
Lane Group Flow (vph) 348 324 0 65 102 0 54 Heavy Vehicles (%) 7% 7% 7% 7% 7% 7% 7% 2% Turn Type Perm Perm Perm Prot Prot Protected Phases 4 8 5 5 Permitted Phases 4 8 5 5 Actuated Green, G (s) 24.8 24.8 24.8 3.4 Actuated gC Ratio 0.34 0.34 0.34 0.05 6 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vis Ratio Prot 0.20 0.06 0.03 v/s Ratio Prot 0.20 0.06 0.03 V/s Ratio Prot 0.20 0.06 0.03 v/s Ratio Prot 0.20 0.06 0.03 V/s Ratio Prot 0.20 0.06 0.03 v/s Ratio 0.40 1.00 1.00 1.00 1.00 1.00 1.00 <td< td=""><td>1141</td><td></td><td>217</td><td>359</td><td>1065</td><td>293</td></td<>	1141		217	359	1065	293
Heavy Vehicles (%) 7%	0	-	143	0	28	0
Turn Type Perm Perm Prot Protected Phases 4 8 5 Permitted Phases 4 8 5 Actuated Phases 4 8 5 Actuated Green, G (s) 24.8 24.8 24.8 3.4 Actuated Green, G (s) 24.8 24.8 24.8 3.4 Actuated g/C Ratio 0.34 0.34 0.34 0.34 0.05 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0<	1141		74	359	1330	0
Protected Phases 4 8 5 Permitted Phases 4 8 7 Actuated Green, G (s) 24.8 24.8 24.8 24.8 3.4 Actuated Green, G (s) 24.8 24.8 24.8 24.8 3.4 Actuated g/C Ratio 0.34 0.34 0.34 0.34 0.05 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Lane Grp Cap (vph) 392 561 216 559 83 v/s Ratio Prot 0.20 0.06 0.03 0.03 v/s Ratio Perm c0.30 0.10 0.06 0.03 v/s Ratio Perm c0.30 0.10 0.06 0.03 v/s Ratio Perm c0.30 0.10 0.00 1.00 Inform Delay, d1 22.7 19.8 17.7 16.9 34.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 1.5 0.8	2%	2%	2%	2%	2%	2%
Permitted Phases 4 8 Actuated Green, G (s) 24.8 24.8 24.8 24.8 3.4 Effective Green, g (s) 24.8 24.8 24.8 24.8 3.4 Actuated g/C Ratio 0.34 0.34 0.34 0.34 0.34 0.05 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 392 561 216 559 83 v/s Ratio Prot 0.20 0.06 0.03 v/s Ratio Perm c0.30 v/c Ratio 0.89 0.58 0.30 0.18 0.65 Uniform Delay, d1 22.7 19.8 17.7 16.9 34.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 1.5 0.8 0.2 16.8 Delay (s) 43.5 21.2 18.5 17.1 51.0	_		Perm	Prot		
Actuated Green, G (s) 24.8 24.8 24.8 24.8 3.4 Effective Green, g (s) 24.8 24.8 24.8 24.8 3.4 Actuated g/C Ratio 0.34 0.34 0.34 0.34 0.05 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 392 561 216 559 83 7 v/s Ratio Prot 0.20 0.06 0.03 7 7 8 3.4 V/s Ratio Prot 0.20 0.06 0.03 7 7 8 3.4 3.4 V/s Ratio Prot 0.20 0.06 0.03 7 7 8 3.4 3.4 Uniform Delay, d1 22.7 19.8 17.7 16.9 34.2 34.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 1.5 0.8 0.2 16.8 24.8 D <	2	2	-	1	6	
Effective Green, g (s) 24.8 24.8 24.8 24.8 3.4 Actuated g/C Ratio 0.34 0.34 0.34 0.34 0.34 0.05 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 392 561 216 559 83 7 v/s Ratio Prot 0.20 0.06 0.03 7	05.0	05.0	2		00.7	
Actuated g/C Ratio 0.34 0.34 0.34 0.34 0.05 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 392 561 216 559 83 7 v/s Ratio Prot 0.20 0.06 0.03 0.03 0.03 0.03 0.03 0.05 v/s Ratio Perm c0.30 0.10 0.06 0.03 0.18 0.65 Uniform Delay, d1 22.7 19.8 17.7 16.9 34.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 1.5 0.8 0.2 16.8 Delay (s) 43.5 21.2 18.5 17.1 15.0 Level of Service D C B B D Approach LOS C B B <t< td=""><td>25.0 25.0</td><td></td><td>25.0 25.0</td><td>11.1</td><td>32.7 32.7</td><td></td></t<>	25.0 25.0		25.0 25.0	11.1	32.7 32.7	
Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 392 561 216 559 83 - v/s Ratio Prot 0.20 0.06 0.03 -	25.0		25.0	0.15	32.7 0.45	
Vehicle Extension (s) 3.0	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph) 392 561 216 559 83 v/s Ratio Prot 0.20 0.06 0.03 v/s Ratio Perm c0.30 0.10 v/c v/c Ratio 0.89 0.58 0.30 0.18 0.65 Uniform Delay, d1 22.7 19.8 17.7 16.9 34.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 1.5 0.8 0.2 16.8 Delay (s) 43.5 21.2 18.5 17.1 51.0 Level of Service D C B B D Approach Delay (s) 32.0 17.5 Approach LOS C B	3.0		3.0	3.0	3.0	
v/s Ratio Prot 0.20 0.06 0.03 v/s Ratio Perm c0.30 0.10 0.00 v/c Ratio 0.89 0.58 0.30 0.18 0.65 Uniform Delay, d1 22.7 19.8 17.7 16.9 34.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 1.5 0.8 0.2 16.8 Delay (s) 43.5 21.2 18.5 17.1 51.0 Level of Service D C B B D Approach Delay (s) 32.0 17.5 4	1214		543	270	1536	
v/s Ratio Perm c0.30 0.10 v/c Ratio 0.89 0.58 0.30 0.18 0.65 Uniform Delay, d1 22.7 19.8 17.7 16.9 34.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 1.5 0.8 0.2 16.8 Delay (s) 43.5 21.2 18.5 17.1 51.0 Level of Service D C B B D Approach Delay (s) 32.0 17.5 32.0 17.5	0.32		545	c0.20	c0.39	
v/c Ratio 0.89 0.58 0.30 0.18 0.65 Uniform Delay, d1 22.7 19.8 17.7 16.9 34.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 1.5 0.8 0.2 16.8 Delay (s) 43.5 21.2 18.5 17.1 51.0 Level of Service D C B B D Approach Delay (s) 32.0 17.5 32.0 17.5	0.52	0.52	0.05	0.20	0.59	
Uniform Delay, d1 22.7 19.8 17.7 16.9 34.2 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 1.5 0.8 0.2 16.8 Delay (s) 43.5 21.2 18.5 17.1 51.0 Level of Service D C B B D Approach Delay (s) 32.0 17.5 Approach LOS C B	0.94	0.94	0.03	1.33	0.87	
Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 20.8 1.5 0.8 0.2 16.8 Delay (s) 43.5 21.2 18.5 17.1 51.0 Level of Service D C B B D Approach Delay (s) 32.0 17.5 Approach LOS C B	23.2		16.5	30.9	18.1	
Incremental Delay, d2 20.8 1.5 0.8 0.2 16.8 Delay (s) 43.5 21.2 18.5 17.1 51.0 Level of Service D C B B D Approach Delay (s) 32.0 17.5 32.0 17.5 Approach LOS C B B 20.0 17.5	1.00		1.00	1.00	1.00	
Delay (s) 43.5 21.2 18.5 17.1 51.0 Level of Service D C B B D Approach Delay (s) 32.0 17.5 Approach LOS C B D	14.9		0.5	171.6	6.8	
Level of Service D C B B D Approach Delay (s) 32.0 17.5 Approach LOS C B	38.2		17.0	202.5	24.9	
Approach LOS C B	D		B	F	C	
Approach LOS C B	35.4	35.4			62.0	
Intersection Summary	D				E	
HCM Average Control Delay 45.1 HCM Level of Service			D			
HCM Volume to Capacity ratio 0.93						
Actuated Cycle Length (s) 72.9 Sum of lost time (s)			8.0			
Intersection Capacity Utilization 86.3% ICU Level of Service			E			
Analysis Period (min) 15						

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Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 PM no Improvements.sy7

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Synchro 6 Report 3/4/2011

Barrio Logan CPU 35: Main St & 28th S	St					Hori	zon Ye	ear Alt			prover Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	仲孙		76	† I>		45	个门		7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.97		1.00	0.87	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.93		1.00	0.96		1.00	0.92	_
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1737	3501		1764	3220		1736	3234		1736	2700	_
Flt Permitted	0.34	1.00		0.30	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	627	3501		560	3220		1736	3234		1736	2700	
Volume (vph)	270	600	40	150	290	280	65	500	180	280	500	550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	652	43	163	315	304	71	543	196	304	543	598
RTOR Reduction (vph)	0	5	0	0	170	0	0	41	0	0	212	0
Lane Group Flow (vph)	293	690	0	163	449	0	71	698	0	304	929	0
Confl. Peds. (#/hr)	27		12	12		27			88			200
Confl. Bikes (#/hr)			8			3						6
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	4%	4%	4%	4%	4%	11%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	39.0	39.0		39.0	39.0		4.0	22.6		15.0	33.6	_
Effective Green, g (s)	39.0	39.0		39.0	39.0		4.0	22.6		15.0	33.6	
Actuated g/C Ratio	0.44	0.44		0.44	0.44		0.05	0.26		0.17	0.38	_
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	276	1541		247	1417		78	825		294	1024	
v/s Ratio Prot	- ·-	0.20			0.14		0.04	0.22		c0.18	c0.34	_
v/s Ratio Perm	c0.47			0.29								
v/c Ratio	1.06	0.45		0.66	0.32		0.91	0.85			0.95dr	_
Uniform Delay, d1	24.8	17.3		19.6	16.1		42.1	31.3		36.8	26.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	71.4	0.2		6.2	0.1		72.0	8.0		61.6	11.4	
Delay (s)	96.2	17.5		25.8	16.3		114.1	39.3		98.4	37.4	_
Level of Service	F	B		С	B		F	D		F	D	
Approach Delay (s)		40.8			18.3			45.9			50.2	_
Approach LOS		D			В			D			D	
Intersection Summary												
HCM Average Control E			40.8	H	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci			0.99									
Actuated Cycle Length (88.6			ost time			8.0			
Intersection Capacity Ut	ilization		90.2%	10	CU Lev	el of Sei	rvice		E			
Analysis Period (min)			15									
dr Defacto Right Lane	. Reco	de with	1 thoug	h lane a	is a righ	it lane.						
c Critical Lane Group												

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EDI	EDT					NDI			CDI		CDI
						INDL		NDK			SBF
						1000		1000			190
						1900		1900			
											4.
											0.9
											1.0
											0.8
											1.0
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											1.0
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						10		•			
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315	1217		15	515		0	157	0	275	287	
					80						
001	00/		50/	50/	=0/	40/	40/		40/	40/	
							4%	4%		4%	49
		ustom									Peri
11	1626		15	1226		14	14		1 13 5		
											151
											28
											28
	0.36			0.26					0.22	0.22	0.2
		405									34
c0.18	c0.36		0.01	0.15			c0.09		0.17	c0.17	
											0.0
											0.0
											38
											1.2
355.1	27.3	0.0	159.7	0.9	0.2		1.8		8.0	9.7	0.
	68.7	31.0	223.3	42.5	28.6		51.2		51.5	53.6	47
412.5					С		D		D	D	
412.5 F	E	С	F	D	•						
	E 139.3	С	F	40.7	Ŭ		51.2			52.4	
	E	С	F		U		51.2 D			52.4 D	
	E 139.3	C	F	40.7							
	E 139.3	C 92.2		40.7 D	vel of Se	ervice		F			
F	E 139.3			40.7 D		ervice		F			
F	E 139.3	92.2	ŀ	40.7 D ICM Le				F 28.0			
	EBL 19900 4.0 1.000 1.000 0.955 17033 2900 0.92 3155 0 3155 6% Prot 111 13.7 13.7 0.111 4.00 .0 1811 co.18	EBL EBT 1900 1900 4.0 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1703 3406 0.95 1.00 1703 3406 290 1120 0.92 0.92 315 1217 0 0 0 0 0.11 16 2 6 13.7 45.7 13.7 45.7 0.11 0.36 4.0 3.0 181 1210 c0.18 c0.36 1.74 1.01 57.4 41.4 1.00 1.00	EBL EBT EBR 1900 1900 1900 4.0 4.0 4.0 1.00 0.95 1.00 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 3406 1322 0.95 1.00 1.00 1703 3406 1322 290 1120 2 0.92 0.92 0.92 0.120 2 0.92 0.1217 1 10 1315 1217 1 1315 1217 1 1315 1217 1 1315 1217 1 1317 45.7 39.4 13.7 45.7 39.4 13.7	EBL EBT EBR WBL 1900 1900 1900 1900 1900 1900 1900 1900 100 0.01 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 0.87 1.00 1.00 1.00 0.87 1.00 1.00 1.00 0.85 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 0.95 1.00 1.00 1.00 0.95 1.00 1.00 1.00 0.95 1.00 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1703 3406 1322 1719 0.95 0.01 1.00 0.95 1703 3406 1322 1719 0.92 0.92 0.92 0.92 315 1217 1 15	EBL EBT EBR WBL WBT 1900 1900 1900 1900 1900 1900 4.0 4.0 4.0 4.0 4.0 4.0 1000 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.03 3406 1322 1719 3438 0.92 0.92 0.92 0.92 0.92 15 1217 1 15 515 0 0 1 0 1.0 0 1 15	EBL EBT EBR WBL WBT WBR 1900 1900 1900 1900 1900 1900 4.0 4.0 4.0 4.0 4.0 4.0 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.03 3406 1322 1719 3438 1437 0.92 0.92 0.92 0.92 0.92 0.92 120 1 14 74 278 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	EBL EBT EBR WBL WBT WBR NBL 1900 1900 1900 1900 1900 1900 1900 4.0 4.0 4.0 4.0 4.0 4.0 4.0 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.00 0.87 1.00 1.00 0.93 1.00 1.00 1.00 0.085 1.00 1.00 0.93 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.03 3406 1322 1719 3438 1437 290 1120 2 14 474 278 10 0.92 0.92 0.92 0.92 0.92 0.92 0.92 133 0 15 1217 1 15 515 109 0	EBL EBT EBR WBL WBT WBR NBL NBT 1900 1900 1900 1900 1900 1900 1900 1900 4.0 4.0 4.0 4.0 4.0 4.0 4.0 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.00 0.87 1.00 1.00 0.93 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 0.95 0.01 1.	EBL EBT EBR WBL WBT WBR NBL NBT NBR 1900 100	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL 1900 100 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT 1900 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		đ,			4			4.				
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	559	153	27	20	83	118	9	72	45	0	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Hourly flow rate (vph)	608	166	29	22	90	128	10	78	49	0	0	
Pedestrians	000		20			.20				Ū	U U	
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		657										
pX, platoon unblocked		001										
C, conflicting volume	218			196			1594	1658	181	1682	1609	15
vC1, stage 1 conf vol	2.0											
vC2, stage 2 conf vol												
vCu, unblocked vol	218			196			1594	1658	181	1682	1609	15
tC, single (s)	4.2			4.2			7.1	6.6	6.2	7.1	6.5	6.
tC, 2 stage (s)								0.0	0.2		0.0	0
tF (s)	2.3			2.3			3.5	4.1	3.3	3.5	4.0	3.
p0 queue free %	54			98			82	0	94	0	100	10
cM capacity (veh/h)	1322			1348			55	48	862	0	56	89
		WB 1							002			
Direction, Lane #	EB 1		NB 1									
Volume Total	803	240	137									
Volume Left	608	22	10									
Volume Right	29	128	49									
cSH	1322	1348	74									
Volume to Capacity	0.46	0.02	1.85									
Queue Length 95th (ft)	62	1	303									
Control Delay (s)	8.8	0.8 A	523.6 F									
Lane LOS	A											
Approach Delay (s)	8.8	0.8	523.6									
Approach LOS			F									
ntersection Summary												
Average Delay			66.9									
Intersection Capacity Ut	ilizatior	1	70.4%	10	CU Lev	el of Ser	rvice		С			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	۲	仲弘		λ.	4 1>		łr	4	p#	7	T.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3292		1703	3273		1770	1863	1552	1770	1677	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3292		1703	3273		1770	1863	1552	1770	1677	
Volume (vph)	70	653	166	207	353	102	226	112	307	123	61	73
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	710	180	225	384	111	246	122	334	134	66	79
RTOR Reduction (vph)	0	23	0	0	26	0	0	0	249	0	55	0
Lane Group Flow (vph)	76	867	0	225	469	0	246	122	85	134	90	0
Confl. Peds. (#/hr)			1			2			1			17
Confl. Bikes (#/hr)			4			1			7			5
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	6.6	25.0		12.1	30.5		13.1	18.0	18.0	8.8	13.7	
Effective Green, g (s)	6.6	25.0		12.1	30.5		13.1	18.0	18.0	8.8	13.7	
Actuated g/C Ratio	0.08	0.31		0.15	0.38		0.16	0.23	0.23	0.11	0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	141	1030		258	1249		290	420	350	195	288	
v/s Ratio Prot	0.04	c0.26		c0.13	0.14		c0.14	c0.07		0.08	0.05	
v/s Ratio Perm									0.05			
v/c Ratio	0.54	0.84		0.87	0.38		0.85	0.29	0.24	0.69	0.31	
Uniform Delay, d1	35.2	25.6		33.1	17.8		32.4	25.7	25.4	34.2	29.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	6.3		26.0	0.2		20.0	0.4	0.4	9.6	0.6	
Delay (s)	39.1	31.9		59.1	18.0		52.4	26.0	25.7	43.9	29.6	
Level of Service	D	С		E	В		D	С	С	D	С	
Approach Delay (s)		32.5			30.9			35.1			36.5	
Approach LOS		С			С			D			D	
Intersection Summary												
HCM Average Control D			33.2	H	ICM Lev	vel of S	ervice		С			
HCM Volume to Capacit			0.70									
Actuated Cycle Length (79.9			ost time	· · /		12.0			
Intersection Capacity Ut	ilizatior	ı	73.9%	10	CU Leve	el of Sei	vice		D			
Analysis Period (min)			15									
Critical Lane Group												

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Synchro 6 Report 3/4/2011
Barrio Logan CPU 39: 32nd St & Waba	ash St					Hori	izon Y	ear Alt		iout Im Timing F		
	۶	_#	→	¥	4	+	×	۲	1	1	۲	1
Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations		25	Þ			4	đ		J.	÷	23	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00	1.00	0.88	
Frt		1.00	0.91			1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00			0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1752	1690			1796	1568		1719	1810	2707	
Flt Permitted		0.48	1.00			0.47	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		893	1690			872	1568		1719	1810	2707	
Volume (vph)	115	115	80	130	140	50	210	205	140	360	760	240
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	125	87	141	152	54	228	223	152	391	826	261
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	250	180	0	0	206	451	0	152	391	1087	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot	C	ustom	
Protected Phases			4			4			5	2	aotom	
Permitted Phases	4	4	·		4		4		Ű	-	23	
Actuated Green, G (s)		32.0	32.0			32.0	32.0		15.3	24.0	51.0	
Effective Green, g (s)		32.0	32.0			32.0	32.0		15.3	24.0	51.0	
Actuated g/C Ratio		0.27	0.27			0.27	0.27		0.13	0.20	0.42	
Clearance Time (s)		4.0	4.0			4.0	4.0		4.0	4.0	0.12	
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		238	451			233	418		219	362	1150	
v/s Ratio Prot		200	0.11			200	110		0.09	c0.22	1100	
v/s Ratio Perm		0.28	0.11			0.24	c0.29		0.00	00.22	c0.40	
v/c Ratio		1.05	0.40			0.88	1.08		0.69	1.08	0.95	
Uniform Delay, d1		44.0	36.1			42.2	44.0		50.1	48.0	33.2	
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		72.2	0.6			30.2	66.8		9.2	70.4	15.1	
Delay (s)		116.2	36.7			72.4	110.8		59.3	118.4	48.3	
Level of Service		F	50.7 D			72.4 E	F		59.5 E	F	40.3 D	
Approach Delay (s)			78.3			98.8			-	66.1	0	
Approach LOS			70.5 E			50.0 F				E		
Intersection Summary												
HCM Average Control E	Delay		85.1	H	ICM Lev	vel of S	ervice		F			
HCM Volume to Capaci	ty ratio		1.09									
Actuated Cycle Length	(s)		120.0	S	Sum of I	ost time	e (s)		12.0			
Intersection Capacity Ut	ilization	ı 1	11.7%	10	CU Leve	el of Se	rvice		н			
Analysis Period (min)			15									
c Critical Lane Group												

	- L#	1	Ţ	1	6	1	1	ŧ/	
		-	•			•		-	
Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2	
Lane Configurations		25	* To			25 4			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			4.0			
Lane Util. Factor		1.00	0.95			0.97			
Frt		1.00	0.99			0.98			
Flt Protected		0.95	1.00			0.96			
Satd. Flow (prot)		1767	3407			3321			
Flt Permitted		0.95	1.00			0.91			
Satd. Flow (perm)		1767	3407			3151			
Volume (vph)	35	415	380	30	10	340	55	10	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	38	451	413	33	11	370	60	11	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	489	446	0	0	452	0	0	
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%	
Turn Type	Prot	Prot			Perm				
Protected Phases	1	1	6			3			
Permitted Phases					3				
Actuated Green, G (s)		25.0	33.7			23.0			
Effective Green, g (s)		25.0	33.7			23.0			
Actuated g/C Ratio		0.21	0.28			0.19			
Clearance Time (s)		4.0	4.0			4.0			
Vehicle Extension (s)		3.0	3.0			3.0			
Lane Grp Cap (vph)		368	957			604			
v/s Ratio Prot		c0.28	0.13						
v/s Ratio Perm		50.20	0.10			0.14			
v/c Ratio		1.33	0.47			0.75			
Uniform Delay, d1		47.5	35.7			45.8			
Progression Factor		1.00	1.00			1.00			
Incremental Delay, d2		165.6	0.4			5.1			
Delay (s)		213.1	36.1			50.8			
Level of Service		F	D			D			
Approach Delay (s)			128.7			50.8			
Approach LOS			F			D			

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Barrio Logan CPU 40: Harbor Dr & 32r	nd St					Hori	zon Ye	ear Alt			iprover Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ተተ	r.	J.	**	7	H.	44	ř	2	**	ř
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1538	1687	3374	1467	1719	3438	1500	1719	3438	1526
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1538	1687	3374	1467	1719	3438	1500	1719	3438	1526
Volume (vph)	340	1185	100	40	436	460	70	690	140	310	280	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	370	1288	109	43	474	500	76	750	152	337	304	283
RTOR Reduction (vph)	0	0	33	0	0	424	0	0	61	0	0	89
Lane Group Flow (vph)	370	1288	76	43	474	76	76	750	91	337	304	194
Confl. Bikes (#/hr)	50/	=0/	=0/	70/	70/	7	=0/	50/	12	=0(50/	10
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		ustom	Prot		custom	Prot		Perm	Prot		ustom
Protected Phases	3	1426	15	13	1826	10	15	12	10	11 1 5	16 1 5	315
Permitted Phases	05.0	00.0	14	1.0	474	18	0.7	00.4	12	00.4	40.5	16
Actuated Green, G (s)	25.2	38.3	42.0	4.0	17.1	12.1	8.7	26.1	26.1	22.1	43.5	64.7
Effective Green, g (s)	25.2	38.3	42.0	4.0	17.1	12.1	8.7	26.1	26.1	22.1	43.5	64.7
Actuated g/C Ratio	0.21 4.0	0.31	0.34 4.0	0.03	0.14	0.10 4.0	0.07 4.0	0.21 4.0	0.21 4.0	0.18	0.36	0.53
Clearance Time (s)	3.0		3.0	3.0		4.0	3.0	3.0	3.0			
Vehicle Extension (s)		4075			474					040	4004	050
Lane Grp Cap (vph)	354 c0.22	1075	527	55	471	145	122	733	320	310	1221	856
v/s Ratio Prot v/s Ratio Perm	CU.22	c0.37	0.01	0.03	0.14	0.05	0.04	c0.22	0.06	c0.20	0.09	0.06 0.07
v/c Ratio	1.05	1.20	0.04	0.78	1.01	0.05	0.62	1.02	0.08	1.09	0.25	0.07
Uniform Delay, d1	48.6	42.1	27.8	58.8	52.7	52.4	55.3	48.2	40.4	50.2	27.9	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	40.2	1.00	0.94	0.94	0.88
Incremental Delay, d2	60.1	98.3	0.1	50.5	43.1	3.3	9.5	39.2	0.5	76.3	0.94	0.00
Delay (s)	108.8	140.4	28.0	109.3	95.8	55.8	64.8	87.4	40.9	123.6	26.4	13.7
Level of Service	F	F	20.0 C	F	55.0 F	55.0 E	04.0 E	67.4 F	40.9 D	120.0 F	20.4 C	В
Approach Delay (s)		126.9	U		76.7	-	-	78.5	U		58.0	D
Approach LOS		F			E			70.5 E			E	
Intersection Summary												
HCM Average Control E	Delav		92.3	H	ICM Le	vel of Se	ervice		F			
HCM Volume to Capaci			1.13									
Actuated Cycle Length			122.5	S	Sum of I	ost time	(s)		32.0			
Intersection Capacity Ut		1	85.7%			el of Ser			E			
Analysis Period (min)			15									
c Critical Lane Group												

41: Main St & I-15 R	lamps						1	Timing Plan: PM Pea
	≯	-+	-	•	1	1		
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	7	ሳቀ	44	۴	44			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00			
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00	1.00	0.85	0.92			
Flt Protected	0.95	1.00	1.00	1.00	0.98			
Satd. Flow (prot)	1770	3539	3539	1583	1670			
Flt Permitted	0.95	1.00	1.00	1.00	0.98			
Satd. Flow (perm)	1770	3539	3539	1583	1670			
Volume (vph)	303	727	361	154	120	153		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	329	790	392	167	130	166		
RTOR Reduction (vph)	0	0	0	128	76	0		
Lane Group Flow (vph)	329	790	392	39	220	0		
Confl. Peds. (#/hr)	525	130	552	- 55	10	4		
Confl. Bikes (#/hr)					10	1		
Turn Type	Prot			Perm				
	5	2	e	Penn	4			
Protected Phases	5	2	6	0	4			
Permitted Phases	13.7	29.0	11.3	6 11.3	11.9			
Actuated Green, G (s)								
Effective Green, g (s)	13.7	29.0	11.3	11.3	11.9			
Actuated g/C Ratio	0.28	0.59	0.23	0.23	0.24			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	496	2099	818	366	406			
v/s Ratio Prot	c0.19	0.22	c0.11		c0.13			
v/s Ratio Perm				0.02				
v/c Ratio	0.66	0.38	0.48	0.11	0.54			
Uniform Delay, d1	15.6	5.2	16.3	14.8	16.1			
Progression Factor	1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	3.3	0.1	0.4	0.1	1.5			
Delay (s)	18.9	5.3	16.7	14.9	17.6			
Level of Service	В	A	В	В	В			
Approach Delay (s)		9.3	16.2		17.6			
Approach LOS		A	В		В			
Intersection Summary								
HCM Average Control D	elay		12.5	H	CM Lev	el of Service	e B	
HCM Volume to Capacit			0.57					
Actuated Cycle Length (48.9	S	um of lo	ost time (s)	12.0	
Intersection Capacity Ut			53.5%			of Service	A	
Analysis Period (min)			15					
c Critical Lane Group			-					

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Barrio Logan CPU

Synchro 6 Report 3/4/2011

Horizon Year Alt 1 without Improvements

2: National Ave & 16	6th St									iming F		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	Т.)r	1.			de.			4.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			0.98	
Flpb, ped/bikes	0.99	1.00		0.98	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.99			0.98			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1759	1800		1737	1841			1773			1678	
Flt Permitted	0.22	1.00		0.57	1.00			0.84			0.90	
Satd. Flow (perm)	412	1800		1046	1841			1529			1535	
Volume (vph)	40	194	40	3	495	34	40	34	12	56	36	91
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	211	43	3	538	37	43	37	13	61	39	99
RTOR Reduction (vph)	0	14	0	0	5	0	0	7	0	0	41	0
Lane Group Flow (vph)	43	240	0	3	570	0	0	86	0	0	158	0
Confl. Peds. (#/hr)	19		16	16		19	7		14	14		7
Confl. Bikes (#/hr)			4			1			1			
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.5	20.5		20.5	20.5			22.5			22.5	
Effective Green, g (s)	20.5	20.5		20.5	20.5			22.5			22.5	
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.44			0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	166	724		420	740			675			677	
v/s Ratio Prot		0.13			c0.31							
v/s Ratio Perm	0.10			0.00				0.06			c0.10	
v/c Ratio	0.26	0.33		0.01	0.77			0.13			0.23	
Uniform Delay, d1	10.2	10.5		9.1	13.2			8.4			8.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.8	0.3		0.0	5.0			0.4			0.8	
Delay (s)	11.0	10.8		9.2	18.2			8.8			9.7	
Level of Service	В	В		А	В			А			А	
Approach Delay (s)		10.8			18.1			8.8			9.7	
Approach LOS		В			В			А			А	
Intersection Summary												
HCM Average Control E	Delay		14.1	H	ICM Lev	el of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.49									
Actuated Cycle Length			51.0			ost time			8.0			
Intersection Capacity Ut	tilization		52.4%	10	CU Leve	el of Se	rvice		А			
Analysis Period (min)			15									
c Critical Lane Group												

	bee St							
	۶	-	-	•	1	-		
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	ž	ተተ	410		34	7*		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0		
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00		
Frt	1.00	1.00	1.00		1.00	0.85		
Flt Protected	0.95	1.00	1.00		0.95	1.00		
Satd. Flow (prot)	1770	3539	3533		1770	1583		
Flt Permitted	0.95	1.00	1.00		0.95	1.00		
Satd. Flow (perm)	1770	3539	3533		1770	1583		
Volume (vph)	38	480	1670	20	110	110		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	41	522	1815	22	120	120		
RTOR Reduction (vph)	0	0	1	0	0	101		
Lane Group Flow (vph)	41	522	1836	0	120	19		
Turn Type	Prot					Perm		
Protected Phases	7	4	8		6			
Permitted Phases		•	Ŭ		Ŭ	6		
Actuated Green, G (s)	1.7	41.6	35.9		9.1	9.1		
Effective Green, g (s)	1.7	41.6	35.9		9.1	9.1		
Actuated g/C Ratio	0.03	0.71	0.61		0.16	0.16		
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	51	2508	2161		274	245		
v/s Ratio Prot	c0.02	0.15	c0.52		c0.07	240		
v/s Ratio Perm	0.02	0.15	00.52		0.07	0.01		
v/c Ratio	0.80	0.21	0.85		0.44	0.01		
Uniform Delay, d1	28.3	2.9	9.2		22.5	21.2		
Progression Factor	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2	59.0	0.0	3.3		1.1	0.1		
Delay (s)	87.3	3.0	12.6		23.6	21.3		
Level of Service	67.5 F	3.0 A	12.0 B		23.0 C	21.3 C		
Approach Delay (s)	P	9.1	12.6		22.5	C		
Approach LOS		9.1 A	12.0 B		22.5 C			
		А	D		U			
Intersection Summary								
HCM Average Control D			12.7	F	ICM Lev	el of Servic	e B	
HCM Volume to Capacit			0.77					
Actuated Cycle Length (58.7	S	Sum of l	ost time (s)	12.0	
Intersection Capacity Ut	ilization		60.3%	10	CU Leve	el of Service	В	
Analysis Period (min)			15					

Synchro 6 Report 3/4/2011

Horizon Year Alt 1 with Improvements

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Barrio Logan CPU

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		ţ,		×	*			4.0			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	
Frt		0.98		1.00	1.00			0.91			0.99	
Flt Protected		1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)		1832		1770	1863			1664			1798	
Flt Permitted		1.00		0.95	1.00			0.98			0.98	
Satd. Flow (perm)		1832		1770	1863	-		1664		050	1798	
Volume (vph)	0	170	24	87	202	0	31	0	68	259	236	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92 34	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	185	26	95	220	0	34	65	0	282	257	5
RTOR Reduction (vph) Lane Group Flow (vph)	0	204	0	95	220	0	0	43	0	0	586	(
Turn Type	0	204	0	Prot	220	0	Split	43	0	Split	000	
Protected Phases		4		3	8		3piit 2	2		Spiit 6	6	
Permitted Phases		4		3	0		2	2		0	0	
Actuated Green, G (s)		9.7		5.7	19.4			7.6			25.6	
Effective Green, g (s)		9.7		5.7	19.4			7.6			25.6	
Actuated g/C Ratio		0.15		0.09	0.30			0.12			0.40	
Clearance Time (s)		4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		275		156	559			196			713	
v/s Ratio Prot		c0.11		c0.05	0.12			c0.03			c0.33	
v/s Ratio Perm												
v/c Ratio		0.74		0.61	0.39			0.22			0.82	
Uniform Delay, d1		26.3		28.4	17.9			25.8			17.5	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
ncremental Delay, d2		10.3		6.6	0.5			0.6			7.6	
Delay (s)		36.6		35.0	18.4			26.4			25.1	
Level of Service		D		С	В			С			С	
Approach Delay (s)		36.6			23.4			26.4			25.1	
Approach LOS		D			С			С			С	
ntersection Summary												
HCM Average Control D			26.7	F	ICM Le	vel of Se	ervice		С			
HCM Volume to Capacit			0.69			and they a	(-)		10.0			
Actuated Cycle Length (64.6			ost time			16.0			
Intersection Capacity Ut	ilization		61.5%	10	JU Lev	el of Ser	VICE		В			
Analysis Period (min) c Critical Lane Group			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ň	14	LDIX	1100	1	WDI	NDL	ele.	NDIX	ODL	4.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	1500	4.0	4.0	1000	1500	4.0	1500	1500	4.0	1000
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.97			1.00	
Flpb, ped/bikes	0.98	1.00		0.95	1.00			1.00			0.98	
Frt	1.00	0.99		1.00	0.98			0.92			0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.97	
Satd. Flow (prot)	1740	1848		1687	1808			1655			1753	
Flt Permitted	0.29	1.00		0.58	1.00			0.98			0.77	
Satd. Flow (perm)	535	1848		1022	1808			1633			1392	
Volume (vph)	8	238	8	241	421	67	4	30	50	216	138	23
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	259	9	262	458	73	4	33	54	235	150	25
RTOR Reduction (vph)	0	2	0	0	9	0	0	32	0	0	4	
Lane Group Flow (vph)	9	266	0	262	522	0	0	59	0	0	406	0
Confl. Peds. (#/hr)	30		46	46		30	48		46	46		48
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.6	18.6		18.6	18.6			18.2			18.2	
Effective Green, g (s)	18.6	18.6		18.6	18.6			18.2			18.2	
Actuated g/C Ratio	0.42	0.42		0.42	0.42			0.41			0.41	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	222	767		424	751			663			566	
v/s Ratio Prot		0.14			c0.29							
v/s Ratio Perm	0.02			0.26				0.04			c0.29	
v/c Ratio	0.04	0.35		0.62	0.70			0.09			0.72	
Uniform Delay, d1	7.8	9.0		10.3	10.8			8.2			11.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.3		2.7	2.8			0.1			4.3	
Delay (s)	7.9	9.2		13.0	13.6			8.3			15.5	
Level of Service	А	А		В	В			А			В	
Approach Delay (s)		9.2			13.4			8.3			15.5	
Approach LOS		А			В			А			В	
Intersection Summary												
HCM Average Control E	Delay		12.9	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.71									
Actuated Cycle Length			44.8	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	tilization		67.4%	10	CU Lev	el of Sei	vice		С			
Analysis Period (min)			15									
c Critical Lane Group												

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Barrio Logan CPU	Horizon Year Alt 1 with Improvements
11: Harbor Dr & Beardsley St	Timing Plan: AM Peak
· · · · · · · · · · · · · · · · · · ·	· ↓ ↓

Movement EBL EBT WBT WBR SBL SBR Lane Configurations 14 15 17 17 Sign Control Free Free Stop
Grade 0% 0% 0%
Volume (veh/h) 0 580 1610 30 0 143
Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92
Hourly flow rate (vph) 0 630 1750 33 0 155
Pedestrians
Lane Width (ft)
Walking Speed (ft/s)
Percent Blockage
Right turn flare (veh)
Median type Raised
Median storage veh) 0
Upstream signal (ft) 661 658
pX, platoon unblocked 0.66 0.66 0.66
vC, conflicting volume 1783 2082 891
vC1, stage 1 conf vol 1766
vC2, stage 2 conf vol 315
vCu, unblocked vol 1673 2123 330
tC, single (s) 4.3 6.8 6.9
tC, 2 stage (s) 5.8
tF (s) 2.3 3.5 3.3
p0 queue free % 100 100 65
cM capacity (veh/h) 229 60 442
Direction, Lane # EB 1 EB 2 WB 1 WB 2 SB 1
, , , , , , , , , , , , , , , , , , , ,
Volume Left 0 0 0 0 0
Volume Right 0 0 0 33 155
cSH 1700 1700 1700 1700 442
Volume to Capacity 0.19 0.19 0.69 0.36 0.35
Queue Length 95th (ft) 0 0 0 39
Control Delay (s) 0.0 0.0 0.0 0.0 17.5
Lane LOS C
Approach Delay (s) 0.0 0.0 17.5
Approach LOS C
Intersection Summary
Average Delay 1.1
Intersection Capacity Utilization 61.0% ICU Level of Service
Analysis Period (min) 15

Barrio Logan CPU 13: Logan Ave & Ce	sar E.	Chave	ez Pkv	vy		ŀ	Horizor	Year			prover Plan: AN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	₽	7*	74	4	7	h	44	٣	7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1755	1863	1542	1761	1863	1544	1530	3059	1333	1530	3008	
Flt Permitted	0.52	1.00	1.00	0.22	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	961	1863	1542	409	1863	1544	1530	3059	1333	1530	3008	
Volume (vph)	140	280	120	100	325	76	100	300	280	70	909	82
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	304	130	109	353	83	109	326	304	76	988	89
RTOR Reduction (vph)	0	0	100	0	0	55	0	0	160	0	7	0
Lane Group Flow (vph)	152	304	30	109	353	28	109	326	144	76	1070	0
Confl. Peds. (#/hr)	15		13	13		15			17			39
Confl. Bikes (#/hr)			4									2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Prot	c	ustom	Prot		
Protected Phases		4			8		5	2	3	1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)	18.7	18.7	18.7	26.7	26.7	26.7	5.9	33.9	37.9	7.4	35.4	
Effective Green, g (s)	18.7	18.7	18.7	26.7	26.7	26.7	5.9	33.9	37.9	7.4	35.4	
Actuated g/C Ratio	0.23	0.23	0.23	0.33	0.33	0.33	0.07	0.42	0.47	0.09	0.44	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	225	435	360	137	622	515	113	1296	698	142	1331	
v/s Ratio Prot		0.16			0.19		c0.07	0.11	0.01	0.05	c0.36	
v/s Ratio Perm	0.16		0.02	c0.27		0.02			0.10			
v/c Ratio	0.68	0.70	0.08	0.80	0.57	0.05	0.96	0.25	0.21	0.54	0.80	
Uniform Delay, d1	27.9	28.1	24.0	24.2	21.9	18.1	36.9	14.9	12.3	34.7	19.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.81	0.75	1.00	1.00	
Incremental Delay, d2	7.8	4.9	0.1	26.5	1.2	0.0	68.7	0.4	0.1	3.8	5.2	
Delay (s)	35.7	32.9	24.1	50.6	23.1	18.1	103.2	12.5	9.4	38.5	24.5	
Level of Service	D	С	С	D	С	В	F	В	А	D	С	
Approach Delay (s)		31.7			27.8			24.6			25.5	
Approach LOS		С			С			С			С	
Intersection Summary												
HCM Average Control D	Delay		26.9	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit	ty ratio		0.82									
Actuated Cycle Length (s)		80.0	S	Sum of I	ost time	e (s)		12.0			
Intersection Capacity Ut	ilization		73.9%	10	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	٦	Ŷ	1	Pri .	4	7	H	朴汤	26	÷	۲	
Volume (vph)	190	250	180	120	350	120	90	580	70	745	310	
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		Perm	
Protected Phases		4			8			2		6		
Permitted Phases	4		4	8		8	2		6		6	
Detector Phases	4	4	4	8	8	8	2	2	6	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0	
Total Split (%)	42.5%				42.5%	42.5%		57.5%		57.5%	57.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5	45.5	45.5	45.5	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.57	0.57	0.57	0.57	0.57	
v/c Ratio	0.91	0.44	0.32	0.43	0.62	0.21	0.80	0.38	0.24	0.88	0.37	
Control Delay	67.3	22.5	7.2	24.4	26.5	4.3	62.4	9.8	3.9	19.6	0.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	
Total Delay	67.3	22.5	7.2	24.4	26.5	4.3	62.4	9.8	3.9	19.9	1.1	
LOS	E	С	А	С	С	А	E	A	A	В	А	
Approach Delay		31.8			21.6			16.4		13.7		
Approach LOS		С			С			В		В		
Intersection Summary												
Cycle Length: 80												
Actuated Cycle Length												
Offset: 0 (0%), Refere	nced to p	phase 2	NBTL a	and 6:SI	3TL, Sta	art of Gr	reen					
Natural Cycle: 90												
Control Type: Actuate		nated										
Maximum v/c Ratio: 0	.91											
Intersection Signal De				1	ntersec	tion LO	S: B					
Intersection Capacity		1 86.5%		1	CU Lev	el of Se	rvice E					
Analysis Period (min)	15											

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46 s	34 s

Synchro 6 Report 3/4/2011

Barrio Logan CPU 14: National Ave & Cesar E. Chavez Pkwy Horizon Year Alt 1 with Improvements Timing Plan: AM Peak												
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	₽	r,	J.	*	7	Ϋ́	† 1 ₀		ž	4	ř
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3185		1530	1610	1369
Flt Permitted	0.33	1.00	1.00	0.47	1.00	1.00	0.17	1.00		0.35	1.00	1.00
Satd. Flow (perm)	610	1863	1583	873	1863	1583	286	3185		566	1610	1369
Volume (vph)	190	250	180	120	350	120	90	580	50	70	745	310
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	272	196	130	380	130	98	630	54	76	810	337
RTOR Reduction (vph)	0	0	96	0	0	87	0	7	0	0	0	126
Lane Group Flow (vph)	207	272	100	130	380	43	98	677	0	76	810	211
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5		45.5	45.5	45.5
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5		45.5	45.5	45.5
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.57	0.57		0.57	0.57	0.57
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	202	617	524	289	617	524	163	1811		322	916	779
v/s Ratio Prot		0.15			0.20			0.21			c0.50	
v/s Ratio Perm	c0.34		0.06	0.15		0.03	0.34			0.13		0.15
v/c Ratio	1.02	0.44	0.19	0.45	0.62	0.08	0.60	0.37		0.24	0.88	0.27
Uniform Delay, d1	26.8	20.9	19.1	21.0	22.5	18.4	11.3	9.4		8.6	15.0	8.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.91		0.24	0.46	0.02
Incremental Delay, d2	69.9	0.5	0.2	1.1	1.8	0.1	15.2	0.6		1.2	8.9	0.6
Delay (s)	96.7	21.5	19.3	22.1	24.3	18.5	25.7	9.1		3.2	15.7	0.8
Level of Service	F	С	В	С	С	В	С	А		А	В	A
Approach Delay (s)		43.9			22.7			11.2			10.8	
Approach LOS		D			С			В			В	
Intersection Summary												
ICM Average Control Delay			19.9	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci												
Actuated Cycle Length (80.0			ost time			8.0				
Intersection Capacity Ut		86.5%	10	CU Lev	el of Se	rvice		E			_	
Analysis Period (min)			15									
 Critical Lane Group 												

c Critical Lane Group

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	ň	Ţ.	35	T.	λi.	41.	Υç	1.	
Volume (vph)	75	40	40	50	40	410	95	810	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0	
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	10.0	10.0	10.0	10.0	64.7	64.7	64.7	64.7	
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.81	0.81	0.81	0.81	
v/c Ratio	0.52	0.40	0.27	0.46	0.35	0.19	0.16	0.77	
Control Delay	43.7	19.0	34.4	20.6	11.8	1.9	2.5	6.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	
Total Delay	43.7	19.0	34.4	20.6	11.8	1.9	2.5	7.3	
LOS	D	В	С	С	В	А	A	А	
Approach Delay		29.6		24.1		2.7		6.8	
Approach LOS		С		С		А		А	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	n: 80								
Offset: 6 (8%), Refere	nced to p	hase 2:	NBTL a	nd 6:SI	3TL, Sta	art of Gr	reen		
Natural Cycle: 90									
Control Type: Actuate	d-Coordii	nated							
Maximum v/c Ratio: 0	.77								
Intersection Signal De						tion LOS			
Intersection Capacity I	Jtilization	1 75.3%			CU Lev	el of Se	rvice D		

Splits and Fliases.	15. Newlon Ave & Cesar E. Chav	ед г	KVVY
↑ ⁰²			l → ₀4
49 s			31 s
↓ ~ ø6			♦ ø8
49 s			31 s

Synchro 6 Report 3/4/2011

Barrio Logan CPU 15: Newton Ave & C	Cesar E	. Cha	vez Pk		Horizon Year Alt 1 with Improvements Timing Plan: AM Peal							
	٦	-	\mathbf{r}	-	+	×	1	t	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ž	ţ,		ž	1.		¥.	410		×	T.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.91		1.00	0.91		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1695		1770	1704		1612	3190		1612	1659	
Flt Permitted	0.58	1.00		0.65	1.00		0.21	1.00		0.48	1.00	
Satd. Flow (perm)	1076	1695		1203	1704		349	3190		811	1659	
Volume (vph)	75	40	60	40	50	65	40	410	30	95	810	140
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	43	65	43	54	71	43	446	33	103	880	152
RTOR Reduction (vph)	0	58	0	0	63	0	0	3	0	0	4	0
Lane Group Flow (vph)	82	50	0	43	62	0	43	476	0	103	1028	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4		-	8		0	2		0	6	
Permitted Phases	4	0.0		8	0.0		2	00.1		6	00.1	
Actuated Green, G (s)	8.9	8.9 8.9		8.9	8.9 8.9		63.1	63.1 63.1		63.1 63.1	63.1 63.1	
Effective Green, g (s)	8.9 0.11	0.11		8.9 0.11	0.11		63.1 0.79	0.79		0.79	0.79	
Actuated g/C Ratio Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
	120	189		134	190		275	2516		640	1309	
Lane Grp Cap (vph) v/s Ratio Prot	120	0.03		134	0.04		275	0.15		640	c0.62	
v/s Ratio Perm	c0.08	0.03		0.04	0.04		0.12	0.15		0.13	C0.62	
v/c Ratio	0.68	0.27		0.04	0.33		0.12	0.19		0.13	0.79	
Uniform Delay, d1	34.2	32.6		32.8	32.8		2.0	2.1		2.0	4.7	
Progression Factor	1.00	1.00		1.00	1.00		0.76	0.68		0.70	0.44	
Incremental Delay, d2	14.9	0.8		1.4	1.0		1.1	0.2		0.4	3.2	
Delay (s)	49.1	33.3		34.2	33.8		2.7	1.6		1.8	5.3	
Level of Service	D	C		C	C		A	A		A	A	
Approach Delay (s)	_	40.1			33.9			1.7			5.0	
Approach LOS		D			С			A			A	
Intersection Summary												
HCM Average Control E			9.8	F	ICM Le	vel of S	ervice		А			
HCM Volume to Capaci			0.77									
Actuated Cycle Length			80.0			ost time			8.0			
Intersection Capacity Ut	tilization		75.3%	10	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
 Critical Lane Group 												

c Critical Lane Group

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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	ž	ţ,	N.	Ŷ	7	ň	47.	N.	1	
Volume (vph)	150	190	70	330	190	70	340	150	580	
Turn Type	Perm		Perm		Perm	Perm		Perm		
Protected Phases		4		8			2		6	
Permitted Phases	4		8		8	2		6		
Detector Phases	4	4	8	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	38.0	38.0	38.0	38.0	38.0	42.0	42.0	42.0	42.0	
Total Split (%)						52.5%				
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None		C-Min				
Act Effct Green (s)	23.1	23.1	23.1	23.1	23.1	48.9	48.9	48.9	48.9	
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.61	0.61	0.61	0.61	
v/c Ratio	0.72	0.42	0.25	0.67	0.36	0.72	0.25	0.36	0.86	
Control Delay	42.4	23.1	21.0	30.3	4.5	59.0	7.9	8.1	18.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	2.8	
Total Delay	42.4	23.1 C	21.0 C	30.3 C	4.5	59.0 F	8.2	8.1	21.7 C	
	D		C		A	E	A	A		
Approach Delay		31.2		20.8			15.3		19.4	
Approach LOS		С		С			В		В	
Intersection Summary										
Cycle Length: 80										
Actuated Cycle Length	: 80									
Offset: 20 (25%), Refe	renced t	o phase	2:NBT	L and 6:	SBTL,	Start of	Green			
Natural Cycle: 80										
Control Type: Actuated	I-Coordii	nated								
Maximum v/c Ratio: 0.	86									
Intersection Signal Del						tion LO				
Intersection Capacity L		1 88.6%		I	CU Lev	el of Se	rvice E			
Analysis Period (min) 1	16									

	<u>→</u> _{ø4}
42 s	38 s
↓ ø6	4 Ø8
42 s	38 s

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Lane Configurations h h f f h f h f h f h f h f h f h f h f h f Land Uhi.	Barrio Logan CPU 16: Main St & Cesar	E. Ch	avez F	⊃kwy			F	lorizor	i year			prover Plan: AN	
Lane Configurations N A F N A F N A F N A F N A F N A F N F N F N F N F N F N F N F N F F Control of Service Control Service Control Service T Service F F F F F F F F F F F F F F F F F F		≯	-	7	4	+	•	•	1	1	1	ţ	~
	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
	Lane Configurations	ň	Ť.		ji.	p.	7	Υç	41		7	T.	
Lane Util, Factor 1.00 1.00 1.00 1.00 1.00 0.95 1.00 0.99 Frpb, ped/bikes 1.00 1.00 1.00 1.00 0.99 1.00 0.99 1.00 0.99 Fib, ped/bikes 0.98 1.00 0.99 1.00 0.00 9.90 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.	Ideal Flow (vphpl)	1900		1900	1900		1900	1900		1900	1900		1900
Frpb, ped/bikes 1.00 1.00 1.00 0.95 1.00 0.99 1.00 0.98 Flpb, ped/bikes 0.98 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.99 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.47 1.00 0.58 1.00 1.00 0.47 1.00 1.55 Volume (vph) 150 150 150 155 160 160 161 163 161 161 161 161 161 163 161 161 163 161 100 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10	Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Fipb. ped/bikes 0.98 1.00 0.09 1.00 1.00 0.00 0.99 1.00 0.00 0.99 1.00 0.00 0.99 1.00 0.00 0.99 1.00 0.00 0.99 1.00 0.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	
Frit 1.00 0.99 1.00 1.00 0.85 1.00 0.97 1.00 0.96 FIt Protected 0.95 1.00 0.47 1.00 0.47 1.00 0.47 1.00 0.47 1.00 </td <td>Frpb, ped/bikes</td> <td>1.00</td> <td>1.00</td> <td></td> <td>1.00</td> <td>1.00</td> <td>0.95</td> <td>1.00</td> <td>0.99</td> <td></td> <td>1.00</td> <td>0.98</td> <td></td>	Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	0.99		1.00	0.98	
Fit Protected 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 Satd. Flow (prot) 1740 1839 1750 1863 1511 1345 2996 1549 1555 Satd. Flow (perm) 560 1839 941 1863 1511 313 2996 773 1555 Volume (vph) 150 190 15 70 330 190 70 340 90 150 580 18 Peak-hour fator, PHF 0.92 141 1 1 1 164 167 168 167 168	Flpb, ped/bikes	0.98	1.00		0.99	1.00	1.00	0.99	1.00		1.00	1.00	
Satd. Flow (prot) 1740 1839 1750 1863 1511 1545 2996 1549 1555 FIt Permitted 0.31 1.00 0.51 1.00 0.19 1.00 0.47 1.00 Statl. Flow (prm) 150 190 15 70 330 190 70 340 90 150 580 185 Volume (vph) 163 207 16 76 359 207 76 370 98 163 630 15 RTOR Reduction (vph) 0 4 0 0 147 0 22 0 0 10 Lane Group Flow (vph) 163 219 0 76 359 60 76 446 0 163 816 16%					1.00	1.00					1.00		
Fit Permitted 0.31 1.00 0.51 1.00 1.00 0.19 1.00 0.47 1.00 Satd. Flow (perm) 560 1839 941 1863 1511 313 2996 773 1555 Volume (vph) 150 190 15 70 330 190 70 340 90 150 580 180 Peak-hour factor, PHF 0.92 0.61 0.61 0.61 0.61 0.61													
Satd. Flow (perm) 560 1839 941 1863 1511 313 2996 773 1555 Volume (vph) 150 190 15 70 330 190 70 340 90 150 580 15 Peak-hour factor, PHF 0.92 0.61 66 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% <t< td=""><td>Satd. Flow (prot)</td><td>1740</td><td>1839</td><td></td><td>1750</td><td>1863</td><td>1511</td><td>1545</td><td>2996</td><td></td><td>1549</td><td>1555</td><td></td></t<>	Satd. Flow (prot)	1740	1839		1750	1863	1511	1545	2996		1549	1555	
Volume (vph) 150 190 15 70 330 190 70 340 90 150 580 1E Peak-hour factor, PHF 0.92 0.90 0.11 0 1	Flt Permitted	0.31											
Peak-hour factor, PHF 0.92 0.91 0 10 10 Lane Group Flow (vph) 163 219 0 76 359 60 76 446 0 163 816 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16%<	Satd. Flow (perm)												
Adj. Flow (vph) 163 207 16 76 359 207 76 370 98 163 630 15 RTOR Reduction (vph) 0 4 0 0 0 147 0 22 0 0 10 Lane Group Flow (vph) 163 219 0 76 359 60 76 446 0 163 816 Confl. Bikes (#/hr) 2 1 1 1 1 1 1 1 1 1 16% <td></td> <td>150</td> <td></td> <td>180</td>		150											180
RTOR Reduction (vph) 0 4 0 0 147 0 22 0 0 10 Lane Group Flow (vph) 163 219 0 76 359 60 76 446 0 163 816 Confl. Bikes (#/hr) 38 18 18 38 26 5 5 22 Confl. Bikes (#/hr) 2 1 1 Heavy Vehicles (%) 2% 2% 2% 2% 2% 16% </td <td>Peak-hour factor, PHF</td> <td></td> <td></td> <td>0.92</td> <td>0.92</td> <td></td> <td>0.92</td> <td>0.92</td> <td></td> <td>0.92</td> <td></td> <td></td> <td>0.92</td>	Peak-hour factor, PHF			0.92	0.92		0.92	0.92		0.92			0.92
Lane Group Flow (vph)16321907635960764460163816Confl. Peds. (#hn)381818183826552Confl. Bikes (#hn)211116%16%16%16%16%16%Heavy Vehicles (%)2%2%2%2%2%2%2%16%16%16%16%16%16%Turn TypePermPermPermPermPermPermPermPermPermPermProtected Phases488266666Actuated Green, G (s)23.123.123.123.123.148.948.948.948.948.9Effective Green, g (s)23.123.123.123.123.148.948.948.948.948.9Clearance Time (s)4.04.04.04.04.04.04.04.04.04.04.0Vehicle Extension (s)3.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>196</td>													196
Confl. Peds. (#/hr) 38 18 18 38 26 5 5 2 Confl. Bikes (#/hr) 2 1 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td></td<>													0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			219			359			446			816	0
Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 2% 16% <th< td=""><td></td><td>38</td><td></td><td></td><td>18</td><td></td><td></td><td>26</td><td></td><td></td><td>5</td><td></td><td>26</td></th<>		38			18			26			5		26
Turn Type Perm Perm Perm Perm Perm Perm Protected Phases 4 8 2 6 Permitted Phases 4 8 8 2 6 Actuated Green, G (s) 23.1 23.1 23.1 23.1 23.1 48.9 48.9 48.9 Actuated Green, G (s) 23.1 23.1 23.1 23.1 48.9 48.9 48.9 48.9 Actuated g/C Ratio 0.29 0.29 0.29 0.29 0.61 0.61 0.61 0.61 Clearance Time (s) 4.0	· · ·												2
Protected Phases 4 8 2 6 Permitted Phases 4 8 8 2 6 Actuated Green, G (s) 23.1 23.1 23.1 23.1 23.1 48.9 48.9 48.9 Actuated Green, g (s) 23.1 23.1 23.1 23.1 23.1 48.9 48.9 48.9 Actuated g/C Ratio 0.29 0.29 0.29 0.29 0.61 0.61 0.61 0.61 Clearance Time (s) 4.0			2%	2%		2%			16%	16%		16%	16%
Permitted Phases 4 8 8 2 6 Actuated Green, G (s) 23.1 23.1 23.1 23.1 23.1 48.9 48.9 48.9 48.9 Effective Green, g (s) 23.1 23.1 23.1 23.1 23.1 48.9 48.9 48.9 48.9 Actuated g/C Ratio 0.29 0.29 0.29 0.29 0.61 0.61 0.61 0.61 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 <td></td> <td>Perm</td> <td></td> <td></td> <td>Perm</td> <td></td> <td>Perm</td> <td>Perm</td> <td></td> <td></td> <td>Perm</td> <td></td> <td></td>		Perm			Perm		Perm	Perm			Perm		
Actuated Green, G (s) 23.1 23.1 23.1 23.1 23.1 23.1 23.1 48.9 48.9 48.9 48.9 Effective Green, g (s) 23.1 23.1 23.1 23.1 23.1 23.1 23.1 48.9 48.9 48.9 48.9 Actuated g/C Ratio 0.29 0.29 0.29 0.29 0.29 0.61 0.61 0.61 0.61 Clearance Time (s) 4.0 2.0 5.0 5.0 5.0 5.0 5.1 21.1			4			8		-	2		-	6	
Effective Green, g (s) 23.1 23.1 23.1 23.1 23.1 23.1 48.9 48.9 48.9 48.9 48.9 Actuated g/C Ratio 0.29 0.29 0.29 0.29 0.29 0.29 0.61 0.62 0.21 v/s Ratio Prot 0.22 0.62 0.62 0.24 0.62 0.24 0.35 0.86 Uniform Delay, d1 28.4 23.0 22.0 25.1 1.1 8.0 7.1 7.7 12.7 7.7 12.7 Progression Factor 1.00 1.00 1.00													
Actuated g/C Ratio 0.29 0.29 0.29 0.29 0.61 0.61 0.61 0.61 Clearance Time (s) 4.0 0.24 0.21 0.52 0.52 0.51 0.15 c.0.52 0.51 0.21 0.01 0.00 1.00 1.00 1.00 1.00 1.0													
Clearance Time (s) 4.0													
Vehicle Extension (s) 3.0													
Lane Grp Cap (vph) 162 531 272 538 436 191 1831 472 950 v/s Ratio Prot 0.12 0.19 0.15 c0.52 v/s Ratio Perm c0.29 0.08 0.04 0.24 0.21 v/c Ratio 1.01 0.41 0.28 0.67 0.14 0.40 0.24 0.35 0.86 Uniform Delay, d1 28.4 23.0 22.0 25.1 21.1 8.0 7.1 7.7 12.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.59 0.58 Incremental Delay, d2 72.3 0.5 0.6 3.1 0.1 6.1 0.3 1.4 7.0 Delay (s) 100.8 23.5 22.6 28.2 21.2 14.1 7.4 5.9 14.4 Level of Service F C C C B A B Intersection Summary HCM Average Control Delay													
v/s Ratio Prot 0.12 0.19 0.15 c0.52 v/s Ratio Perm c0.29 0.08 0.04 0.24 0.21 v/c Ratio 1.01 0.41 0.28 0.67 0.14 0.40 0.24 0.35 0.86 Uniform Delay, d1 28.4 23.0 22.0 25.1 21.1 8.0 7.1 7.7 12.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.59 0.58 Incremental Delay, d2 72.3 0.5 0.6 3.1 0.1 6.1 0.3 1.4 7.0 Delay (s) 100.8 23.5 22.6 28.2 21.2 14.1 7.4 5.9 14.4 Level of Service F C C C B A B Approach LOS E C A B B Intersection Summary HCM Average Control Delay 21.6 HCM Level of Service C C HCM Volume to Capacity ratio 0.91 Actuated Cycle Length (s) 80.0 Sum o													
v/s Ratio Perm c0.29 0.08 0.04 0.24 0.21 v/c Ratio 1.01 0.41 0.28 0.67 0.14 0.40 0.24 0.35 0.86 Uniform Delay, d1 28.4 23.0 22.0 25.1 21.1 8.0 7.1 7.7 12.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.59 0.58 Incremental Delay, d2 72.3 0.5 0.6 3.1 0.1 6.1 0.3 1.4 7.0 Delay (s) 100.8 23.5 22.6 28.2 21.2 14.1 7.4 5.9 14.4 Level of Service F C C C B A A B Approach LOS E C A B B B B B Intersection Summary 21.6 HCM Level of Service C C C C C C C C C C C C C C C C C <		162			272		436	191			472		
v/c Ratio 1.01 0.41 0.28 0.67 0.14 0.40 0.24 0.35 0.86 Uniform Delay, d1 28.4 23.0 22.0 25.1 21.1 8.0 7.1 7.7 12.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.59 0.58 Incremental Delay, d2 72.3 0.5 0.6 3.1 0.1 6.1 0.3 1.4 7.0 Delay (s) 100.8 23.5 22.6 28.2 21.2 14.1 7.4 5.9 14.4 Level of Service F C C C B A A B Approach Delay (s) 56.1 25.3 8.3 13.0 Approach LOS E C A B Intersection Summary 1.61 0.91 A B HCM Average Control Delay 21.6 HCM Level of Service C C HCM Volume to Capacity ratio 0.91 A 8.0 B Intersection Capacity Utilization 88.6% <t< td=""><td></td><td>0.00</td><td>0.12</td><td></td><td>0.00</td><td>0.19</td><td>0.01</td><td>0.04</td><td>0.15</td><td></td><td>0.01</td><td>c0.52</td><td></td></t<>		0.00	0.12		0.00	0.19	0.01	0.04	0.15		0.01	c0.52	
Uniform Delay, d1 28.4 23.0 22.0 25.1 21.1 8.0 7.1 7.7 12.7 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.59 0.58 Incremental Delay, d2 72.3 0.5 0.6 3.1 0.1 6.1 0.3 1.4 7.0 Delay (s) 100.8 23.5 22.6 28.2 21.2 14.1 7.4 5.9 14.4 Level of Service F C C C B A A B Approach Delay (s) 56.1 25.3 8.3 13.0 Approach LOS E C A B Intersection Summary E C A B B Intersection Summary 21.6 HCM Level of Service C C HCM Average Control Delay 21.6 HCM Level of Service C HCM Average Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity ruli 80			0.44			0.07			0.04			0.00	
Progression Factor 1.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Incremental Delay, d2 72.3 0.5 0.6 3.1 0.1 6.1 0.3 1.4 7.0 Delay (s) 100.8 23.5 22.6 28.2 21.2 14.1 7.4 5.9 14.4 Level of Service F C C C B A A B Approach LOS E C A B B B B Intersection Summary E C A B <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Delay (s) 100.8 23.5 22.6 28.2 21.2 14.1 7.4 5.9 14.4 Level of Service F C C C B A A B Approach Delay (s) 56.1 25.3 8.3 13.0 Approach LOS E C A B Intersection Summary HCM Average Control Delay 21.6 HCM Level of Service C HCM Volume to Capacity ratio 0.91 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 88.6% ICU Level of Service E Analysis Period (min) 15													
Level of Service F C C C C B A B Approach Delay (s) 56.1 25.3 8.3 13.0 Approach LOS E C A B Intersection Summary C A B HCM Average Control Delay 21.6 HCM Level of Service C HCM Volume to Capacity ratio 0.91 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 88.6% ICU Level of Service E Analysis Period (min) 15	.												
Approach Delay (s) 56.1 25.3 8.3 13.0 Approach LOS E C A B Intersection Summary E C A B HCM Average Control Delay 21.6 HCM Level of Service C C HCM Volume to Capacity ratio 0.91													
Approach LOS E C A B Intersection Summary HCM Average Control Delay 21.6 HCM Level of Service C HCM Volume to Capacity ratio 0.91		Г			C		C	В			A		
Intersection Summary Intersection Summary Intersection Summary HCM Average Control Delay 21.6 HCM Level of Service C HCM Volume to Capacity ratio 0.91 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 88.6% ICU Level of Service E Analysis Period (min) 15													
HCM Average Control Delay 21.6 HCM Level of Service C HCM Volume to Capacity ratio 0.91	Approach LOS		E			C			A			В	
HCM Volume to Capacity ratio 0.91 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 88.6% ICU Level of Service E Analysis Period (min) 15	Intersection Summary												
HCM Volume to Capacity ratio 0.91 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 88.6% ICU Level of Service E Analysis Period (min) 15	HCM Average Control E		21.6	H	ICM Le	vel of S	ervice		С				
Intersection Capacity Utilization 88.6% ICU Level of Service E Analysis Period (min) 15			0.91										
Analysis Period (min) 15	Actuated Cycle Length		80.0						8.0				
				10	CU Lev	el of Sei	rvice		E				
				15									

c Critical Lane Group

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Barrio Logan CPU Horizon Year Alt 1 with Improvem 23: Logan Ave & Sampson St Timing Plan: AM												
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ţ,		×	1.		H.	ţ,		ž	Ĩ.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.94		1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1745		1770	1747		1770	1777		1770	1846	
Flt Permitted	0.66	1.00		0.37	1.00		0.60	1.00		0.34	1.00	
Satd. Flow (perm)	1236	1745		691	1747		1123	1777		634	1846	
Volume (vph)	110	224	163	91	79	56	219	332	147	62	218	14
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	243	177	99	86	61	238	361	160	67	237	15
RTOR Reduction (vph)	0	41	0	0	39	0	0	24	0	0	3	0
Lane Group Flow (vph)	120	379	0	99	108	0	238	497	0	67	249	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.5	14.5		14.5	14.5		18.6	18.6		18.6	18.6	
Effective Green, g (s)	14.5	14.5		14.5	14.5		18.6	18.6		18.6	18.6	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.45	0.45		0.45	0.45	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	436	616		244	616		508	804		287	835	
v/s Ratio Prot		c0.22			0.06			c0.28			0.13	
v/s Ratio Perm	0.10			0.14			0.21			0.11		
v/c Ratio	0.28	0.61		0.41	0.17		0.47	0.62		0.23	0.30	
Uniform Delay, d1	9.5	11.0		10.0	9.2		7.8	8.6		6.9	7.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.8		1.1	0.1		0.7	1.4		0.4	0.2	
Delay (s)	9.9	12.8		11.1	9.3		8.5	10.0		7.3	7.3	
Level of Service	А	В		В	А		А	А		А	А	
Approach Delay (s)		12.2			10.0			9.5			7.3	
Approach LOS		В			В			А			А	
Intersection Summary												
HCM Average Control D	elay		10.0	F	ICM Le	vel of S	ervice		А			
HCM Volume to Capacit	y ratio		0.62									
Actuated Cycle Length (s)		41.1	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Uti	ilization		70.0%	10	CU Lev	el of Sei	vice		С			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		Т.)r	4		μ		P ^r		1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	60	17	143	187	0	28	0	124	16	22	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	65	18	155	203	0	30	0	135	17	24	14
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1						
Volume Total (vph)	84	155	203	30	135	55						
Volume Left (vph)	0	155	0	30	0	17						
Volume Right (vph)	18	0	0	0	135	14						
Hadj (s)	-0.10	0.94	0.03	0.23	0.05	-0.06						
Departure Headway (s)	4.5	5.7	4.8	5.2	3.2	4.9						
Degree Utilization, x	0.11	0.25	0.27	0.04	0.12	0.08						
Capacity (veh/h)	772	612	730	638	1121	682						
Control Delay (s)	8.0	9.4	8.4	8.5	6.6	8.3						
Approach Delay (s)	8.0	8.9		7.0		8.3						
Approach LOS	Α	A		А		А						
Intersection Summary												
Delay			8.2									
HCM Level of Service			А									
Intersection Capacity Ut	ilization	1	31.5%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Synchro 6 Report 3/4/2011

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Barrio Logan CPU 32: Harbor Dr & Sch	lev St					F	lorizor	Year	Alt 1 w	vith Im Timing P			Barrio Logan CPU 33: National Ave &
	۶	-	\mathbf{r}	4	+	×	1	t	1	1	ţ	~	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Movement
Lane Configurations	×	仲弘			41.							7	Lane Configurations
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	Ideal Flow (vphpl)
Total Lost time (s)	4.0	4.0			4.0							4.0	Total Lost time (s)
Lane Util. Factor	1.00	0.95			0.95							1.00	Lane Util. Factor
Frpb, ped/bikes	1.00	1.00			1.00							1.00	Frt
Flpb, ped/bikes	1.00	1.00			1.00							1.00	Flt Protected
Frt	1.00	1.00			1.00							0.86	Satd. Flow (prot)
Flt Protected	0.95	1.00			1.00							1.00	Flt Permitted
Satd. Flow (prot)	1543	3539			3534							1454	Satd. Flow (perm)
Flt Permitted	0.95	1.00			1.00							1.00	Volume (vph)
Satd. Flow (perm)	1543	3539			3534							1454	Peak-hour factor, PHF
Volume (vph)	74	504	0	0	1542	17	0	0	0	0	0	81	Adj. Flow (vph)
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	RTOR Reduction (vph)
Adj. Flow (vph)	80	548	0	0	1676	18	0	0	0	0	0	88	Lane Group Flow (vph
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	81	Heavy Vehicles (%)
Lane Group Flow (vph)	80	548	0	0	1693	0	0	0	0	0	0	7	Turn Type
Confl. Peds. (#/hr)			8	8					2	2			Protected Phases
Confl. Bikes (#/hr)			Ū	Ű					5	_		11	Permitted Phases
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%	Actuated Green, G (s)
Turn Type	Prot											Over	Effective Green, g (s)
Protected Phases		1826			1426							13	Actuated g/C Ratio
Permitted Phases	10	1020			1120							10	Clearance Time (s)
Actuated Green, G (s)	7.2	59.3			44.1							7.2	Vehicle Extension (s)
Effective Green, g (s)	7.2	59.3			44.1							7.2	Lane Grp Cap (vph)
Actuated g/C Ratio	0.08	0.66			0.49							0.08	v/s Ratio Prot
Clearance Time (s)	4.0	0.00			01.10							4.0	v/s Ratio Perm
Vehicle Extension (s)	3.0											3.0	v/c Ratio
Lane Grp Cap (vph)	123	2321			1724							116	Uniform Delay, d1
v/s Ratio Prot	c0.05	0.15			c0.48							0.00	Progression Factor
v/s Ratio Perm	00.00	0.15			00.40							0.00	Incremental Delay, d2
v/c Ratio	0.65	0.24			0.98							0.06	Delay (s)
Uniform Delay, d1	40.4	6.3			22.8							38.5	Level of Service
Progression Factor	1.00	1.00			1.00							1.00	Approach Delay (s)
Incremental Delay, d2	11.7	0.1			17.5							0.2	Approach LOS
Delay (s)	52.0	6.4			40.2							38.7	
Level of Service	02.0 D	A			10.2							D	Intersection Summary
Approach Delay (s)		12.2			40.2			0.0			38.7	-	HCM Average Control
Approach LOS		B						0.0 A			D		HCM Volume to Capac
		5			5			~			5		Actuated Cycle Length
Intersection Summary													Intersection Capacity L
HCM Average Control D			32.9	H	ICM Le	vel of S	ervice		С				Analysis Period (min)
HCM Volume to Capacit			0.94										c Critical Lane Group
Actuated Cycle Length (90.4			ost time			39.1				
Intersection Capacity Uti	lization		54.8%	10		el of Sei	vice		A				
Analysis Period (min)	Lation		15	I.	JU LUV		VICC		A				

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 33: National Ave & 2	28th St	t				ŀ	lorizor	Year		vith Im Timing F		
	≯	-	\mathbf{r}	4	+	×	1	Ť	1	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ሳቀ	7	76	To			4	r		4	ţ,
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1299	1817			1754	1509		1744	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.76	1.00		0.78	1.00
Satd. Flow (perm)	1770	3539	1583	1299	1817			1351	1509		1392	1509
Volume (vph)	106	258	18	192	628	123	33	98	86	115	205	307
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	280	20	209	683	134	36	107	93	125	223	334
RTOR Reduction (vph)	0	0	12	0	5	0	0	0	64	0	0	223
Lane Group Flow (vph)	115	280	8	209	812	0	0	143	29	0	348	111
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		6
Actuated Green, G (s)	8.5	43.6	43.6	18.8	53.9			33.8	33.8		33.8	33.8
Effective Green, g (s)	8.5	43.6	43.6	18.8	53.9			33.8	33.8		33.8	33.8
Actuated g/C Ratio	0.08	0.40	0.40	0.17	0.50			0.31	0.31		0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	139	1426	638	226	905			422	471		435	471
v/s Ratio Prot	0.06	0.08		c0.16	c0.45							
v/s Ratio Perm			0.01					0.11	0.02		c0.25	0.07
v/c Ratio	0.83	0.20	0.01	0.92	0.90			0.34	0.06		0.80	0.23
Uniform Delay, d1	49.1	20.9	19.4	44.0	24.6			28.6	26.1		34.1	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	31.4	0.1	0.0	39.4	11.5			0.5	0.1		10.1	0.3
Delay (s)	80.6	21.0	19.4	83.4	36.1			29.1	26.1		44.2	27.9
Level of Service	F	С	В	F	D			С	С		D	С
Approach Delay (s)		37.4			45.7			27.9			36.2	
Approach LOS		D			D			С			D	
Intersection Summary												
HCM Average Control D	Delay		39.7	ŀ	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci	ty ratio		0.86									
Actuated Cycle Length ((S)		108.2	5	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut	ilization		83.9%	ŀ	CU Lev	el of Se	rvice		E			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			EDK			VVDK	INDL M		NDK	JDL		SDR
Ideal Flow (vphpl)	1900	1000	1900	۳ 1900	1900	1900	1900	1 900	1900	1900	1000	1900
		1900	1900	4.0	4.0	1900	4.0	4.0	1900		1900 4.0	1900
Total Lost time (s)	4.0	4.0								4.0		
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.91	
	1.00	0.93		1.00	0.91		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1659		1687	1608		1770	3447		1770	4848	
Flt Permitted	0.58	1.00		0.37	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1029	1659		659	1608		1770	3447		1770	4848	
Volume (vph)	230	180	140	45	70	120	90	700	40	160	860	310
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	196	152	49	76	130	98	761	43	174	935	337
RTOR Reduction (vph)	0	47	0	0	90	0	0	5	0	0	76	(
Lane Group Flow (vph)	250	301	0	49	116	0	98	799	0	174	1196	(
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	18.8	18.8		18.8	18.8		4.6	24.3		6.1	25.8	
Effective Green, g (s)	18.8	18.8		18.8	18.8		4.6	24.3		6.1	25.8	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.08	0.40		0.10	0.42	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	316	510		202	494		133	1369		176	2044	
v/s Ratio Prot		0.18			0.07		0.06	0.23		c0.10	c0.25	
v/s Ratio Perm	c0.24			0.07								
v/c Ratio	0.79	0.59		0.24	0.23		0.74	0.58		0.99	0.58	
Uniform Delay, d1	19.4	17.9		15.9	15.8		27.7	14.5		27.5	13.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.7	1.8		0.6	0.2		19.0	1.8		63.9	1.2	
Delay (s)	32.1	19.7		16.5	16.1		46.7	16.3		91.4	14.8	
Level of Service	C	В		B	B		D	B		F	B	
Approach Delay (s)		24.9		_	16.2		_	19.6		-	24.0	
Approach LOS		C			B			B			C	
Intersection Summary												
HCM Average Control D	Delay		22.3	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.68									
Actuated Cycle Length (61.2	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut			66.6%			el of Sei			C			
Analysis Period (min)			15						J			

Barrio Logan CPU Horizon Year Alt 1 with Improvements 36: Harbor Dr & 28th St Timing Plan: AM Peak												
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ሻሻ	ተቀ	7*	74	44	7		et.		77	4	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.85	1.00	1.00	0.94		0.99		1.00	1.00	0.9
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97		1.00	1.00	0.8
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	3303	3406	1299	1719	3438	1443		1763		3367	1827	152
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (perm)	3303	3406	1299	1719	3438	1443		1763		3367	1827	152
Volume (vph)	50	670	4	17	942	116	0	6	2	375	15	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	728	4	18	1024	126	0	7	2	408	16	27
RTOR Reduction (vph)	0	0	2	0	0	47	0	2	0	0	0	20
Lane Group Flow (vph)	54	728	2	18	1024	79	0	7	0	408	16	7
Confl. Peds. (#/hr)			69			80			_			_
Confl. Bikes (#/hr)	001	00/	00/	=0/	=0/	3	40/	407	6	40/	40/	10
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		custom	Prot		ustom	Split			Split		Perm
Protected Phases	11	1626	10	15	1226	13	14	14		1 13 5	1315	
Permitted Phases	0.0	05.0	16	0.0	045	12		40.4		00.7	00.7	1513
Actuated Green, G (s)	3.9	35.8	30.1	2.6	34.5	47.5		13.4		29.7	29.7	29.7
Effective Green, g (s)	3.9	35.8	30.1	2.6	34.5	47.5		13.4		29.7	29.7	29.7
Actuated g/C Ratio	0.03	0.32	0.27	0.02	0.30	0.42		0.12		0.26	0.26	0.26
Clearance Time (s)	4.0		4.0	4.0		4.0		4.0				
Vehicle Extension (s)	3.0	4074	3.0	3.0	40.45	3.0		3.0		004	470	000
Lane Grp Cap (vph)	113	1074	344	39 0.01	1045	604		208		881	478	399
v/s Ratio Prot v/s Ratio Perm	c0.02	0.21	0.00	0.01	c0.30	0.02		c0.00		c0.12	0.01	0.00
	0.40	0.00	0.00	0.40	0.00			0.02		0.40	0.00	0.00
v/c Ratio Uniform Delay, d1	0.48	0.68	0.01 30.7	0.46	0.98	0.13		0.03		0.46	0.03	0.02
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.92	0.94	31. 1.4
Incremental Delay, d2	3.2	1.00	0.0	8.4	22.7	0.1		0.1		0.92	0.94	0.0
Delay (s)	57.0	35.5	30.7	63.2	61.9	20.4		44.4		32.6	29.2	43.9
Level of Service	57.0 E	35.5 D	30.7 C	03.2 E	61.9 E	20.4 C		44.4 D		32.0 C	29.2 C	43.8 C
Approach Delay (s)		37.0	U		57.4	U		44.4		U	33.2	
Approach LOS		57.0 D			57.4 E			-++.+ D			55.2 C	
		U			E			U			U	
Intersection Summary							<u>.</u>					
HCM Average Control E			46.2	H	ICM Lev	vel of Se	ervice		D			
HCM Volume to Capaci			0.61	-			(-)		00.0			
Actuated Cycle Length (113.5		Sum of I				32.0			
Intersection Capacity Ut	ilization	1	50.1%	10	CU Leve	ei of Sei	vice		A			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ŝ			1			40				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			1.00				
Frt		0.99			0.94			0.99				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1723			1667			1382				
Flt Permitted		0.98			1.00			1.00				
Satd. Flow (perm)		1723			1667			1382				
Volume (vph)	84	104	15	18	102	88	5	180	19	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	113	16	20	111	96	5	196	21	0	0	0
RTOR Reduction (vph)	0	4	0	0	30	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	216	0	0	197	0	0	219	0	0	0	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	40%	2%	2%	2%	2%
Turn Type	Split			Split			Perm					
Protected Phases	4	4		8	8			2				
Permitted Phases							2					
Actuated Green, G (s)		9.7			9.4			20.1				
Effective Green, g (s)		9.7			9.4			20.1				
Actuated g/C Ratio		0.19			0.18			0.39				
Clearance Time (s)		4.0			4.0			4.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		326			306			543				
v/s Ratio Prot		c0.13			c0.12			0.40				
v/s Ratio Perm								0.16				
v/c Ratio		0.66			0.64			0.40				
Uniform Delay, d1		19.2 1.00			19.3 1.00			11.2 1.00				
Progression Factor												
Incremental Delay, d2		5.0 24.2			4.6 23.9			0.5 11.7				
Delay (s) Level of Service		24.2 C			23.9 C			H.7 B				
Approach Delay (s)		24.2			23.9			11.7			0.0	
Approach LOS		24.2 C			23.9 C			В			0.0 A	
Intersection Summary												
HCM Average Control De	elav		20.0	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capacity			0.52									
Actuated Cycle Length (s			51.2	S	Sum of I	ost time	(s)		12.0			
Intersection Capacity Util			43.7%			el of Sei	· · /		A			
Analysis Period (min)			15									

Barrio Logan CPU 39: 32nd St & Waba	ish St					ŀ	lorizor	n Year		vith Im Timing F		
	۶	_#	→	¥	4	+	×	۲	1	1	۲	1
Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations		25	P			4	đ		74	÷	15	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00	1.00	0.88	
Frt		1.00	0.95			1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00			0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1760	1773			1787	1574		1719	1810	2707	
Flt Permitted		0.36	1.00			0.42	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		670	1773			788	1574		1719	1810	2707	
Volume (vph)	65	25	170	80	250	45	120	50	70	215	55	290
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	27	185	87	272	49	130	54	76	234	60	315
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	98	261	0	0	321	184	0	76	234	375	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot	c	ustom	
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4		4				23	
Actuated Green, G (s)		45.2	45.2			45.2	45.2		11.4	23.1	60.3	
Effective Green, g (s)		45.2	45.2			45.2	45.2		11.4	23.1	60.3	
Actuated g/C Ratio		0.33	0.33			0.33	0.33		0.08	0.17	0.43	
Clearance Time (s)		4.0	4.0			4.0	4.0		4.0	4.0		
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		218	577			257	513		141	301	1176	
v/s Ratio Prot			0.15						0.04	c0.13		
v/s Ratio Perm		0.15				c0.41	0.12				0.14	
v/c Ratio		0.45	0.45			1.25	0.36		0.54	0.78	0.32	
Uniform Delay, d1		37.0	37.0			46.8	35.7		61.2	55.4	25.8	
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		1.5	0.6			140.2	0.4		3.9	11.9	0.2	
Delay (s)		38.4	37.6			187.0	36.2		65.1	67.3	25.9	
Level of Service		D	D			F	D		E	E	С	
Approach Delay (s)			37.8			132.0				44.4		
Approach LOS			D			F				D		
Intersection Summary												
HCM Average Control D	Delav		103.4	F	ICM Le	vel of S	ervice		F			
HCM Volume to Capaci	ty ratio		1.10									
Actuated Cycle Length (138.8	S	Sum of I	ost time	e (s)		16.0			
Intersection Capacity Ut		1	94.7%			el of Se	· · /		F			
Analysis Period (min)			15									
c Critical Lane Group												

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Horizon Year Alt 1 with Improvements

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Barrio Logan CPU

Barrio Logan CPU 39: 32nd St & Wabash St Horizon Year Alt 1 with Improvements Timing Plan: AM Peak

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Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2	
Lane Configurations		25	4%			25.44			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			4.0			
Lane Util. Factor		1.00	0.95			0.97			
Frt		1.00	0.98			0.99			
Flt Protected		0.95	1.00			0.96			
Satd. Flow (prot)		1765	3384			3345			
Flt Permitted		0.95	1.00			0.88			
Satd. Flow (perm)		1765	3384			3064			
Volume (vph)	30	180	445	65	60	735	65	10	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	33	196	484	71	65	799	71	11	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	229	555	0	0	946	0	0	
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%	
Turn Type	Prot	Prot			Perm				
Protected Phases	1	1	6			3			
Permitted Phases					3				
Actuated Green, G (s)		21.3	33.0			33.2			
Effective Green, g (s)		21.3	33.0			33.2			
Actuated g/C Ratio		0.15	0.24			0.24			
Clearance Time (s)		4.0	4.0			4.0			
Vehicle Extension (s)		3.0	3.0			3.0			
Lane Grp Cap (vph)		271	805			733			
v/s Ratio Prot		c0.13	0.16						
v/s Ratio Perm						c0.31			
v/c Ratio		0.85	0.69			1.29			
Uniform Delay, d1		57.1	48.2			52.8			
Progression Factor		1.00	1.00			1.00			
Incremental Delay, d2		20.8	2.5			140.9			
Delay (s)		77.9	50.7			193.7			
Level of Service		E	D			F			
Approach Delay (s)			58.7			193.7			
Approach LOS			E			F			
Intersection Summary									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ň	<u>^</u>		1100	44	1	NDL NG	44	1 INDIX	N N	44	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.8
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1519	1687	3374	1509	1719	3438	1481	1719	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1519	1687	3374	1509	1719	3438	1481	1719	3438	1538
Volume (vph)	70	657	140	300	735	390	30	160	30	130	1040	4
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	714	152	326	799	424	33	174	33	141	1130	43
RTOR Reduction (vph)	0	0	123	0	0	277	0	0	28	0	0	2
Lane Group Flow (vph)	76	714	29	326	799	147	33	174	5	141	1130	20
Confl. Bikes (#/hr)	70	/ 14	3	520	133	147	55	1/4	16	141	1150	20
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		custom	Prot		custom	Prot	070	Perm	Prot		uston
Protected Phases		1426	15		1826	Jusion	15	12	Feilii	11 1 5		315
Permitted Phases	5	1420	14	15	10 2 0	18	15	12	12	1115	1015	10
Actuated Green, G (s)	5.2	8.6	6.9	16.5	19.9	15.6	2.6	11.5	11.5	12.7	25.6	26.8
Effective Green, g (s)	5.2	8.6	6.9	16.5	19.9	15.6	2.6	11.5	11.5	12.7	25.6	26.8
Actuated g/C Ratio	0.06	0.11	0.08	0.20	0.24	0.19	0.03	0.14	0.14	0.16	0.31	0.33
Clearance Time (s)	4.0	0.11	4.0	4.0	0.24	4.0	4.0	4.0	4.0	0.10	0.51	0.00
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	110	364	129	342	826	290	55	486	209	269	1083	583
v/s Ratio Prot	0.04	c0.21	0.01	c0.19	0.24	290	0.02	0.05	209	c0.08	c0.33	0.0
v/s Ratio Perm	0.04	0.21	0.01	0.19	0.24	0.10	0.02	0.05	0.00	0.00	0.55	0.0
v/c Ratio	0.69	1.96	0.23	0.95	0.97	0.51	0.60	0.36	0.00	0.52	1.04	0.0
Uniform Delay, d1	37.3	36.4	34.7	32.0	30.4	29.4	38.8	31.6	30.1	31.5	27.8	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.22	0.87	1.3
Incremental Delay, d2	17.1	442.6	0.9	36.2	23.3	1.4	17.0	0.5	0.0	1.8	39.0	0.0
Delay (s)	54.3	478.9	35.6	68.3	53.7	30.8	55.9	32.0	30.1	40.1	63.3	25.1
Level of Service	D	F	D	E	D	C	E	02.0 C	C	D	E	20.
Approach Delay (s)	D	373.1	U	L	50.5	U	L	35.0	U	U	59.5	
Approach LOS		575.T			D			D			E	
					5			5			-	
Intersection Summary												
HCM Average Control D			127.7	F	ICM Le	vel of S	ervice		F			
HCM Volume to Capacit			1.07	_								
Actuated Cycle Length (81.3			ost time			24.0			
Intersection Capacity Ut	ilization	า	80.2%	10	JU Lev	el of Sei	VICE		D			
Analysis Period (min)			15									

c Critical Lane Group

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Barrio Logan CPU	
42: I-5 SB off-ramp & 28th St	

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Horizon Year Alt 1 with Improvements Timing Plan: AM Peak

EBL EBR NBL NBT SBT SBR Movement Lane Configurations **** 1**900 1900 44 Ideal Flow (vphpl) 1900 1900 1900 Total Lost time (s) 4.0 4.0 4.0 Lane Util. Factor 1.00 0.95 0.91 Frt 0.86 1.00 1.00 Flt Protected 1.00 1.00 1.00 Satd. Flow (prot) 1611 3539 5085 Flt Permitted 1.00 1.00 1.00 1611 Satd. Flow (perm) 3539 5085 Volume (vph) 0 915 0 1050 415 0 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 0 995 0 451 1141 0 RTOR Reduction (vph) 0 36 0 0 0 0 Lane Group Flow (vph) 959 0 1141 451 0 0 Turn Type custom Protected Phases 246 6 Permitted Phases 4 Actuated Green, G (s) 40.2 64.2 16.0 Effective Green, g (s) 40.2 64.2 16.0 Actuated g/C Ratio 0.63 0.25 1.00 Clearance Time (s) 4.0 4.0 Vehicle Extension (s) 3.0 3.0 Lane Grp Cap (vph) 1009 3539 1267 v/s Ratio Prot c0.32 0.09 v/s Ratio Perm c0.60 v/c Ratio 0.95 0.32 0.36 Uniform Delay, d1 11.1 0.0 19.9 **Progression Factor** 1.00 1.00 1.00 Incremental Delay, d2 17.6 0.1 0.8 Delay (s) 28.7 0.1 20.6 Level of Service С С А Approach Delay (s) 28.7 0.1 20.6 Approach LOS С С А Intersection Summary HCM Average Control Delay HCM Level of Service 14.7 В HCM Volume to Capacity ratio 0.74 Actuated Cycle Length (s) 64.2 Sum of lost time (s) 4.0 ICU Level of Service Intersection Capacity Utilization 71.3% С Analysis Period (min) 15 c Critical Lane Group

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Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT Lane Configurations 1	✓ SBR 1900
Lane Configurations 1	
Ideal Flow (vphpl) 1900 <td>1900</td>	1900
Total Lost time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0	1900
Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Frpb, ped/bikes 1.00 0.99 1.00 1.00 0.99	
Flpb, ped/bikes 0.99 1.00 0.98 1.00 0.99 1.00	
Frt 1.00 0.99 1.00 0.99 0.99 0.99	
Fit Protected 0.95 1.00 0.95 1.00 0.97 0.97	
Satd. Flow (prot) 1756 1830 1730 1845 1783 1708	
Fit Permitted 0.35 1.00 0.47 1.00 0.79 0.76	
Satd. Flow (perm) 653 1830 850 1845 1441 1330	
Volume (vph) 91 347 31 3 458 25 61 41 7 127 25	70
Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	0.92
Adj. Flow (vph) 99 377 34 3 498 27 66 45 8 138 27	76
RTOR Reduction (vph) 0 6 0 0 3 0 0 4 0 0 24	0
Lane Group Flow (vph) 99 405 0 3 522 0 0 115 0 0 217	0
Confl. Peds. (#/hr) 27 37 37 27 14 10 10	14
Confl. Bikes (#/hr) 1 3 3	1
Turn Type Perm Perm Perm Perm	
Protected Phases 4 8 2 6	
Permitted Phases 4 8 2 6	
Actuated Green, G (s) 15.3 15.3 15.3 15.3 10.9 10.9	
Effective Green, g (s) 15.3 15.3 15.3 15.3 10.9 10.9	
Actuated g/C Ratio 0.45 0.45 0.45 0.45 0.32 0.32	
Clearance Time (s) 4.0	
Vehicle Extension (s) 3.0	
Lane Grp Cap (vph) 292 819 380 825 459 424	
v/s Ratio Prot 0.22 c0.28	
v/s Ratio Perm 0.15 0.00 0.08 c0.16	
v/c Ratio 0.34 0.50 0.01 0.63 0.25 0.51	
Uniform Delay, d1 6.2 6.7 5.2 7.3 8.6 9.5	
Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00	
Incremental Delay, d2 0.7 0.5 0.0 1.6 0.3 1.0	
Delay (s) 6.9 7.2 5.2 8.9 8.9 10.5	
Level of Service A A A A A B	
Approach Delay (s) 7.1 8.9 8.9 10.5	
Approach LOS A A A B	
Intersection Summary	
HCM Average Control Delay 8.5 HCM Level of Service A	
HCM Volume to Capacity ratio 0.58	
Actuated Cycle Length (s) 34.2 Sum of lost time (s) 8.0	
Intersection Capacity Utilization 56.8% ICU Level of Service B	
Analysis Period (min) 15	

c Critical Lane Group

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Barrio Logan CPU 6: Harbor Dr & Sigsl	bee St					Horizon Yea	ar Alt 1 wit		vements Alt 1 9 Plan: PM Peak
0	۶	-	+	•	1	4			
Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations	×	<u>^</u>	410		14	74			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00			
Frt	1.00	1.00	0.98		1.00	0.85			
Flt Protected	0.95	1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539	3479		1770	1583			
Flt Permitted	0.28	1.00	1.00		0.95	1.00			
Satd. Flow (perm)	524	3539	3479		1770	1583			
Volume (vph)	65	1945	780	100	100	80			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	71	2114	848	109	109	87			
RTOR Reduction (vph)	0	0	11	0	0	74			
Lane Group Flow (vph)	71	2114	946	0	109	13			
Turn Type	Perm					Perm			
Protected Phases		4	8		6				
Permitted Phases	4					6			
Actuated Green, G (s)	48.7	48.7	48.7		9.8	9.8			
Effective Green, g (s)	48.7	48.7	48.7		9.8	9.8			
Actuated g/C Ratio	0.73	0.73	0.73		0.15	0.15			
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	384	2592	2548		261	233			
v/s Ratio Prot		c0.60	0.27		c0.06				
v/s Ratio Perm	0.14					0.01			
v/c Ratio	0.18	0.82	0.37		0.42	0.06			
Uniform Delay, d1	2.8	5.9	3.3		25.8	24.4			
Progression Factor	1.00	1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.2	2.1	0.1		1.1	0.1			
Delay (s)	3.0	8.0	3.4		26.8	24.5			
Level of Service	А	А	А		С	С			
Approach Delay (s)		7.8	3.4		25.8				
Approach LOS		А	А		С				
Intersection Summary									
HCM Average Control D			7.6	H	ICM Lev	vel of Service		А	
HCM Volume to Capacit			0.75						
Actuated Cycle Length (66.5	S	Sum of I	ost time (s)	1	3.0	
Intersection Capacity Ut	ilization		66.0%	IC	CU Leve	el of Service		С	
Analysis Period (min)			15						
c Critical Lane Group									

Barrio Logan CPU 7: Logan Ave & Bea	rdsley	St				Horizo	on Yea	r Alt 1		nprove Timing F		
	٦	-	\mathbf{r}	4	-	•	1	1	1	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ţ,		74	4			et.			1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	
Frt		0.98		1.00	1.00			0.91			0.99	
Flt Protected		1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)		1833		1770	1863			1664			1782	
Flt Permitted		1.00		0.95	1.00			0.98			0.97	
Satd. Flow (perm)		1833		1770	1863			1664			1782	
Volume (vph)	0	515	69	41	154	0	56	0	122	272	110	38
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	560	75	45	167	0	61	0	133	296	120	41
RTOR Reduction (vph)	0	5	0	0	0	0	0	93	0	0	4	0
Lane Group Flow (vph)	0	630	0	45	167	0	0	101	0	0	453	0
Turn Type				Prot			Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases								_				
Actuated Green, G (s)		30.9		3.8	38.7			9.9			20.3	
Effective Green, q (s)		30.9		3.8	38.7			9.9			20.3	
Actuated g/C Ratio		0.38		0.05	0.48			0.12			0.25	
Clearance Time (s)		4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		700		83	891			204			447	
v/s Ratio Prot		c0.34		c0.03	0.09			c0.06			c0.25	
v/s Ratio Perm		00.01		00.00	0.00			00.00			00.20	
v/c Ratio		0.90		0.54	0.19			0.49			1.01	
Uniform Delay, d1		23.5		37.7	12.1			33.2			30.3	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		14.7		7.1	0.1			1.9			46.1	
Delay (s)		38.2		44.8	12.2			35.1			76.4	
Level of Service		D		D	В			D			E	
Approach Delay (s)		38.2			19.1			35.1			76.4	
Approach LOS		D			В			D			E	
Intersection Summary												
HCM Average Control D	elay		46.8	F	ICM Le	vel of Se	ervice		D			
HCM Volume to Capacit	ty ratio		0.85									
Actuated Cycle Length (s)		80.9	S	Sum of I	ost time	(s)		16.0			
Intersection Capacity Ut	ilization	L	77.8%	ŀ	CU Lev	el of Sei	vice		D			
Analysis Period (min)			15									
c Critical Lane Group												

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Synchro 6 Report 3/4/2011

Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Lane Configurations 1 <t< th=""><th>Barrio Logan CPU 8: National Ave & B</th><th>on Yea</th><th>r Alt 1</th><th></th><th>nprove Fiming F</th><th></th><th></th></t<>	Barrio Logan CPU 8: National Ave & B	on Yea	r Alt 1		nprove Fiming F								
Lane Configurations N D N D		≯	-	\mathbf{r}	4	+	×	•	Ť	1	1	ŧ	-√
Ideal Flow (vphpl) 1900 171 17	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Ideal Flow (vphp) 1900 171 171 171<	Lane Configurations	7	Ť.		ЪC.	1.			et.			to.	
Lane Util, Factor 1.00 1.00 1.00 1.00 1.00 1.00 Frpb, ped/bikes 1.00 1.00 0.99 0.98 1.00 1.00 Frpb, ped/bikes 0.99 1.00 0.99 1.00 1.00 1.00 Frt 1.00 1.00 0.97 0.90 0.99 Fit Protected 0.95 1.00 0.97 0.90 0.99 Std. Flow (port) 1751 1862 1759 1797 1649 1781 Fit Premitted 0.40 1.00 0.21 1.00 0.98 0.92 <	Ideal Flow (vphpl)	1900		1900	1900		1900	1900		1900	1900		1900
Frpb, ped/bikes 1.00 1.00 0.99 0.98 1.00 Flpb, ped/bikes 0.99 1.00 0.99 1.00 1.00 Flpb, ped/bikes 0.99 1.00 0.99 1.00 1.00 Flt 1.00 1.00 0.97 0.90 0.99 Flt Protected 0.95 1.00 0.95 1.00 0.09 Satd. Flow (prot) 1751 1862 1759 1797 1649 1781 Flt Permitted 0.40 1.00 0.21 1.00 0.98 0.70 Satd. Flow (perm) 731 1862 380 1797 1622 1296 Volume (vph) 19 625 2 113 347 79 43 134 189 83 11 Peak-hour factor, PHF 92 0.92<	Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Fipb, ped/bikes 0.99 1.00 0.99 1.00 1.00 1.00 1.00 Fit 1.00 1.00 1.00 0.97 0.90 0.99 Fith Protected 0.95 1.00 0.95 1.00 0.97 1649 1781 Std. Flow (port) 1751 1862 1759 1797 1622 1296 Volume (vph) 19 625 2 113 347 77 9 43 134 189 83 11 Peak-hour factor, PHF 0.92	Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Fr. 1.00 1.00 0.09 0.97 0.90 0.99 Fit Protected 0.95 1.00 0.95 1.00 1.00 0.97 Stdt. Flow (prot) 1751 1862 1759 1797 1649 1781 Fit Permitted 0.40 1.00 0.21 1.00 0.98 0.70 Stdt. Flow (perm) 731 1862 380 1797 1629 122 1296 Volume (vph) 19 625 2 113 347 77 9 43 134 189 83 11 Peak-hour factor, PHF 0.92 <	Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.98			1.00	
FIt Protected 0.95 1.00 0.95 1.00 1.00 0.97 Satd. Flow (prot) 1751 1862 1759 1797 1649 1781 FIt Permitted 0.40 1.00 0.21 1.00 0.98 0.70 Satd. Flow (perm) 731 1862 380 1797 1622 1296 Volume (vph) 19 625 2 113 347 77 9 43 134 189 83 11 Peak-bour factor, PHF 0.92	Flpb, ped/bikes	0.99	1.00		0.99	1.00			1.00			1.00	
Satd. Flow (prot) 1751 1862 1759 1797 1649 1781 Flt Permitted 0.40 1.00 0.21 1.00 0.98 0.70 Satd. Flow (perm) 731 1862 380 1797 1622 1226 Volume (vph) 19 625 2 113 347 77 9 43 134 189 83 11 Peak-hour factor, PHF 0.92 0.	Frt	1.00	1.00		1.00	0.97			0.90			0.99	
Fit Permitted 0.40 1.00 0.21 1.00 0.98 0.70 Satd. Flow (perm) 731 1862 380 1797 1622 1296 Volume (vph) 19 625 2 113 347 77 9 43 134 189 83 11 Peak-hour factor, PHF 0.92	Flt Protected	0.95	1.00		0.95	1.00			1.00			0.97	
Satd. Flow (perm) 731 1862 380 1797 1622 1296 Volume (vph) 19 625 2 113 347 77 9 43 134 189 83 11 Peak-hour factor, PHF 0.92 0.	Satd. Flow (prot)	1751	1862		1759	1797			1649			1781	
Volume (vph) 19 625 2 113 347 77 9 43 134 189 83 11 Peak-hour factor, PHF 0.92 <t< td=""><td>Flt Permitted</td><td>0.40</td><td>1.00</td><td></td><td>0.21</td><td>1.00</td><td></td><td></td><td>0.98</td><td></td><td></td><td>0.70</td><td></td></t<>	Flt Permitted	0.40	1.00		0.21	1.00			0.98			0.70	
Peak-hour factor, PHF 0.92 <t< td=""><td>Satd. Flow (perm)</td><td>731</td><td>1862</td><td></td><td>380</td><td>1797</td><td></td><td></td><td>1622</td><td></td><td></td><td>1296</td><td></td></t<>	Satd. Flow (perm)	731	1862		380	1797			1622			1296	
Adj. Flow (vph) 21 679 2 123 377 84 10 47 146 205 90 12 RTOR Reduction (vph) 0 0 0 13 0 0 94 0 0 2 0 Lane Group Flow (vph) 21 681 0 123 448 0 0 109 0 0 305 0 Confl. Peds. (#/n) 15 16 16 15 38 11 11 38 Turn Type Perm Size <td>Volume (vph)</td> <td>19</td> <td>625</td> <td>2</td> <td>113</td> <td>347</td> <td>77</td> <td>9</td> <td>43</td> <td>134</td> <td>189</td> <td>83</td> <td>11</td>	Volume (vph)	19	625	2	113	347	77	9	43	134	189	83	11
Adj. Flow (vph) 21 679 2 123 377 84 10 47 146 205 90 12 RTOR Reduction (vph) 0 0 0 13 0 0 94 0 0 2 0 Lane Group Flow (vph) 21 681 0 123 448 0 0 109 0 0 305 0 Confl. Peds. (#/n) 15 16 16 15 38 11 11 38 Turn Type Perm Size <td></td> <td>0.92</td>		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
RTOR Reduction (vph) 0 0 0 13 0 0 94 0 0 2 0 Lane Group Flow (vph) 21 681 0 123 448 0 0 0 305 0 Confl. Peds. (#/hr) 15 16 16 15 38 11 11 38 Turn Type Perm Picitizetizetizetizetizetizetizetizetizetiz		21	679	2	123	377	84		47	146	205	90	12
Lane Group Flow (vph) 21 681 0 123 448 0 0 109 0 0 305 0 Confl. Peds. (#/hr) 15 16 16 15 38 11 11 38 Turn Type Perm Perm Perm Perm Perm Perm Protected Phases 4 8 2 6 Actuated Green, G (s) 22.8 22.8 22.8 17.1 17.1 Effective Green, g (s) 22.8 22.8 22.8 17.1 17.1 Actuated G/C Ratio 0.48 0.48 0.48 0.46 0.36 0.36 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vs Ratio Prot c0.37 0.25		0	0	0	0	13	0	0	94	0	0	2	0
Confl. Peds. (#/h) 15 16 16 15 38 11 11 38 Tum Type Perm Perm Perm Perm Perm Perm Protected Phases 4 8 2 6 Permitted Phases 4 8 2 6 Actuated Green, G (s) 22.8 22.8 22.8 17.1 17.1 Effective Green, g (s) 22.8 22.8 22.8 17.1 17.1 Actuated g/C Ratio 0.48 0.48 0.48 0.48 0.36 0.36 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vs Ratio Pert c0.3 0.3 3.0 3.0 3.0 3.0 3.0 Vs Ratio Pert c0.3 0.32 0.07 c0.24 v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 0.100 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Lane Group Flow (vph)	21	681	0	123	448	0	0	109	0	0	305	0
Turn Type Perm Perm Perm Perm Perm Protected Phases 4 8 2 6 Actuated Phases 4 8 2 6 Actuated Green, G (s) 22.8 22.8 22.8 17.1 17.1 Effective Green, g (s) 22.8 22.8 22.8 17.1 17.1 Actuated g/C Ratio 0.48 0.48 0.48 0.36 0.36 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 348 886 181 855 579 463 v/s Ratio Prot c0.37 0.25 0.07 c0.24 v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 Progression Factor 1.00 1.00 1.00 1.00 1.00		15		16	16			38		11	11		
Protected Phases 4 8 2 6 Permitted Phases 4 8 2 6 Actuated Green, G (s) 22.8 22.8 22.8 22.8 17.1 17.1 Effective Green, g (s) 22.8 22.8 22.8 22.8 17.1 17.1 Actuated g/C Ratio 0.48 0.48 0.48 0.48 0.36 0.36 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 348 886 181 855 579 463 v/s Ratio Prot c0.37 0.25 0.07 c0.24 v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 0.1 4.1 <td></td> <td>Perm</td> <td></td> <td></td> <td>Perm</td> <td></td> <td></td> <td>Perm</td> <td></td> <td></td> <td>Perm</td> <td></td> <td></td>		Perm			Perm			Perm			Perm		
Permitted Phases 4 8 2 6 Actuated Green, G (s) 22.8 22.8 22.8 17.1 17.1 Effective Green, g (s) 22.8 22.8 22.8 22.8 17.1 17.1 Actuated g/C Ratio 0.48 0.48 0.48 0.36 0.36 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 348 886 181 855 579 463 v/s Ratio Perm 0.03 0.32 0.07 c0.24 v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 9 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 <td< td=""><td></td><td></td><td>4</td><td></td><td></td><td>8</td><td></td><td></td><td>2</td><td></td><td></td><td>6</td><td></td></td<>			4			8			2			6	
Actuated Green, G (s) 22.8 22.8 22.8 22.8 17.1 17.1 Effective Green, g (s) 22.8 22.8 22.8 22.8 17.1 17.1 Actuated g/C Ratio 0.48 0.48 0.48 0.36 0.36 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 348 886 181 855 579 463 v/s Ratio Perm 0.03 0.32 0.07 c0.24 v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 0.1 4.1 9.7 0.6 0.2 3.4 Delay (s) 6.8 14.4 19.4 9.3 10.8 16.3 Approach Delay (s) 14.2 11.5 10.8 16.3	Permitted Phases	4			8			2			6		
Effective Green, g (s) 22.8 22.8 22.8 17.1 17.1 Actuated g/C Ratio 0.48 0.48 0.48 0.48 0.36 0.36 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 348 886 181 855 579 463 v/s Ratio Prot c0.37 0.25 0.07 c0.24 v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 0.1 4.1 9.7 0.6 0.2 3.4 Delay (s) 6.8 14.4 19.4 9.3 10.8 16.3 Level of Service A B B A B B Approach LOS B B B <td< td=""><td></td><td></td><td>22.8</td><td></td><td></td><td>22.8</td><td></td><td></td><td>17.1</td><td></td><td></td><td>17.1</td><td></td></td<>			22.8			22.8			17.1			17.1	
Actuated g/C Ratio 0.48 0.48 0.48 0.48 0.36 0.36 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 348 886 181 855 579 463 V/s Ratio Prot c0.37 0.25 0.07 c0.24 v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 Progression Factor 1.00 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>17.1</td><td></td><td></td><td>17.1</td><td></td></t<>									17.1			17.1	
Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 348 886 181 855 579 463 V/s Ratio Prot c0.37 0.25		0.48	0.48		0.48	0.48			0.36			0.36	
Vehicle Extension (s) 3.0	Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
v/s Ratio Prot c0.37 0.25 v/s Ratio Perm 0.03 0.32 0.07 c0.24 v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 0.1 4.1 9.7 0.6 0.2 3.4 Delay (s) 6.8 14.4 19.4 9.3 10.8 16.3 Level of Service A B B A B B Approach Delay (s) 14.2 11.5 10.8 16.3 Approach LOS B B B B Intersection Summary HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72		3.0	3.0		3.0	3.0			3.0			3.0	
v/s Ratio Prot c0.37 0.25 v/s Ratio Perm 0.03 0.32 0.07 c0.24 v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 0.1 4.1 9.7 0.6 0.2 3.4 Delay (s) 6.8 14.4 19.4 9.3 10.8 16.3 Level of Service A B B A B B Approach Delay (s) 14.2 11.5 10.8 16.3 Approach LOS B B B B Intersection Summary HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72	Lane Grp Cap (vph)	348	886		181	855			579			463	
v/s Ratio Perm 0.03 0.32 0.07 c0.24 v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 0.1 4.1 9.7 0.6 0.2 3.4 Delay (s) 6.8 14.4 19.4 9.3 10.8 16.3 Level of Service A B B A B B Approach Delay (s) 14.2 11.5 10.8 16.3 Approach LOS B B B B HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72			c0.37			0.25							
v/c Ratio 0.06 0.77 0.68 0.52 0.19 0.66 Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 0.1 4.1 9.7 0.6 0.2 3.4 Delay (s) 6.8 14.4 19.4 9.3 10.8 16.3 Level of Service A B B A B B Approach Delay (s) 14.2 11.5 10.8 16.3 Approach LOS B B B B B Intersection Summary HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72		0.03	00.01		0.32	0.20			0.07			c0 24	
Uniform Delay, d1 6.8 10.4 9.7 8.8 10.6 12.9 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 0.1 4.1 9.7 0.6 0.2 3.4 Delay (s) 6.8 14.4 19.4 9.3 10.8 16.3 Level of Service A B B A B B Approach Delay (s) 14.2 11.5 10.8 16.3 Approach LOS B B B B B Intersection Summary HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72			0.77			0.52							
Progression Factor 1.00 1.00 1.00 1.00 1.00 Incremental Delay, d2 0.1 4.1 9.7 0.6 0.2 3.4 Delay (s) 6.8 14.4 19.4 9.3 10.8 16.3 Level of Service A B B A B B Approach Delay (s) 14.2 11.5 10.8 16.3 Approach LOS B B B B Intersection Summary HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72													
Incremental Delay, d2 0.1 4.1 9.7 0.6 0.2 3.4 Delay (s) 6.8 14.4 19.4 9.3 10.8 16.3 Level of Service A B B A B B Approach Delay (s) 14.2 11.5 10.8 16.3 Approach LOS B B B B Intersection Summary HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72													
Delay (s) 6.8 14.4 19.4 9.3 10.8 16.3 Level of Service A B B A B B Approach Delay (s) 14.2 11.5 10.8 16.3 Approach Dolay (s) 14.2 11.5 10.8 16.3 Approach LOS B B B B Intersection Summary HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72													
Level of Service A B B A B B Approach Delay (s) 14.2 11.5 10.8 16.3 Approach LOS B B B B Intersection Summary B HCM Level of Service B HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72 Actuated Cycle Length (s) 47.9 Sum of lost time (s) 8.0 1 Intersection Capacity Utilization 80.3% ICU Level of Service D Analysis Period (min) 15		6.8	14.4		19.4	9.3			10.8			16.3	
Approach LOS B B B B Intersection Summary HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72 Actuated Cycle Length (s) 47.9 Sum of lost time (s) 8.0 Intersection Capacity Utilization 80.3% ICU Level of Service D Analysis Period (min) 15		A	В		В	А			В			В	
Approach LOS B B B B Intersection Summary HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72 Actuated Cycle Length (s) 47.9 Sum of lost time (s) 8.0 Intersection Capacity Utilization 80.3% ICU Level of Service D Analysis Period (min) 15													
HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72 Actuated Cycle Length (s) 47.9 Sum of lost time (s) 8.0 Intersection Capacity Utilization 80.3% ICU Level of Service D Analysis Period (min) 15													
HCM Average Control Delay 13.3 HCM Level of Service B HCM Volume to Capacity ratio 0.72 Actuated Cycle Length (s) 47.9 Sum of lost time (s) 8.0 Intersection Capacity Utilization 80.3% ICU Level of Service D Analysis Period (min) 15	Intersection Summary												
HCM Volume to Capacity ratio 0.72 Actuated Cycle Length (s) 47.9 Sum of lost time (s) 8.0 Intersection Capacity Utilization 80.3% ICU Level of Service D Analysis Period (min) 15)elav		13.3	H		vel of S	ervice		В			
Actuated Cycle Length (s) 47.9 Sum of lost time (s) 8.0 Intersection Capacity Utilization 80.3% ICU Level of Service D Analysis Period (min) 15						.0111 20		0.1100		5			
Intersection Capacity Utilization 80.3% ICU Level of Service D Analysis Period (min) 15 15 15						Sum of I	ost time	e (s)		8.0			
Analysis Period (min) 15			1					(-)					
						2.5.251				2			

11: Harbor Dr & Bea								
	≯	-	-	•	1	1		
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		ተተ	作る			7 ^e		
Sign Control		Free	Free		Stop			
Grade		0%	0%		0%			
Volume (veh/h)	0	1950	860	20	0	75		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	0	2120	935	22	0	82		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type				F	Raised			
Median storage veh)					0			
Upstream signal (ft)		661	658					
pX, platoon unblocked	0.89				0.39	0.89		
vC, conflicting volume	957				2005	478		
vC1, stage 1 conf vol					946			
vC2, stage 2 conf vol					1060			
vCu, unblocked vol	829				1168	293		
tC, single (s)	4.3				6.8	6.9		
tC, 2 stage (s)					5.8			
tF (s)	2.3				3.5	3.3		
p0 queue free %	100				100	87		
cM capacity (veh/h)	667				142	627		
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1			
Volume Total	1060	1060	623	333	82			
Volume Left	0	0	0	0	0			
Volume Right	0	0	0	22	82			
cSH	1700	1700	1700	1700	627			
Volume to Capacity	0.62	0.62	0.37	0.20	0.13			
Queue Length 95th (ft)	0	0	0	0	11			
Control Delay (s)	0.0	0.0	0.0	0.0	11.6			
Lane LOS					В			
Approach Delay (s)	0.0		0.0		11.6			
Approach LOS					В			
Intersection Summary								
Average Delay			0.3					
Intersection Capacity Ut	ilization		57.2%	IC	CU Lev	el of Service	В	
Analysis Period (min)			15					

Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1.sy7

Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Barrio Logan CPU 13: Logan Ave & Ce	esar E.	Chave	ez Pkv	vy		Horizo	on Yea	r Alt 1	with Ir ד	nprove Timing P		
	≯	+	*	4	+	•	•	Ť	1	1	ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	4	74	'n,	4	7	μ	44	r	Ň	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1759	1863	1544	1764	1863	1549	1530	3059	1323	1530	3018	
Flt Permitted	0.57	1.00	1.00	0.14	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1065	1863	1544	259	1863	1549	1530	3059	1323	1530	3018	
Volume (vph)	130	420	230	120	280	90	140	506	670	114	694	52
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	457	250	130	304	98	152	550	728	124	754	57
RTOR Reduction (vph)	0	0	173	0	0	56	0	0	158	0	7	0
Lane Group Flow (vph)	141	457	77	130	304	42	152	550	571	124	804	0
Confl. Peds. (#/hr)	10		13	13		10			27			27
Confl. Bikes (#/hr)			4			2			3			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Prot	(custom	Prot		
Protected Phases		4			8		5	2	3	1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)	24.5	24.5	24.5	34.4	34.4	34.4	11.9	24.1	30.0	9.5	21.7	
Effective Green, g (s)	24.5	24.5	24.5	34.4	34.4	34.4	11.9	24.1	30.0	9.5	21.7	
Actuated g/C Ratio	0.31	0.31	0.31	0.43	0.43	0.43	0.15	0.30	0.38	0.12	0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	326	571	473	111	801	666	228	922	496	182	819	
v/s Ratio Prot		0.25			0.16		c0.10	0.18	c0.08	0.08	0.27	
v/s Ratio Perm	0.13		0.05	c0.50		0.03			0.35			
v/c Ratio	0.43	0.80	0.16	1.17	0.38	0.06	0.67	0.60	1.15	0.68	0.98	
Uniform Delay, d1	22.2	25.5	20.3	22.8	15.5	13.4	32.2	23.8	25.0	33.8	29.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.96	0.89	1.00	1.00	
Incremental Delay, d2	0.9	7.9	0.2	138.7	0.3	0.0	4.9	1.9	82.9	10.0	27.4	
Delay (s)	23.1	33.4	20.4	161.5	15.8	13.4	31.8	24.8	105.0	43.8	56.4	
Level of Service	С	С	С	F	В	В	С	С	F	D	E	
Approach Delay (s)		27.9			51.0			66.4			54.7	
Approach LOS		С			D			E			D	
Intersection Summary												
HCM Average Control E	Delay		52.6	H	ICM Le	vel of S	ervice		D			
HCM Volume to Capacit			1.04									
Actuated Cycle Length (80.0	ç	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut			83.4%			el of Se			E			
Analysis Period (min)			15									

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	×	4	ž	Υ.	4	7	¥.	† Ъ	λ.	÷	۲	
Volume (vph)	300	400	290	110	270	275	120	1000	120	550	410	
Furn Type	Perm		Perm	Perm		Perm	Perm		Perm		Perm	
Protected Phases		4			8			2		6		
Permitted Phases	4		4	8		8	2		6		6	
Detector Phases	4	4	4	8	8	8	2	2	6	6	6	
Vinimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vinimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0	
otal Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%	
ellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
_ead/Lag												
ead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0	42.0	42.0	42.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.52	0.52	0.52	0.52	0.52	
/c Ratio	0.99	0.62	0.42	0.56	0.42	0.47	0.52	0.71	1.07	0.71	0.49	
Control Delay	76.7	25.2	6.6	31.8	20.9	17.2	16.5	13.4	106.2	10.1	2.3	
Queue Delay	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	4.8	0.9	
Fotal Delay	79.8	25.2	6.6	31.8	20.9	17.2	16.5	13.7	106.2		3.2	
LOS	E	С	A	С	С	В	В	В	F	В	A	
Approach Delay		36.3			21.2			14.0		20.6		
Approach LOS		D			С			В		С		
ntersection Summary												
Cycle Length: 80												
Actuated Cycle Length	n: 80											
Offset: 79 (99%), Refe	erenced t	o phase	2:NBT	L and 6	SBTL,	Start of	Green					
Vatural Cycle: 80												
Control Type: Actuate	d-Coordi	nated										
/aximum v/c Ratio: 1	.07											
ntersection Signal De	lay: 22.6			1	ntersect	tion LOS	S: C					
ntersection Capacity	Utilizatio	n 81.6%			CU Lev	el of Se	rvice D					
Analysis Period (min)	15											

™Î ø2	→ ø4	
46 s	34 s	
↓ _{ø6}	◆ ø8	
46 s	34 s	

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Synchro 6 Report 3/4/2011

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ň	4	101	1	1	1	NDL N	† Ъ	NDIX	N N	1	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1000	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3179		1530	1610	1369
Flt Permitted	0.47	1.00	1.00	0.31	1.00	1.00	0.28	1.00		0.14	1.00	1.00
Satd. Flow (perm)	875	1863	1583	572	1863	1583	480	3179		231	1610	1369
Volume (vph)	300	400	290	110	270	275	120	1000	100	120	550	410
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	435	315	120	293	299	130	1087	109	130	598	446
RTOR Reduction (vph)	0	0	154	0	0	43	0	10	0	0	000	189
Lane Group Flow (vph)	326	435	161	120	293	256	130	1187	0	130	598	257
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm	270	Perm	Perm	270	Perm	Perm	1270	1270	Perm	1070	Perm
Protected Phases	I enn	4	1 enn	1 enn	8	I CIIII	1 enn	2		1 enn	6	I CIII
Permitted Phases	4	4	4	8	0	8	2	2		6	0	e
Actuated Green, G (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0		42.0	42.0	42.0
Effective Green, g (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0		42.0	42.0	42.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.52	0.52		0.52	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	328	699	594	215	699	594	252	1669		121	845	719
v/s Ratio Prot	520	0.23	534	215	0.16	554	252	0.37		121	0.37	110
v/s Ratio Perm	c0.37	0.23	0.10	0.21	0.10	0.16	0.27	0.57		c0.56	0.57	0.19
v/c Ratio	0.99	0.62	0.27	0.56	0.42	0.43	0.52	0.71		1.07	0.71	0.36
Uniform Delay, d1	24.9	20.4	17.4	19.8	18.5	18.6	12.4	14.4		19.0	14.4	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.68	0.75		0.57	0.47	0.59
Incremental Delay, d2	47.8	1.00	0.2	3.1	0.4	0.5	6.9	2.4		85.0	3.1	0.00
Delay (s)	72.7	22.1	17.6	22.9	18.9	19.1	15.3	13.2		95.8	9.7	7.5
Level of Service	12.1 E	C	B	C	B	B	10.0 B	B		55.0 F	A	A
Approach Delay (s)	-	36.1	5	Ŭ	19.7	5	5	13.4			18.4	,
Approach LOS		D			B			В			B	
Intersection Summary												
HCM Average Control D	elay		21.5	F	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit	ty ratio		1.04									
Actuated Cycle Length (80.0	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut			81.6%	10	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									

	٦	-	4	+	1	t	1	ţ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	٦,	Ţ.	16	1.	19	41.	Υç	1.	
Volume (vph)	135	130	90	70	40	795	165	890	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0	
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	15.6	15.6	15.6	15.6	56.4	56.4	56.4	56.4	
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.70	0.70	0.70	0.70	
v/c Ratio	0.72	0.58	0.49	0.49	0.41	0.41	0.61	0.87	
Control Delay	48.7	29.3	35.6	15.9	20.4	5.6	16.7	17.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	
Total Delay	48.7	29.3	35.6	15.9	20.4	5.7	16.7	17.1	
LOS	D	С	D	В	С	A	В	В	
Approach Delay		37.1		22.3		6.4		17.0	
Approach LOS		D		С		A		В	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length									
Offset: 4 (5%), Refere	nced to p	hase 2	NBTL a	and 6:SI	BTL, Sta	art of G	reen		
Natural Cycle: 90									
Control Type: Actuate		nated							
Maximum v/c Ratio: 0									
Intersection Signal De					ntersec				
Intersection Capacity		า 85.4%		1	CU Lev	el of Se	rvice E		
Analysis Period (min)	15								

49 s	31 s
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49 s	31 s

Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1.sy7

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Synchro 6 Report 3/4/2011

15: Newton Ave & C		. Una		wy						g.	Plan: PN	TT Car
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ţ,		Ж	Į.		Υç	416		7	T.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.95		1.00	0.91		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1765		1770	1686		1612	3189		1612	1682	
Flt Permitted	0.45	1.00		0.43	1.00		0.15	1.00		0.28	1.00	
Satd. Flow (perm)	847	1765		801	1686		257	3189		477	1682	
Volume (vph)	135	130	70	90	70	120	40	795	60	165	890	55
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	141	76	98	76	130	43	864	65	179	967	60
RTOR Reduction (vph)	0 147	30 187	0	0	93	0	0 43	5	0	0	2 1025	0
Lane Group Flow (vph) Heavy Vehicles (%)	2%	2%	0 2%	98 2%	113 2%	2%	43	924 12%	12%	179 12%	1025	12%
		2 /0	2 /0	Perm	2 /0	2 /0	Perm	12/0	12/0	Perm	12 /0	12/0
Turn Type Protected Phases	Perm	4		Peim	8		Pelli	2		Peim	6	
Permitted Phases	4	4		8	0		2	2		6	0	
Actuated Green, G (s)	15.6	15.6		15.6	15.6		56.4	56.4		56.4	56.4	
Effective Green, g (s)	15.6	15.6		15.6	15.6		56.4	56.4		56.4	56.4	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.70	0.70		0.70	0.70	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	165	344		156	329		181	2248		336	1186	
v/s Ratio Prot		0.11			0.07			0.29			c0.61	
v/s Ratio Perm	c0.17			0.12			0.17			0.38		
v/c Ratio	0.89	0.54		0.63	0.34		0.24	0.41		0.53	0.86	
Uniform Delay, d1	31.4	29.0		29.5	27.8		4.2	4.9		5.6	8.9	
Progression Factor	1.00	1.00		1.00	1.00		0.91	0.89		0.71	0.66	
Incremental Delay, d2	40.3	1.8		7.7	0.6		2.7	0.5		5.2	7.5	
Delay (s)	71.7	30.8		37.2	28.4		6.5	4.9		9.1	13.4	
Level of Service	E	С		D	С		A	А		A	В	
Approach Delay (s)		47.3			31.2			4.9			12.7	
Approach LOS		D			С			А			В	
Intersection Summary												
HCM Average Control D)elay		16.5	F	ICM Le	vel of S	ervice		В			
HCM Volume to Capacit			0.87									
Actuated Cycle Length (80.0			ost time			8.0			
Intersection Capacity Ut	ilization		85.4%	10	CU Lev	el of Sei	vice		E			
Analysis Period (min)			15									

Barrio Logan CPU Horizon Year Alt 1 with Improvements Alt 1 16: Main St & Cesar E. Chavez Pkwy Timing Plan: PM Peak ٦ -Lane Group EBL EBT WBL WBT WBR NBL NBT SBL SBT Lane Configurations 4% T. Ъ Volume (vph) 120 290 70 230 270 70 640 250 540 Turn Type Perm Perm Perm Perm Perm Protected Phases 2 6 4 8 Permitted Phases 4 8 8 2 6 Detector Phases 4 8 2 4 8 8 2 6 6 Minimum Initial (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Minimum Split (s) 31.0 31.0 31.0 31.0 31.0 27.0 27.0 27.0 27.0 Total Split (s) 44.0 44.0 44.0 44.0 36.0 36.0 36.0 36.0 36.0 Total Split (%) 45.0% 45.0% 45.0% 45.0% 55.0% 55.0% 55.0% 55.0% 45.0% Yellow Time (s) 3.5 3.5 3.5 3.5 3.5 3.5 3.5 35 35 All-Red Time (s) 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 Lead/Lag Lead-Lag Optimize? Recall Mode None None None None C-Min C-Min C-Min C-Min Act Effct Green (s) 20.1 20.1 20.1 20.1 20.1 51.9 51.9 51.9 51.9 Actuated g/C Ratio 0.25 0.25 0.25 0.25 0.25 0.65 0.65 0.65 0.65 v/c Ratio 0.53 0.74 0.38 0.54 0.58 0.72 0.46 1.08 0.86 Control Delay 32.3 35.9 28.4 29.0 15.6 55.9 8.4 85.0 16.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 1.2 0.0 4.3 Total Delay 32.3 35.9 28.4 29.0 15.6 55.9 9.6 85.0 21.3 LOS С С D С С В Е Α F Approach Delay 34.9 22.6 13.3 36.4 Approach LOS D С С В Intersection Summary Cycle Length: 80 Actuated Cycle Length: 80 Offset: 6 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.08 Intersection Signal Delay: 26.5 Intersection LOS: C Intersection Capacity Utilization 85.9% ICU Level of Service E Analysis Period (min) 15 Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy

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44 s	36 s
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44 s	36 s

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Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1.sy7

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Synchro 6 Report 3/4/2011

Barrio Logan CPU 16: Main St & Cesa	r E. Ch	avez F	Pkwy			Horizo	n Yea	r Alt 1		nprove Timing P		
	۶	+	*	4	ł	×	≺	1	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ţ,		μ,	A.	7	Υç	412		7	T.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1836		1751	1863	1535	1549	2974		1542	1534	
Flt Permitted	0.43	1.00		0.28	1.00	1.00	0.19	1.00		0.28	1.00	
Satd. Flow (perm)	800	1836		512	1863	1535	317	2974		459	1534	
Volume (vph)	120	290	25	70	230	270	70	640	180	250	540	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	315	27	76	250	293	76	696	196	272	587	283
RTOR Reduction (vph)	0	4	0	0	0	118	0	23	0	0	15	0
Lane Group Flow (vph)	130	338	0	76	250	175	76	869	0	272	855	0
Confl. Peds. (#/hr)	19		24	24		19	16		20	20		16
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4		_	8	-	-	2		_	6	_
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	20.1	20.1		20.1	20.1	20.1	51.9	51.9		51.9	51.9	
Effective Green, g (s)	20.1	20.1		20.1	20.1	20.1	51.9	51.9		51.9	51.9	
Actuated g/C Ratio	0.25	0.25		0.25	0.25	0.25	0.65	0.65		0.65	0.65	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	201	461		129	468	386	206	1929		298	995	
v/s Ratio Prot	0.40	c0.18		0.45	0.13	~		0.29		0.50	0.56	
v/s Ratio Perm	0.16			0.15		0.11	0.24	0.45		c0.59		
v/c Ratio	0.65	0.73		0.59	0.53	0.45	0.37	0.45		0.91	0.86	
Uniform Delay, d1	26.8	27.5		26.3	25.9	25.3	6.5	7.0		12.1	11.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.65	0.66	
Incremental Delay, d2	7.0	5.9		6.7	1.2	0.8	5.0	0.8		22.3	5.6	
Delay (s)	33.8 C	33.4 C		33.0 C	27.1 C	26.1 C	11.5 B	7.7 A		30.1 C	12.9 B	
	C			U	27.4	U	D			U		
Level of Service								8.0			17.0	
Approach Delay (s)		33.5						^			P	
		33.5 C			C			A			В	
Approach Delay (s)								A			В	
Approach Delay (s) Approach LOS)elay		18.7	ŀ	С	vel of S	ervice	A	В		B	
Approach Delay (s) Approach LOS Intersection Summary			18.7 0.86	ŀ	С	vel of S	ervice	A	В		В	
Approach Delay (s) Approach LOS Intersection Summary HCM Average Control I	ty ratio				C ICM Le	vel of S		A	B 8.0		B	
Approach Delay (s) Approach LOS Intersection Summary HCM Average Control I HCM Volume to Capaci	ty ratio (s)	С	0.86	5	C ICM Le Sum of I		(s)	A			B	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ار لر	仲孙		74	41+		μ	4	٣		4	Ì
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.(
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98		1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	1.00	0.85		1.00	0.8
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.97	1.00
Satd. Flow (prot)	3183	3265		1421	3232		1363	1439	1109		1596	1382
Flt Permitted	0.95	1.00		0.95	1.00		0.71	1.00	1.00		0.84	1.00
Satd. Flow (perm)	3183	3265		1421	3232		1021	1439	1109		1381	1382
Volume (vph)	468	1500	40	50	465	43	50	63	35	33	30	324
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	509	1630	43	54	505	47	54	68	38	36	33	352
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	33	0	0	11
Lane Group Flow (vph)	509	1672	0	54	547	0	54	68	5	0	69	24
Confl. Peds. (#/hr)			11			6	4		1	1		4
Confl. Bikes (#/hr)			9			14			3			
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%
Turn Type	Prot			Prot			Perm		Perm	Perm	F	p <mark>m+o</mark> \
Protected Phases	3	1426		13	1826			12			1 5 16	3
Permitted Phases							12		12	1 5 16		1510
Actuated Green, G (s)	23.9	53.3		6.2	35.6		13.3	13.3	13.3		21.5	45.4
Effective Green, g (s)	23.9	53.3		6.2	35.6		13.3	13.3	13.3		21.5	45.4
Actuated g/C Ratio	0.22	0.49		0.06	0.33		0.12	0.12	0.12		0.20	0.42
Clearance Time (s)	4.0			4.0			4.0	4.0	4.0			4.(
Vehicle Extension (s)	3.0			3.0			3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	698	1597		81	1056		125	176	135		272	620
v/s Ratio Prot	c0.16	c0.51		0.04	0.17			0.05				c0.08
v/s Ratio Perm							c0.05		0.00		0.05	0.0
v/c Ratio	0.73	1.05		0.67	0.52		0.43	0.39	0.03		0.25	0.39
Uniform Delay, d1	39.5	27.8		50.4	29.7		44.3	44.1	42.2		37.0	22.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.21	0.8
Incremental Delay, d2	3.8	35.9		18.8	0.4		2.4	1.4	0.1		0.5	0.4
Delay (s)	43.4	63.8		69.2	30.2		46.7	45.5	42.3		45.0	18.0
Level of Service	D	E		E	С		D	D	D		D	E
		59.0			33.7			45.2			22.5	
Approach Delay (s)								D				
		E			С			U			С	
Approach Delay (s)					С			U			C	
Approach Delay (s) Approach LOS	Delay		49.2	F		vel of S	ervice		D		U	
Approach Delay (s) Approach LOS Intersection Summary			49.2 0.88	F		vel of S	ervice		D			
Approach Delay (s) Approach LOS Intersection Summary HCM Average Control I HCM Volume to Capaci	ty ratio				ICM Lev	vel of Se			D 28.0			
Approach Delay (s) Approach LOS Intersection Summary HCM Average Control D	ty ratio (s)	E	0.88	S	ICM Lev		(S)					
Approach Delay (s) Approach LOS Intersection Summary HCM Average Control E HCM Volume to Capaci Actuated Cycle Length (ty ratio (s)	E	0.88 109.0	S	ICM Lev	ost time	(s)		28.0		U	

c Critical Lane Group

Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1.sy7

Kimley-Horn and Associates, Inc.

Barrio Logan CPU 23: Logan Ave & Sa	mpson	St		Horizon Year Alt 1 with Improvements Alt 1 Timing Plan: PM Peak								
	>	-	¥	1	+	•	٩	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Ţ.)r	1.		Υç	Ъ		7	Ĩ.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.94		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1739		1770	1756		1770	1806		1770	1849	
Flt Permitted	0.64	1.00		0.20	1.00		0.55	1.00		0.34	1.00	
Satd. Flow (perm)	1197	1739		367	1756		1019	1806		642	1849	
Volume (vph)	108	255	203	143	87	54	235	400	101	66	256	13
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	277	221	155	95	59	255	435	110	72	278	14
RTOR Reduction (vph)	0	39	0	0	30	0	0	8	0	0	2	0
Lane Group Flow (vph)	117	459	0	155	124	0	255	537	0	72	290	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	25.4	25.4		25.4	25.4		41.7	41.7		41.7	41.7	
Effective Green, g (s)	25.4	25.4		25.4	25.4		41.7	41.7		41.7	41.7	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.56	0.56		0.56	0.56	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	405	588		124	594		566	1003		356	1027	
v/s Ratio Prot		0.26			0.07			c0.30			0.16	
v/s Ratio Perm	0.10			c0.42			0.25			0.11		
v/c Ratio	0.29	0.78		1.25	0.21		0.45	0.53		0.20	0.28	
Uniform Delay, d1	18.2	22.3		24.8	17.7		9.9	10.6		8.4	8.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	6.7		162.7	0.2		2.6	2.0		1.3	0.7	
Delay (s)	18.6	29.0		187.5	17.9		12.5	12.6		9.6	9.5	
Level of Service	В	С		F	В		В	В		A	A	
Approach Delay (s)		27.0			103.0			12.6			9.5	
Approach LOS		С			F			В			A	
Intersection Summary												
HCM Average Control D			29.7	F	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit			0.81									
Actuated Cycle Length (75.1			ost time			8.0			
Intersection Capacity Uti	ilization		77.9%	10	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

	≯	-	\mathbf{r}	<	+	•	1	1	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		ţ,)r	4		, H		٣		1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	194	16	49	79	0	7	0	261	28	12	ł
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Hourly flow rate (vph)	0	211	17	53	86	0	8	0	284	30	13	ę
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1						(
Volume Total (vph)	228	53	86	8	284	52						
Volume Left (vph)	0	53	0	8	0	30						
Volume Right (vph)	17	0	0	0	284	9						
Hadj (s)	-0.01	1.10	0.03	0.23	-0.41	0.05						
Departure Headway (s)	4.3	5.9	4.8	5.1	3.2	4.8						
Degree Utilization, x	0.27	0.09	0.12	0.01	0.25	0.07						
Capacity (veh/h)	821	591	722	656	1112	695						
Control Delay (s)	8.9	8.3	7.3	8.1	7.3	8.2						
Approach Delay (s)	8.9	7.7		7.3		8.2						
Approach LOS	A	A		A		A						
Intersection Summary												
Delay			8.0									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	i	42.2%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1.sy7

Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

	Horizo	n Yea	r Alt 1			ements Plan: PM	
•	×	1	1	1	1	ţ	~
г	WBR	NBL	NBT	NBR	SBL	SBT	SBR
					001	02.	#
1	1900	1900	1900	1900	1900	1900	1900
)							4.0
							1.00
							1.00
							1.00
							0.86
							1.00
							1454
							1.00
							1454
	39	0	0	0	0	0	51
	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	42	0	0	0	0	0	55
	0	0	0	0	0	0	50
	0	0	0	0	0	0	5
				2	2		
				4			9
	2%	2%	2%	2%	2%	4%	13%
							Over
							13
							9.8
							9.8
							0.09
							4.0
							3.0
							138
							0.00
							0.04
							42.4
							1.00
							0.1
							42.5
							D
			0.0			42.5	
			А			D	
2	vel of Se	ervice		В			
0	ost time	(s)		35.7			
		1-1		00			

Analysis Period (min) c Critical Lane Group

Actuated Cycle Length (s)

Barrio Logan CPU

Lane Configurations

Ideal Flow (vphpl)

Total Lost time (s)

Lane Util. Factor

Frpb, ped/bikes

Flpb, ped/bikes

Satd. Flow (prot)

Satd. Flow (perm)

Peak-hour factor, PHF

RTOR Reduction (vph)

Lane Group Flow (vph)

Flt Protected

Flt Permitted

Volume (vph)

Adj. Flow (vph)

Confl. Peds. (#/hr)

Confl. Bikes (#/hr)

Protected Phases

Permitted Phases

Actuated Green, G (s)

Effective Green, g (s) Actuated g/C Ratio

Clearance Time (s)

Vehicle Extension (s)

Lane Grp Cap (vph)

v/s Ratio Prot

v/c Ratio

Delay (s)

v/s Ratio Perm

Uniform Delay, d1

Level of Service

Approach LOS

Approach Delay (s)

Intersection Summary HCM Average Control Delay

HCM Volume to Capacity ratio

Intersection Capacity Utilization

Progression Factor

Incremental Delay, d2

Turn Type

Heavy Vehicles (%)

Frt

Movement

32: Harbor Dr & Schley St

۶

EBL

1900

4.0

1.00 0.95

1.00 1.00

1.00

1.00

0.95

1543 3539

0.95

83 1520

90 1652

0

17%

Prot

0.09

4.0

3.0

44.9

1.00

7.3

52.2

D

90 1652

13 1826

9.8 67.5 9.8 67.5

147 2315

0.06 c0.47

0.61 0.71

0.92

1543 3539

η

→ `¥

†1 1900

4.0

1.00

1.00

1.00

1.00

0.92

0

2%

0.65

11.6

1.00

1.1

В

В

16.0

0.71

103.2

15

45.4%

12.6

14.7

< +

1900 1900

0

0

0

0

8

2%

0.92

EBT EBR WBL WBT WBR NBL NBT NBR

1 1900

4.0

0.95

1.00

1.00

0.99

1.00

3506

1.00

3506

0

0 639

0

0 677

8

2%

0.92

588

0.92

4

2%

1426

49.7

49.7

0.48

1688

0.19

0.40

17.2

1.00

0.2

17.3

17.3

В

B

HCM Level of Service

Sum of lost time (s)

ICU Level of Service

А

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Synchro 6 Report 3/4/2011

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	٦	-	•	-	-	~		Т	-	•	Ŧ	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Lane Configurations	ካካ	ተቀ	7*	14	44	7		et.		77	4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00		0.97	1.00	1.0
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00	0.92		1.00		1.00	1.00	0.9
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.0
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00	1.00	0.8
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.0
Satd. Flow (prot)	3303	3406	1341	1719	3438	1419		1821		3367	1827	153
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.0
Satd. Flow (perm)	3303	3406	1341	1719	3438	1419		1821		3367	1827	153
Volume (vph)	140	1390	2	14	524	278	10	134	0	505	12	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	152	1511	2	15	570	302	11	146	0	549	13	
RTOR Reduction (vph)	0	0	1	0	0	175	0	0	0	0	0	
Lane Group Flow (vph)	152	1511	1	15	570	127	0	157	0	549	13	
Confl. Peds. (#/hr)			69			80						
Confl. Bikes (#/hr)			2						4			
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4
Turn Type	Prot	C	ustom	Prot	C	ustom	Split			Split		Per
Protected Phases	11	1626		15	1226	13	14	14		1 13 5	1315	
Permitted Phases			16			12						15
Actuated Green, G (s)	11.2	53.7	47.2	1.3	43.8	57.5		21.3		28.8	28.8	28
Effective Green, g (s)	11.2	53.7	47.2	1.3	43.8	57.5		21.3		28.8	28.8	28
Actuated g/C Ratio	0.08	0.39	0.34	0.01	0.32	0.42		0.16		0.21	0.21	0.2
Clearance Time (s)	4.0		4.0	4.0		4.0		4.0				
Vehicle Extension (s)	3.0		3.0	3.0		3.0		3.0				
Lane Grp Cap (vph)	270	1334	462	16	1098	595		283		707	384	3
v/s Ratio Prot	c0.05	c0.44		0.01	0.17	0.03		c0.09		c0.16	0.01	
v/s Ratio Perm			0.00			0.06						0.
v/c Ratio	0.56	1.13	0.00	0.94	0.52	0.21		0.55		0.78	0.03	0.
Uniform Delay, d1	60.6	41.7	29.5	67.9	38.1	25.4		53.5		51.1	43.1	42
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.94	0.95	1.
Incremental Delay, d2	2.7	69.6	0.0	191.7	0.4	0.2		2.4		5.3	0.0	C
Delay (s)	63.3	111.3	29.5	259.6	38.5	25.6		55.9		53.5	41.0	57
Level of Service	E	F	C	F	D	C		E		D	D	0.
Approach Delay (s)	-	106.8	Ŭ	•	37.8	Ū		55.9		2	53.3	
Approach LOS		F			D			E			D	
								-				
Intersection Summary HCM Average Control E)elav		76.4			vel of Se	anvice		E			
HCM Volume to Capaci			0.92				er vice		C .			
Actuated Cycle Length (137.1	0	um of I	ost time	(\mathbf{c})		32.0			
Intersection Capacity Ut			77.1%			el of Ser	· · /		32.0 D			
menseulum capacity Ut	mzauor		11.1/0	I. I.			VILE		U			
Analysis Period (min)			15									
Analysis Period (min) c Critical Lane Group			15									

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K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1.sy7

Kimley-Horn and Associates, Inc.

Barrio Logan CPU

Lane Configurations

Ideal Flow (vphpl)

Total Lost time (s)

Lane Util. Factor

Satd. Flow (prot)

Satd. Flow (perm)

Peak-hour factor, PHF

RTOR Reduction (vph)

Lane Group Flow (vph)

Heavy Vehicles (%)

Protected Phases

Permitted Phases

Actuated Green, G (s)

Effective Green, g (s)

Actuated g/C Ratio

Clearance Time (s)

Vehicle Extension (s)

Lane Grp Cap (vph)

v/s Ratio Prot

Delay (s)

v/s Ratio Perm v/c Ratio

Uniform Delay, d1

Progression Factor

Level of Service

Approach LOS

Approach Delay (s)

Intersection Summary HCM Average Control Delay

Analysis Period (min)

c Critical Lane Group

HCM Volume to Capacity ratio

Intersection Capacity Utilization

Actuated Cycle Length (s)

Incremental Delay, d2

Flt Protected

Flt Permitted

Volume (vph)

Adj. Flow (vph)

Turn Type

Movement

Frt

34: Boston Ave & 28th St

٦

EBL

1900 1900

4.0

1.00 1.00

1.00 0.91

0.95

1687

0.62

1095

320

0.92

348

348

7%

Perm

0 58

4

32.7

32.7 32.7

0.33

4.0

3.0

360

c0.32

0.97

32.9 26.1

1.00 1.00

38.2

Е

71.1 26.6

Υ

1

1900

4.0

1.00

1.00 0.92

0.95

1687

0.43

771

60

65

0

65

7%

8

32.7

32.7

0.33

4.0

3.0

253

0.08

0.26 0.21

24.5

1.00 1.00

0.5

С

25.0 24.3

Perm

0.92

EBT EBR WBL WBT WBR NBL

1.

1900

70

76

0

0 54 1243

7%

0.92

1900

4.0

1.00

1.00

1643

1.00

1643

70

76

37

115

7%

8

32.7

32.7

0.33

4.0

3.0

540

0.07

24.1

0.2

С

C

HCM Level of Service

Sum of lost time (s)

ICU Level of Service

24.5

0.92

· ` -

1900

160

0.92

174

0

0

7%

Т,

4.0

1.00

1612

1.00

1612

100

0.92

109

225

7%

4

32.7

0.33

4.0

3.0

530

0.14

0.42

0.5

С

D

36.1

0.94

99.5

15

85.1%

51.1

Synchro 6 Report 3/4/2011

Horizon Year Alt 1 with Improvements Alt 1

NBT NBR SBL

1900

100

0.92

109

2%

0

0 272 1403

4%

4.0

0.99

1.00

3493

1.00

3493

0.92

7

2%

2

38.8

0.39

4.0

3.0

0.91

28.7

10.8

39.5

39.9

D

D

D

12.0

Е

1900

*

1900

4.0

1.00 0.95

1.00

0.95

1770

0.95

1770

0.92

50 1050

54 1141

2%

Prot

5

6.1

6.1 38.8

4.0

3.0

109 1362

0.50

45.2

1.00 1.00

48.7

3.5

D

0.03 c0.36

0.06

0

Timing Plan: PM Peak

141

1900

4.0

0.97

1.00

4931

1.00

4931

1060

0.92

2%

6

48.7

48.7

0.49

4.0

3.0

0.28

0.58

18.1

1.00

1.0

В

С

19.2

29.1

7

1900

4.0

1.00 0.91

1.00

0.95

1770

0.95

1770

250

0.92

272 1152

2%

Prot

16.0

16.0

0.16

4.0

3.0

285 2413

c0.15

0.95

41.4

1.00

40.7

82.1

F

1

0 42

SBT SBR

1900

270

0.92

293

0

0

2%

	≯		\mathbf{r}	1	-	•	•	†	-	1	Ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		<u>م</u>	LDIX	WDL	4	WDIX	NDL	4.	NDI	ODL		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1000	4.0	1500	1000	4.0	1300	1300	4.0	1300	1000	1000	1000
Lane Util. Factor		1.00			1.00			1.00				
Frt		0.99			0.93			0.98				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1709			1640			1650				
Flt Permitted		0.97			1.00			1.00				
Satd. Flow (perm)		1709			1640			1650				
Volume (vph)	299	153	27	20	83	118	9	332	45	0	0	(
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	325	166	29	22	90	128	10	361	49	0.32	0.32	0.52
RTOR Reduction (vph)	0	3	0	0	55	0	0	6	0	0	0	(
Lane Group Flow (vph)	0	517	0	0	185	0	0	414	0	0	0	(
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	15%	2%	2%	2%	2%
Turn Type	Split	1 /0	1 70	Split	1 70	1 /0	Perm	1370	2 /0	2 /0	2 /0	2/0
Protected Phases	Spiit 4	4		Spiit 8	8		Feilii	2				
Permitted Phases	4	4		0	0		2	2				
Actuated Green, G (s)		23.8			9.7		2	20.4				
Effective Green, g (s)		23.8			9.7			20.4				
Actuated g/C Ratio		0.36			0.15			0.31				
Clearance Time (s)		4.0			4.0			4.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		617			241			511				
v/s Ratio Prot		c0.30			c0.11			511				
v/s Ratio Perm		0.30			0.11			0.25				
v/c Ratio		0.84			0.77			0.23				
Uniform Delay, d1		19.3			27.0			21.0				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		9.7			13.7			9.5				
Delay (s)		29.0			40.8			30.4				
Level of Service		23.0 C			40.0			50.4 C				
Approach Delay (s)		29.0			40.8			30.4			0.0	
Approach LOS		20.0 C			-0.0 D			00.4 C			A	
Intersection Summary												
HCM Average Control D	elay		31.9	F	ICM Le	vel of S	ervice		С			
HCM Volume to Capacity			0.82									
Actuated Cycle Length (s			65.9	S	Sum of I	ost time	(s)		12.0			
Intersection Capacity Uti			69.6%			el of Se			С			
Analysis Period (min)			15									

Horizon Year Alt 1 with Improvements Alt 1

Barrio Logan CPU 39: 32nd St & Waba	ash St					Horizo	on Yea	r Alt 1		nprove Timing F		
	≯	_#	-	\mathbf{F}	4	+	•	۲	•	Ť	۲	1
Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations		25	To			4	đ		74	÷	75	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00	1.00	0.88	
Frt		1.00	0.91			1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00			0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1752	1690			1796	1568		1719	1810	2707	
Flt Permitted		0.50	1.00			0.48	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		916	1690			899	1568		1719	1810	2707	
Volume (vph)	115	115	80	130	140	50	210	205	140	360	560	240
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	125	87	141	152	54	228	223	152	391	609	261
RTOR Reduction (vph)	0	0	48 180	0	0	0 206	0 451	0	0 152	0	0	0
Lane Group Flow (vph)	2%	250 4%	2%	2%	2%	206	451 2%	4%	5%	391 5%	870 5%	0 5%
Heavy Vehicles (%)	Perm	Perm	2 /0	2 /0	Perm	2 /0	Perm	4 /0	Prot		ustom	576
Turn Type Protected Phases	Peim	Penn	4		Pelli	4	Pelli		5	2	usiom	
Permitted Phases	4	4	4		4	4	4		5	2	23	
Actuated Green, G (s)	4	32.1	32.1		4	32.1	32.1		14.8	24.1	46.1	
Effective Green, g (s)		32.1	32.1			32.1	32.1		14.8	24.1	46.1	
Actuated g/C Ratio		0.28	0.28			0.28	0.28		0.13	0.21	0.40	
Clearance Time (s)		4.0	4.0			4.0	4.0		4.0	4.0	0.10	
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		255	471			251	437		221	379	1083	
v/s Ratio Prot		200	0.11			201	.0.		0.09	c0.22		
v/s Ratio Perm		0.27				0.23	c0.29				c0.32	
v/c Ratio		0.98	0.38			0.82	1.03		0.69	1.03	0.80	
Uniform Delay, d1		41.2	33.6			38.9	41.6		48.0	45.6	30.5	
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		50.7	0.5			18.9	51.5		8.6	54.6	4.4	
Delay (s)		91.9	34.1			57.8	93.1		56.6	100.2	34.9	
Level of Service		F	С			E	F		E	F	С	
Approach Delay (s)			64.3			82.0				55.3		
Approach LOS			E			F				E		
Intersection Summary												
HCM Average Control E	Delay		75.4	F	ICM Le	vel of S	ervice		E			
HCM Volume to Capaci			1.03									
Actuated Cycle Length			115.2	S	Sum of I	ost time	e (s)		12.0			
Intersection Capacity Ut	ilization	1	04.7%	10	CU Lev	el of Se	rvice		G			
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group

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Barrio Logan CPU

Barrio Logan CPU 39: 32nd St & Wabash St Horizon Year Alt 1 with Improvements Alt 1 Timing Plan: PM Peak

	F	1	ţ	~	6	¥	~	t	
Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2	
Lane Configurations		ž	介わ			2.44			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			4.0			
Lane Util. Factor		1.00	0.95			0.97			
Frt		1.00	0.99			0.95			
Flt Protected		0.95	1.00			0.97			
Satd. Flow (prot)		1767	3407			3269			
Flt Permitted		0.95	1.00			0.89			
Satd. Flow (perm)		1767	3407			3022			
Volume (vph)	35	415	380	30	10	140	55	10	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	38	451	413	33	11	152	60	11	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	489	446	0	0	234	0	0	
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%	
Turn Type	Prot	Prot			Perm				
Protected Phases	1	1	6			3			
Permitted Phases					3				
Actuated Green, G (s)		25.0	34.3			18.0			
Effective Green, g (s)		25.0	34.3			18.0			
Actuated g/C Ratio		0.22	0.30			0.16			
Clearance Time (s)		4.0	4.0			4.0			
Vehicle Extension (s)		3.0	3.0			3.0			
Lane Grp Cap (vph)		383	1014			472			
v/s Ratio Prot		c0.28	0.13						
v/s Ratio Perm						0.08			
v/c Ratio		1.28	0.44			0.50			
Uniform Delay, d1		45.1	32.7			44.4			
Progression Factor		1.00	1.00			1.00			
Incremental Delay, d2		143.4	0.3			0.8			
Delay (s)		188.5	33.0			45.3			
Level of Service		F	С			D			
Approach Delay (s)			114.3			45.3			
Approach LOS			F			D			
Intersection Summary									

Barrio Logan CPU 40: Harbor Dr & 32n	nd St					Horizo	n Yea	r Alt 1			ements Plan: PN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	外外	r,	Υ.	44	7	Υ¢	44	ř	ž	44	ň
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1538	1687	3374	1478	1719	3438	1498	1719	3438	1523
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1538	1687	3374	1478	1719	3438	1498	1719	3438	1523
Volume (vph)	140	1185	100	40	436	460	70	690	140	310	280	200
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	1288	109	43	474	500	76	750	152	337	304	217
RTOR Reduction (vph)	0	0	33	0	0	386	0	0	67	0	0	104
Lane Group Flow (vph)	152	1288	76	43	474	114	76	750	85	337	304	113
Confl. Bikes (#/hr)						7			12			10
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	C	custom	Prot	(custom	Prot		Perm	Prot	C	custom
Protected Phases	3	1426	15	13	1826		15	12		11 1 5	16 1 5	315
Permitted Phases			14			18			12			16
Actuated Green, G (s)	15.2	38.3	42.0	4.0	27.1	22.1	8.7	23.1	23.1	25.1	43.5	54.7
Effective Green, g (s)	15.2	38.3	42.0	4.0	27.1	22.1	8.7	23.1	23.1	25.1	43.5	54.7
Actuated g/C Ratio	0.12	0.31	0.34	0.03	0.22	0.18	0.07	0.19	0.19	0.20	0.36	0.45
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	213	1075	527	55	746	267	122	648	282	352	1221	730
v/s Ratio Prot	c0.09	c0.37	0.01	0.03	0.14		0.04	c0.22		c0.20	0.09	0.03
v/s Ratio Perm			0.04			0.08			0.06			0.04
v/c Ratio	0.71	1.20	0.14	0.78	0.64	0.43	0.62	1.16	0.30	0.96	0.25	0.15
Uniform Delay, d1	51.6	42.1	27.8	58.8	43.2	44.6	55.3	49.7	42.7	48.2	27.9	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	1.11
Incremental Delay, d2	10.8	98.3	0.1	50.5	1.8	1.1	9.5	87.4	0.6	36.4	0.1	0.1
Delay (s)	62.3	140.4	28.0	109.3	45.0	45.7	64.8	137.1	43.3	81.4	26.3	22.4
Level of Service	E	F	С	F	D	D	E	F	D	F	С	C
Approach Delay (s)		124.9			48.1			116.9			47.0	
Approach LOS		F			D			F			D	
Intersection Summary												
HCM Average Control D	Delav		90.2	H	ICM Le	vel of S	ervice		F			
HCM Volume to Capacit			1.11									
Actuated Cycle Length (122.5	S	Sum of I	ost time	(s)		32.0			
Intersection Capacity Ut			85.7%			el of Sei			E			
Analysis Period (min)			15									
c Critical Lane Group												

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Barrio Logan CPU	
42: I-5 SB off-ramp & 28th St	

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Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations		r,		44	444			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		4.0		4.0	4.0			
Lane Util. Factor		1.00		0.95	0.91			
Frt		0.86		1.00	1.00			
Flt Protected		1.00		1.00	1.00			
Satd. Flow (prot)		1611		3539	5085			
Flt Permitted		1.00		1.00	1.00			
Satd. Flow (perm)		1611		3539	5085			
Volume (vph)	0	822	0	1440	758	0		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	0	893	0	1565	824	0		
RTOR Reduction (vph)	0	6	0	0	0	0		
Lane Group Flow (vph)	0	887	0	1565	824	0		
Turn Type	С	ustom						
Protected Phases				246	6			
Permitted Phases		4						
Actuated Green, G (s)		35.7		59.7	16.0			
Effective Green, g (s)		35.7		59.7	16.0			
Actuated g/C Ratio		0.60		1.00	0.27			
Clearance Time (s)		4.0			4.0			
Vehicle Extension (s)		3.0			3.0			
Lane Grp Cap (vph)		963		3539	1363			
v/s Ratio Prot				0.44	c0.16			
v/s Ratio Perm		c0.55						
v/c Ratio		0.92		0.44	0.60			
Uniform Delay, d1		10.7		0.0	19.1			
Progression Factor		1.00		1.00	1.00			
Incremental Delay, d2		13.7		0.1	0.8			
Delay (s)		24.4		0.1	19.9			
Level of Service		С		A	В			
Approach Delay (s)	24.4			0.1	19.9			
Approach LOS	С			Α	В			
Intersection Summary								
HCM Average Control E			11.7	F	ICM Lev	el of Service	В	
HCM Volume to Capacit			0.82					
Actuated Cycle Length (59.7			ost time (s)	8.0	
Intersection Capacity Ut	ilization		72.2%	10	CU Leve	el of Service	С	
Analysis Period (min)			15					
c Critical Lane Group								

Barrio Logan CPU <u>1: Commercial St & 1</u>	16th S	it				Hori	zon Ye	ear Alt			p roven Ian: AM	
	_#	-	$\mathbf{\hat{z}}$	4	+	•	•	t	۲	1	Ŧ	∢
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		74	4			476			47>	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		1.00		0.95	0.95			0.95			0.95	
Frpb, ped/bikes		1.00		1.00	0.99			1.00			0.98	
Flpb, ped/bikes		1.00		0.99	1.00			1.00			1.00	
Frt		0.98		1.00	0.96			0.99			0.95	
Flt Protected		1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)		1821		1664	1686			3505			3301	
Flt Permitted		0.96		0.51	1.00			0.94			0.89	
Satd. Flow (perm)		1760		900	1686			3284			2949	
Volume (vph)	17	226	31	23	299	112	15	360	18	43	270	138
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	246	34	25	325	122	16	391	20	47	293	150
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	43	0
Lane Group Flow (vph)	0	293	0	25	447	0	0	427	0	0	447	0
Confl. Peds. (#/hr)			15	15		16	36			12		36
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8		-	2		-	6	
Permitted Phases	4	10 -		8	10 5		2			6	07.4	
Actuated Green, G (s)		19.5		19.5	19.5			27.4			27.4	
Effective Green, g (s)		19.5		19.5	19.5			27.4			27.4	
Actuated g/C Ratio		0.36		0.36	0.36			0.50			0.50	
Clearance Time (s)		4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		625		320	599			1639			1472	
v/s Ratio Prot		0.47		0.00				0.40			o / =	
v/s Ratio Perm		0.17		0.03	0.27			0.13			c0.15	
v/c Ratio		0.47		0.08	0.75			0.26			0.30	
Uniform Delay, d1		13.7		11.7	15.5			7.9			8.1	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		0.6		0.1	5.0			0.4			0.5	
Delay (s)		14.2 B		11.8 B	20.6 C			8.3 A			8.6 A	
Level of Service				D				8.3				
Approach Delay (s)		14.2 B			20.1 C			8.3 A			8.6 A	
Approach LOS		В			U			A			A	
Intersection Summary												
HCM Average Control D			12.8	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capacit	y ratio		0.49									
Actuated Cycle Length (s)		54.9	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Uti	lization		82.6%	IC	CU Lev	el of Sei	rvice		E			
Analysis Period (min)			15									

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Barrio Logan CPU

1: Commercial St & 16th St

Horizon Year Alt 2 without Improvements Timing Plan: AM Peak

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Movement	SWR
Lane Configurations	7*
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	0
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	0.52
RTOR Reduction (vph)	
Lane Group Flow (vph)	
Confl. Peds. (#/hr)	0
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	2%
Turn Type Protected Phases	custom
Protected Phases	9
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	
mersection Summary	

Barrio Logan CPU 2: National Ave & 16	6th St					Hori	zon Ye	ear Alt			prover Plan: AN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4 h		Υ.	To			44			4	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	40	194	40	3	495	34	40	34	12	65	36	91
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	211	43	3	538	37	43	37	13	71	39	99
Pedestrians		7			14			16			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	_
Percent Blockage		1			1			1			2	
Right turn flare (veh)												_
Median type								None			None	
Median storage veh)					000							
Upstream signal (ft)	0.00				668		0.00	0.00		0.00	0.00	0.00
pX, platoon unblocked	0.92 594			270			0.92	0.92	157	0.92	0.92	0.92
vC, conflicting volume	594			270			1006	936	157	820	939	583
vC1, stage 1 conf vol vC2, stage 2 conf vol												
vC2, stage 2 coni voi vCu, unblocked vol	558			270			1006	930	157	804	934	545
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	934 6.5	6.9
tC, 2 stage (s)	4.1			4.1			7.5	0.5	0.9	7.5	0.5	0.9
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			61	84	98	64	83	77
cM capacity (veh/h)	912			1273			111	225	839	198	224	433
1 , , ,	_							225	000	150	227	-00
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	149	149	3	575	93	209						
Volume Left	43	0	3	0	43	71						_
Volume Right	0	43	0	37	13	99						
cSH	912	1700	1273	1700	163	275						_
Volume to Capacity	0.05	0.09	0.00	0.34	0.57	0.76						
Queue Length 95th (ft)	4	0	0	0	75	141						
Control Delay (s)	3.0	0.0	7.8	0.0	53.1	50.0						
Lane LOS	A		A		F	E						
Approach Delay (s)	1.5		0.0		53.1	50.0						
Approach LOS					F	E						
Intersection Summary												
Average Delay			13.5									
Intersection Capacity Ut	ilization		57.7%	10	CU Lev	el of Sei	vice		В			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	Ť.		ji.	T.			et.			st.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			0.98	
Flpb, ped/bikes	0.99	1.00		0.98	1.00			0.99			1.00	
Frt	1.00	0.96		1.00	0.99			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1754	1774		1741	1832			1703			1693	
Flt Permitted	0.40	1.00		0.63	1.00			0.84			0.96	
Satd. Flow (perm)	747	1774		1146	1832			1457			1629	
Volume (vph)	11	146	49	19	377	36	65	26	58	16	40	60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	159	53	21	410	39	71	28	63	17	43	65
RTOR Reduction (vph)	0	19	0	0	5	0	0	36	0	0	42	0
Lane Group Flow (vph)	12	193	0	21	444	0	0	126	0	0	83	0
Confl. Peds. (#/hr)	21		25	25		21	37		14	14		37
Confl. Bikes (#/hr)						3			3			1
Turn Type	Perm			Perm			Perm		-	Perm		
Protected Phases	1 OIIII	4		1 Onn	8		1 Onn	2		1 Onn	6	
Permitted Phases	4			8	Ŭ		2	-		6	Ŭ	
Actuated Green, G (s)	14.2	14.2		14.2	14.2		-	12.4		Ŭ	12.4	
Effective Green, g (s)	14.2	14.2		14.2	14.2			12.4			12.4	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.36			0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	307	728		470	752			522			584	
v/s Ratio Prot	307	0.11		470	c0.24			JZZ			504	
v/s Ratio Perm	0.02	0.11		0.02	00.24			c0.09			0.05	
v/c Ratio	0.02	0.27		0.02	0.59			0.24			0.14	
Uniform Delay, d1	6.1	6.7		6.1	7.9			7.8			7.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.2		0.0	1.2			0.2			0.1	
Delay (s)	6.2	6.9		6.2	9.2			8.0			7.6	
Level of Service	0.2 A	0.5 A		0.2 A	A			A			7.0 A	
Approach Delay (s)	~	6.9		~	9.0			8.0			7.6	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM Average Control D			8.2	F	ICM Le	vel of S	ervice		A			
HCM Volume to Capaci			0.43									
Actuated Cycle Length (s)		34.6	S	Sum of I	ost time	(S)		8.0			
Intersection Capacity Ut	ilization		45.9%	10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 4: Newton Ave & Sig	gsbee	St				Hori	zon Ye	ear Alt	2 with T		proven lan: AM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			1			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	6	48	19	15	80	51	24	111	34	33	79	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	52	21	16	87	55	26	121	37	36	86	18
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	79	159	184	140								
Volume Left (vph)	7	16	26	36								
Volume Right (vph)	21	55	37	18								
Hadj (s)	-0.11	-0.16	-0.06	0.01								
Departure Headway (s)	4.8	4.6	4.6	4.7								
Degree Utilization, x	0.11	0.20	0.23	0.18								
Capacity (veh/h)	687	721	739	714								
Control Delay (s)	8.3	8.8	9.0	8.8								
Approach Delay (s)	8.3	8.8	9.0	8.8								
Approach LOS	A	А	А	А								
Intersection Summary												
Delay			8.8									
HCM Level of Service			А									
Intersection Capacity Ut Analysis Period (min)	ilizatior	า	31.7% 15	10	CU Leve	el of Ser	vice		А			

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Lane Configurations Image: Configuration Stop Stop <th>BT NBR</th> <th>SBL</th> <th></th> <th></th>	BT NBR	SBL		
Sign Control Stop	A	SDL	SBT	SBR
Volume (vph) 3 8 6 31 8 61 5 Peak Hour Factor 0.92 0.93 9 66 5 14 9 66 5 14 9 66 14 0.07 </td <td>449</td> <td></td> <td>4</td> <td></td>	449		4	
Peak Hour Factor 0.92 0.93 141 0.92 0.93 141	top		Stop	
Hourly flow rate (vph) 3 9 7 34 9 66 5 1 Direction, Lane # EB 1 WB 1 NB 1 SB 1 Volume Total (vph) 18 109 137 141 Volume Left (vph) 3 34 5 34 Volume Right (vph) 7 66 26 3 Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3	97 24	31	96	3
Direction, Lane # EB 1 WB 1 NB 1 SB 1 Volume Total (vph) 18 109 137 141 Volume Total (vph) 3 34 5 34 Volume Right (vph) 7 66 26 3 Hadj (s) -0.14 -0.27 -0.07 0.07 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3	.92 0.92	0.92	0.92	0.92
Volume Total (vph) 18 109 137 141 Volume Left (vph) 3 34 5 34 Volume Right (vph) 7 66 26 3 Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A A	105 26	34	104	3
Volume Left (vph) 3 34 5 34 Volume Right (vph) 7 66 26 3 Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A A				
Volume Right (vph) 7 66 26 3 Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3				
Hadj (s) -0.14 -0.27 -0.07 0.07 Departure Headway (s) 4.5 4.3 4.3 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3				
Departure Headway (s) 4.5 4.3 4.3 4.4 Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3				
Degree Utilization, x 0.02 0.13 0.16 0.17 Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A A				
Capacity (veh/h) 731 782 808 780 Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A A				
Control Delay (s) 7.6 7.9 8.1 8.3 Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A				
Approach Delay (s) 7.6 7.9 8.1 8.3 Approach LOS A A A A				
Approach LOS A A A A				
··				
Intersection Summary				
Delay 8.1				
HCM Level of Service A				
Intersection Capacity Utilization 33.8% ICU Level of Service	А			

Barrio Logan CPU 6: Harbor Dr & Sigsl	bee St					Horizon	Year Alt 2 without Improvements Timing Plan: AM Peak
<u></u>	۶	-	+	•	1	4	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	7	ተተ	4 b		44		
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	60	460	1650	20	100	100	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	65	500	1793	22	109	109	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					Raised		
Median storage veh)					0		
Upstream signal (ft)			1319				
pX, platoon unblocked	0.75				0.75	0.75	
vC, conflicting volume	1815				2185	908	
vC1, stage 1 conf vol					1804		
vC2, stage 2 conf vol					380		
vCu, unblocked vol	1753				2247	538	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)	2.2				3.5	3.3	
p0 queue free %	75				0	70	
cM capacity (veh/h)	264				58	364	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	
Volume Total	65	250	250	1196	620	217	
Volume Left	65	0	0	0	0	109	
Volume Right	0	0	0	0	22	109	
cSH	264	1700	1700	1700	1700	99	
Volume to Capacity	0.25	0.15	0.15	0.70	0.36	2.19	
Queue Length 95th (ft)	24	0	0	0	0	476	
Control Delay (s)	23.0	0.0	0.0	0.0	0.0	635.7	
Lane LOS	С					F	
Approach Delay (s) Approach LOS	2.7			0.0		635.7 F	
	_	_	_	_	_	'	
Intersection Summary							
Average Delay			53.8		0111		2
Intersection Capacity Ut	ilization		68.2%		CU Lev	el of Service	C
Analysis Period (min)			15				

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Barrio Logan CPU 7: Logan Ave & Bea	rdsley	St				Hori	zon Ye	ear Alt	2 with T		prover Plan: AN	
	≯	-	\mathbf{r}	4	+	×	1	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ħ		74	4			10			4.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	175	24	88	209	0	30	0	69	264	233	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	190	26	96	227	0	33	0	75	287	253	51
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	216	96	227	108	591							
Volume Left (vph)	0	96	0	33	287							
Volume Right (vph)	26	0	0	75	51							
Hadj (s)	-0.04	0.53	0.03	-0.32	0.08							
Departure Headway (s)	7.0	7.8	7.3	6.8	6.0							
Degree Utilization, x	0.42	0.21	0.46	0.20	0.99							
Capacity (veh/h)	506	453	488	501	596							
Control Delay (s)	15.0	11.7	15.2	11.5	57.4							
Approach Delay (s)	15.0	14.2		11.5	57.4							
Approach LOS	С	В		В	F							
Intersection Summary												
Delay			34.8									
HCM Level of Service			D									
Intersection Capacity Ut	ilizatior	า	61.9%	10	CU Lev	el of Ser	vice		В			
Analysis Period (min)			15									

Barrio Logan CPU 8: National Ave & Be	eardsle	ey St				Horiz	zon Ye	ear Alt	2 with T		proven Plan: AM	
	۶	+	*	4	ł	•	<	1	1	1	Ŧ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ţ,		J.	1.			de.			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	8	243	8	239	432	66	4	30	50	213	138	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	264	9	260	470	72	4	33	54	232	150	25
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	9	273	260	541	91	407						
Volume Left (vph)	9	0	260	0	4	232						
Volume Right (vph)	0	9	0	72	54	25						
Hadj (s)	0.53	0.01	0.53	-0.06	-0.31	0.11						
Departure Headway (s)	8.2	7.7	7.6	7.0	7.6	6.9						
Degree Utilization, x	0.02	0.58	0.55	1.05	0.19	0.78						
Capacity (veh/h)	419	448	466	519	418	407						
Control Delay (s)	10.2	19.5	18.3	80.0	12.5	30.3						
Approach Delay (s)	19.2		60.0		12.5	30.3						
Approach LOS	С		F		В	D						
Intersection Summary												
Delay			42.4									
HCM Level of Service			E									
Intersection Capacity Ut	ilization		67.8%		CU Lev	el of Ser	vice		С			
Analysis Period (min)			15									

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Barrio Logan CPU 9: Newton Ave & Be	ardsle	y St						ear Alt		iming P		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		¢.			\$			40			44	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	18	74	9	29	82	15	13	23	19	56	156	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	80	10	32	89	16	14	25	21	61	170	45
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	110	137	60	275								
Volume Left (vph)	20	32	14	61								
Volume Right (vph)	10	16	21	45								
Hadj (s)	0.02	0.01	-0.13	-0.02								
Departure Headway (s)	4.9	4.9	4.7	4.6								
Degree Utilization, x	0.15	0.19	0.08	0.35								
Capacity (veh/h)	675	684	699	745								
Control Delay (s)	8.8	9.0	8.2	10.0								
Approach Delay (s)	8.8	9.0	8.2	10.0								
Approach LOS	Α	А	A	В								
Intersection Summary												
Delay			9.4									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	1	38.0%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 10: Main St & Beard	Islev S	St				Hori	zon Ye	ear Alt		out Im iming P		
	۶	-	\mathbf{F}	4	+	×	1	1	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		÷.			4			10			10	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	15	74	4	163	109	76	2	8	52	275	57	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	80	4	177	118	83	2	9	57	299	62	57
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	101	378	67	417								
Volume Left (vph)	16	177	2	299								
Volume Right (vph)	4	83	57	57								
Hadj (s)	0.04	0.00	-0.46	0.10								
Departure Headway (s)	6.0	5.5	5.6	5.5								
Degree Utilization, x	0.17	0.58	0.10	0.64								
Capacity (veh/h)	528	623	545	626								
Control Delay (s)	10.2	15.7	9.2	17.6								
Approach Delay (s)	10.2	15.7	9.2	17.6								
Approach LOS	В	С	А	С								
Intersection Summary												
Delay			15.5									
HCM Level of Service			С									
Intersection Capacity Ut	ilizatior	า	61.3%	- 10	CU Lev	el of Ser	vice		В			
Analysis Period (min)			15									

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Barrio Logan CPU	Horizon Year Alt 2 without Improvements
11: Harbor Dr & Beardsley St	Timing Plan: AM Peak
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	-	_		-		-		
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	ň	<u> </u>	朴		W.			
Sign Control		Free	Free		Stop			
Grade		0%	0%		0%			
Volume (veh/h)	22	560	1580	30	48	90		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	24	609	1717	33	52	98		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type					Raised			
Median storage veh)					0			
Upstream signal (ft)			658					
pX, platoon unblocked	0.73				0.73	0.73		
vC, conflicting volume	1750				2086	875		
vC1, stage 1 conf vol					1734			
vC2, stage 2 conf vol					352			
vCu, unblocked vol	1655				2118	449		
tC, single (s)	4.3				6.8	6.9		
tC, 2 stage (s)					5.8			
tF (s)	2.3				3.5	3.3		
p0 queue free %	91				20	76		
cM capacity (veh/h)	255				65	404		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1		
Volume Total	24	304	304	1145	605	150		
Volume Left	24	0	0	0	000	52		
Volume Right	0	0	0	0	33	98		
cSH	255	1700	1700	1700	1700	144		
Volume to Capacity	0.09	0.18	0.18	0.67	0.36	1.04		
Queue Length 95th (ft)	8	0.10	0.10	0.07	0.00	197		
Control Delay (s)	20.6	0.0	0.0	0.0	0.0	147.1		
Lane LOS	20.0 C	0.0	0.0	0.0	0.0	F		
Approach Delay (s)	0.8			0.0		147.1		
Approach LOS	0.0			0.0		F		
						1		
Intersection Summary								
Average Delay			8.9					
Intersection Capacity Ut	ilization		59.5%	1	CU Lev	el of Servic	e	
Analysis Period (min)			15					

Barrio Logan CPU 12: Kearney St & Ce	esar E.	. Chav	ez Pkv	vy		Hori	zon Ye	ear Alt			prover Plan: AN	
	≯	+	*	4	+	*	<	1	*	×	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				14	4.		45	4			41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor				0.95	0.95		1.00	1.00			0.95	
Frt				1.00	0.94		1.00	1.00			0.99	
Flt Protected				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (prot)				1478	1460		1626	1712			3209	
Flt Permitted				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (perm)				1478	1460		1626	1712			3209	
Volume (vph)	0	0	0	615	278	205	257	259	0	0	353	34
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	668	302	223	279	282	0	0	384	37
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	585	586	0	279	282	0	0	412	0
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%
Turn Type				Split			Split					
Protected Phases				8	8		6	6			2	
Permitted Phases												
Actuated Green, G (s)				27.7	27.7		16.7	16.7			15.6	
Effective Green, g (s)				27.7	27.7		16.7	16.7			15.6	
Actuated q/C Ratio				0.38	0.38		0.23	0.23			0.22	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				569	562		377	397			695	
v/s Ratio Prot				0.40	c0.40		c0.17	0.16			c0.13	
v/s Ratio Perm												
v/c Ratio				1.03	1.04		0.74	0.71			0.59	
Uniform Delay, d1				22.2	22.2		25.6	25.4			25.3	
Progression Factor				1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2				45.1	49.5		7.6	5.9			1.4	
Delay (s)				67.3	71.6		33.2	31.3			26.7	
Level of Service				E	E		С	С			С	
Approach Delay (s)		0.0			69.5			32.3			26.7	
Approach LOS		А			E			С			С	
Intersection Summary												
HCM Average Control D	elay		51.6	H	ICM Le	vel of Se	ervice		D			
HCM Volume to Capacit	ty ratio		0.84									
Actuated Cycle Length (72.0	S	Sum of I	ost time	(s)		12.0			
Intersection Capacity Ut	ilization	1	65.7%	10	CU Lev	el of Sei	rvice		С			
Analysis Period (min)			15									
 Critical Lana Group 												

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Barrio Logan CPU 13: Logan Ave & Ce	sar E.	Chave	ez Pkv	vy		Hori	zon Ye	ear Alt	2 with T		prover Plan: AN	
	≯	-	7	4	+	•	•	Ť	1	1	Ļ	∢
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	Т.		jić.	4	7	Υç	44	P	Ň	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1759	1770		1762	1863	1544	1530	3059	1328	1530	3004	
Flt Permitted	0.28	1.00		0.18	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	526	1770		333	1863	1544	1530	3059	1328	1530	3004	
Volume (vph)	140	300	120	100	350	76	100	300	300	70	818	80
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	326	130	109	380	83	109	326	326	76	889	87
RTOR Reduction (vph)	0	20	0	0	0	59	0	0	197	0	8	0
Lane Group Flow (vph)	152	436	0	109	380	24	109	326	129	76	968	0
Confl. Peds. (#/hr)	15	400	13	13	500	15	103	520	17	70	300	39
Confl. Bikes (#/hr)	15		4	13		15			17			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm	270	2 /0	Perm	2 /0	Perm	Prot	1070	Perm	Prot	1070	1070
Protected Phases	Feilii	4		Feili	8	Feili	5	2	Feilii	1	6	
Permitted Phases	4	4		8	0	8	5	2	2		0	
Actuated Green, G (s)	23.6	23.6		23.6	23.6	23.6	6.5	31.7	31.7	12.7	37.9	
Effective Green, g (s)	23.6	23.6		23.6	23.6	23.6	6.5	31.7	31.7	12.7	37.9	
	0.30	0.30		0.30	0.30	0.30	0.08	0.40	0.40	0.16	0.47	
Actuated g/C Ratio	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
()	4.0 3.0										4.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	155	522		98	550	455	124	1212	526	243	1423	
v/s Ratio Prot	0.00	0.25			0.20		c0.07	0.11	0.40	0.05	c0.32	_
v/s Ratio Perm	0.29			c0.33		0.02			0.10			
v/c Ratio	0.98	0.83		1.11	0.69	0.05	0.88	0.27	0.25	0.31	0.68	_
Uniform Delay, d1	28.0	26.4		28.2	25.0	20.2	36.4	16.3	16.2	29.8	16.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.67	0.28	1.00	1.00	_
Incremental Delay, d2	66.2	11.0		124.4	3.7	0.0	38.1	0.4	0.9	0.7	2.6	
Delay (s)	94.2	37.4		152.6	28.7	20.3	74.5	11.4	5.4	30.5	19.0	_
Level of Service	F	D		F	С	С	E	В	А	С	В	
Approach Delay (s)		51.6			51.1			17.9			19.8	
Approach LOS		D			D			В			В	
Intersection Summary												
HCM Average Control D	elay		31.8	F	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit			0.85									
Actuated Cycle Length (80.0	5	Sum of I	ost time	e (s)		12.0			
Intersection Capacity Ut			73.9%			el of Se	· · /		D			
Analysis Period (min)			15						_			

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ane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
ane Configurations	ň	Ţ.	85	T.	J.	41.	Υc	4	ř	
olume (vph)	190	250	120	350	100	570	60	765	310	
urn Type	Perm		Perm		Perm		Perm		Perm	
otected Phases		4		8		2		6		
ermitted Phases	4		8		2		6		6	
etector Phases	4	4	8	8	2	2	6	6	6	
inimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
inimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0	
otal Split (s)	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0	
otal Split (%)	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%	
ellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
I-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
ad/Lag										
ad-Lag Optimize?										
ecall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
ct Effct Green (s)	30.0	30.0	30.0	30.0	42.0	42.0	42.0	42.0	42.0	
tuated g/C Ratio	0.38	0.38	0.38	0.38	0.52	0.52	0.52	0.52	0.52	
c Ratio	1.25	0.70	0.72	0.73	1.09	0.40	0.22	0.98	0.39	
ontrol Delay	182.0	25.0	47.0	27.8	141.0	9.9	4.8	36.6	1.3	
ueue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
otal Delay	182.0	25.0	47.0		141.0	9.9	4.8	36.6	1.5	
DS	F	С	D	С	F	A	A	D	A	
oproach Delay		72.4		31.8		28.1		25.3		
proach LOS		E		С		С		С		
tersection Summary										_
cle Length: 80										
tuated Cycle Length	n: 80									
set: 76 (95%), Refe		o phase	2:NBT	L and 6	SBTL.	Start of	Green			
tural Cycle: 75					- ,					
ntrol Type: Actuate	d-Coordii	nated								
ximum v/c Ratio: 1	.25									
ersection Signal De	lay: 36.9			1	ntersec	tion LOS	S: D			
ersection Capacity		n 94.8%			CU Lev	el of Se	rvice F			
alysis Period (min)										

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Ţ.		36	1.		Υç	4 b		1	4	N.
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1742		1770	1796		1612	3184		1530	1610	1369
Flt Permitted	0.24	1.00		0.26	1.00		0.11	1.00		0.35	1.00	1.00
Satd. Flow (perm)	440	1742		482	1796		190	3184		556	1610	1369
Volume (vph)	190	250	190	120	350	110	100	570	50	60	765	310
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	272	207	130	380	120	109	620	54	65	832	337
RTOR Reduction (vph)	0	34	0	0	14	0	0	8	0	0	0	139
Lane Group Flow (vph)	207	445	0	130	486	0	109	666	0	65	832	198
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	30.0	30.0		30.0	30.0		42.0	42.0		42.0	42.0	42.0
Effective Green, g (s)	30.0	30.0		30.0	30.0		42.0	42.0		42.0	42.0	42.0
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.52	0.52		0.52	0.52	0.52
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	165	653		181	674		100	1672		292	845	719
v/s Ratio Prot		0.26			0.27			0.21			0.52	
v/s Ratio Perm	c0.47			0.27			c0.57			0.12		0.14
v/c Ratio	1.25	0.68		0.72	0.72		1.09	0.40		0.22	0.98	0.28
Uniform Delay, d1	25.0	21.0		21.4	21.4		19.0	11.4		10.2	18.7	10.5
Progression Factor	1.00	1.00		1.00	1.00		0.84	0.81		0.32	0.50	0.11
Incremental Delay, d2	154.4	2.9		12.8	3.8		115.8	0.7		1.4	23.8	0.7
Delay (s)	179.4	23.9		34.1	25.2		131.7	10.0		4.6	33.1	1.9
Level of Service	F	С		С	С		F	А		А	С	A
Approach Delay (s)		70.8			27.1			26.9			23.1	
Approach LOS		E			С			С			С	
Intersection Summary												
HCM Average Control E	Delay		34.6	F	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			1.16									
Actuated Cycle Length ((S)		80.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		94.8%	10	CU Lev	el of Sei	rvice		F			
Analysis Period (min)			15									

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	ň	T.	34	To	74	41.	Υr	ţ,	
Volume (vph)	80	40	40	50	40	420	100	825	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0	
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	10.3	10.3	10.3	10.3	64.4	64.4	64.4	64.4	
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.80	0.80	0.80	0.80	
v/c Ratio	0.54	0.39	0.26	0.46	0.35	0.19	0.18	0.79	
Control Delay	44.1	18.5	33.8	19.7	9.9	1.3	2.1	6.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	
Total Delay	44.1	18.5	33.8	19.7	9.9	1.3	2.1	8.3	
LOS	D	В	С	В	А	A	А	А	
Approach Delay		29.9		23.2		2.0		7.7	
Approach LOS		С		С		A		А	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length									
Offset: 1 (1%), Refere	nced to p	hase 2	NBTL a	and 6:SE	3TL, Sta	art of G	reen		
Natural Cycle: 90									
Control Type: Actuated		nated							
Maximum v/c Ratio: 0									
Intersection Signal De					ntersec				
Intersection Capacity I Analysis Period (min)		n 77.0%			CU Lev	el of Se	rvice D		

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49 s	31 s
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49 s	31 s

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Novement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ň	Ţ,		λ.	1.		Υç	4 b		7	Ţ.,	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Fotal Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
ane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.91		1.00	0.91		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1695		1770	1699		1612	3191		1612	1657	
Flt Permitted	0.56	1.00		0.65	1.00		0.19	1.00		0.47	1.00	
Satd. Flow (perm)	1049	1695		1208	1699		324	3191		803	1657	
Volume (vph)	80	40	60	40	50	70	40	420	30	100	825	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	43	65	43	54	76	43	457	33	109	897	163
RTOR Reduction (vph)	0	58	0	0	67	0	0	3	0	0	4	(
ane Group Flow (vph)	87	50	0	43	63	0	43	487	0	109	1056	(
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Furn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.2	9.2		9.2	9.2		62.8	62.8		62.8	62.8	
Effective Green, g (s)	9.2	9.2		9.2	9.2		62.8	62.8		62.8	62.8	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78		0.78	0.78	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
/ehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
ane Grp Cap (vph)	121	195		139	195		254	2505		630	1301	
//s Ratio Prot		0.03			0.04			0.15			c0.64	
/s Ratio Perm	c0.08			0.04			0.13			0.14		
//c Ratio	0.72	0.26		0.31	0.32		0.17	0.19		0.17	0.81	
Jniform Delay, d1	34.2	32.3		32.5	32.5		2.1	2.2		2.1	5.1	
Progression Factor	1.00	1.00		1.00	1.00		0.57	0.45		0.57	0.41	
ncremental Delay, d2	18.4	0.7		1.3	1.0		1.2	0.1		0.2	2.4	
Delay (s)	52.6	33.0		33.8	33.5		2.4	1.1		1.5	4.5	
Level of Service	D	С		С	С		А	А		А	А	
Approach Delay (s)		41.7			33.6			1.2			4.2	
Approach LOS		D			С			А			А	
ntersection Summary												
HCM Average Control E	Delay		9.4	F	ICM Le	vel of S	ervice		А			
ICM Volume to Capaci			0.80									
Actuated Cycle Length (80.0	S	Sum of I	ost time	(S)		8.0			
ntersection Capacity Ut	ilization		77.0%	10	CU Lev	el of Sei	vice		D			
Analysis Period (min)			15									

	٦	-	4	+	1	Ť	1	ŧ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	ž	ţ,	Υ.	To	7	41.	H.	ţ,	
Volume (vph)	150	190	70	350	85	340	150	580	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	38.0	38.0	38.0	38.0	42.0	42.0	42.0	42.0	
Total Split (%)	47.5%	47.5%	47.5%	47.5%	52.5%	52.5%	52.5%	52.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	34.0	34.0	34.0	34.0	38.0	38.0	38.0	38.0	
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.48	0.48	0.48	0.48	
v/c Ratio	1.01	0.28	0.17	0.77	1.12	0.32	0.47	1.12	
Control Delay	103.1	15.9	15.6	26.5	165.3	12.0	13.2	84.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	29.2	
Total Delay	103.1	15.9	15.6		165.3	12.6	13.2	114.0	
LOS	F	В	В	С	F	В	В	F	
Approach Delay		52.7		25.2		37.7		97.7	
Approach LOS		D		С		D		F	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	n: 80								
Offset: 13 (16%), Refe		o phase	2:NBT	and 6	SBTL,	Start of	Green		
Natural Cycle: 65									
Control Type: Actuate	d-Coordii	nated							
Maximum v/c Ratio: 1									
Intersection Signal De	lay: 59.8			1	ntersec	tion LO	S: E		
Intersection Capacity I		100.59	6	1	CU Lev	el of Se	rvice G		
Analysis Period (min)	15								

▲↑ ø2	→ ₀₄	
42 s	38 s	
↓ _{ø6}	₩ ø8	
42 s	38 s	

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Lane Configurations 1	Barrio Logan CPU 16: Main St & Cesar	r E. Ch	avez F	Pkwy			Hori	zon Ye	ear Alt		out Im iming P		
Lane Configurations Th Th <th></th> <th>≯</th> <th>-</th> <th>~</th> <th>4</th> <th>+</th> <th>×</th> <th>•</th> <th>Ť</th> <th>1</th> <th>1</th> <th>ŧ</th> <th>~</th>		≯	-	~	4	+	×	•	Ť	1	1	ŧ	~
Ideal Flow (vphp) 1900 19	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Ideal Flow (vphp) 1900 19	Lane Configurations	ň	Ť.		μ,	To		Υç	41		7	T.	
Lane Util. Factor 1.00 1.00 1.00 1.00 0.95 1.00 1.00 Frpb, ped/bikes 1.00 1.00 1.00 0.98 1.00 0.99 1.00 0.99 Flpb, ped/bikes 0.99 1.00 0.99 1.00 0.95 1.00 0.96 1.00 0.97 1.00 0.96 Flt Protected 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Ideal Flow (vphpl)	1900		1900	1900		1900	1900		1900	1900		1900
Frpb, ped/bikes 1.00 1.00 1.00 0.98 1.00 0.99 1.00 0.99 Flpb, ped/bikes 0.99 1.00 0.99 1.00 0.95 1.00 0.97 1.00 0.96 Flt 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 0.45 1.00 1.50 1.00 1.50 1.00 1.50 1.00 1.50 1.00 1.50 1.00 1.50 1.00 1.50	Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Fipb, ped/bikes 0.99 1.00 0.99 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.96 Fit 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Fit 1.00 0.99 1.00 0.95 1.00 0.97 1.00 0.96 Fit Protected 0.95 1.00 1.01 1	Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.99		1.00	0.98	
Fit Protected 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 Satd. Flow (prot) 1752 1839 1750 1736 1556 2996 1549 1550 Fit Permitted 0.21 1.00 0.57 1.00 0.11 1.00 0.45 1.00 Volume (vph) 150 190 15 70 350 190 85 340 90 150 580 1 Peak-hour factor, PHF 0.92 0	Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Satd. Flow (prot) 1752 1839 1750 1736 1556 2996 1549 1550 Fit Permitted 0.21 1.00 0.57 1.00 0.111 1.00 0.45 1.00 Satd. Flow (perm) 378 1839 1056 172 2996 733 1550 Volume (vph) 150 190 15 70 350 190 85 340 90 150 580 1 Peak-hour factor, PHF 0.92 <t< td=""><td></td><td>1.00</td><td></td><td></td><td>1.00</td><td></td><td></td><td>1.00</td><td></td><td></td><td>1.00</td><td>0.96</td><td></td></t<>		1.00			1.00			1.00			1.00	0.96	
Fit Permitted 0.21 1.00 0.57 1.00 0.11 1.00 0.45 1.00 Satd. Flow (perm) 378 1839 1056 1736 172 2996 733 1550 Volume (vph) 150 190 15 70 350 190 85 340 90 150 580 1 Peak-hour factor, PHF 0.92			1.00								0.95		
Satd. Flow (perm) 378 1839 1056 1736 172 2996 733 1550 Volume (vph) 150 190 15 70 350 190 85 340 90 150 580 1 Peak-hour factor, PHF 0.92	u /												
Volume (vph) 150 190 15 70 350 190 85 340 90 150 580 1 Peak-hour factor, PHF 0.92													
Peak-hour factor, PHF 0.92 0.16 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>													
Adj. Flow (vph) 163 207 16 76 380 207 92 370 98 163 630 2 RTOR Reduction (vph) 0 3 0 0 25 0 0 30 0 0 15 Lane Group Flow (vph) 163 220 0 76 562 0 92 438 0 163 827 Confl. Peds. (#/hr) 38 18 18 38 26 5 5 5 Confl. Bikes (#/hr) 2% 2% 2% 2% 2% 16%							190						195
RTOR Reduction (vph) 0 3 0 0 25 0 0 30 0 0 15 Lane Group Flow (vph) 163 220 0 76 562 0 92 438 0 163 827 Confl. Peds. (#/hr) 38 18 18 18 38 26 5 5 Confl. Bikes (#/hr) 2 1 1 1 1 1 1 Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 16%	Peak-hour factor, PHF	0.92		0.92	0.92	0.92	0.92	0.92		0.92			0.92
Lane Group Flow (vph) 163 220 0 76 562 0 92 438 0 163 827 Confl. Peds. (#/hr) 38 18 18 38 26 5 5 Confl. Bikes (#/hr) 2 1 1 1 1 Heavy Vehicles (%) 2% 2% 2% 2% 2% 16% 1													212
Confl. Peds. (#/hr) 38 18 18 18 38 26 5 5 Confl. Bikes (#/hr) 2 1 1 1 1 1 Heavy Vehicles (%) 2% 2% 2% 2% 2% 16%													0
Confl. Bikes (#/hr) 2 1 1 Heavy Vehicles (%) 2% 2% 2% 2% 2% 16%			220			562			438			827	0
Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 16% <t< td=""><td></td><td>38</td><td></td><td></td><td>18</td><td></td><td></td><td>26</td><td></td><td></td><td>5</td><td></td><td>26</td></t<>		38			18			26			5		26
Turn Type Perm Perm Perm Perm Perm Perm Perm Protected Phases 4 8 2 6 Actuated Phases 4 8 2 6 Actuated Green, G (s) 34.0 34.0 34.0 38.0 38.0 38.0 Effective Green, g (s) 34.0 34.0 34.0 38.0 38.0 38.0 38.0 Actuated g/C Ratio 0.42 0.42 0.42 0.42 0.48 0.48 0.48 0.48 Clearance Time (s) 4.0	· · · ·												2
Protected Phases 4 8 2 6 Permitted Phases 4 8 2 6 Actuated Green, G (s) 34.0 34.0 34.0 38.0 38.0 38.0 38.0 Effective Green, g (s) 34.0 34.0 34.0 34.0 38.0 38.0 38.0 38.0 Actuated g/C Ratio 0.42 0.42 0.42 0.42 0.48 0.48 0.48 0.48 Clearance Time (s) 4.0			2%	2%		2%	2%		16%	16%		16%	16%
Permitted Phases 4 8 2 6 Actuated Green, G (s) 34.0 34.0 34.0 38.0 <td></td> <td>Perm</td> <td></td> <td></td> <td>Perm</td> <td></td> <td></td> <td>Perm</td> <td></td> <td></td> <td>Perm</td> <td></td> <td></td>		Perm			Perm			Perm			Perm		
Actuated Green, G (s) 34.0 34.0 34.0 38.0 30.0 30.0 <t< td=""><td></td><td></td><td>4</td><td></td><td>_</td><td>8</td><td></td><td>-</td><td>2</td><td></td><td>-</td><td>6</td><td>_</td></t<>			4		_	8		-	2		-	6	_
Effective Green, g (s) 34.0 34.0 34.0 38.0 30.0 30.0 30.0 30.0 30.													
Actuated g/C Ratio 0.42 0.42 0.42 0.42 0.48 0.48 0.48 0.48 Clearance Time (s) 4.0 4.23 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0													_
Clearance Time (s) 4.0													
Vehicle Extension (s) 3.0													_
Lane Grp Cap (vph) 161 782 449 738 82 1423 348 736 v/s Ratio Prot 0.12 0.32 0.15 0.53 0.53 v/s Ratio Perm c0.43 0.07 c0.53 0.22 v/c v/c Ratio 1.01 0.28 0.17 0.76 1.12 0.31 0.47 1.12 Uniform Delay, d1 23.0 15.0 14.3 19.6 21.0 12.9 14.2 21.0 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.66 2.9 67.4 Delay (s) 97.2 15.2 14.4 24.2 157.2 13.5 12.5 82.3 Level of Service F B B C F B B F Approach Delay (s) 49.8 23.1 37.1 71.0 Approach LOS D C D E Intersection Summary E HCM Vorage Control Delay <	· · · · · · · · · · · · · · · · · · ·												
v/s Ratio Prot 0.12 0.32 0.15 0.53 v/s Ratio Perm c0.43 0.07 c0.53 0.22 v/c Ratio 1.01 0.28 0.17 0.76 1.12 0.31 0.47 1.12 Uniform Delay, d1 23.0 15.0 14.3 19.6 21.0 12.9 14.2 21.0 Progression Factor 1.00 1.00 1.00 1.00 1.00 0.68 0.71 Incremental Delay, d2 74.2 0.2 0.2 4.7 136.2 0.6 2.9 67.4 Delay (s) 97.2 15.2 14.4 24.2 15.5 12.5 82.3 Level of Service F B B C F B B F Approach LOS D C D E													
v/s Ratio Perm c0.43 0.07 c0.53 0.22 v/c Ratio 1.01 0.28 0.17 0.76 1.12 0.31 0.47 1.12 Uniform Delay, d1 23.0 15.0 14.3 19.6 21.0 12.9 14.2 21.0 Progression Factor 1.00 1.00 1.00 1.00 0.68 0.71 Incremental Delay, d2 74.2 0.2 0.2 4.7 136.2 0.6 2.9 67.4 Delay (s) 97.2 15.2 14.4 24.2 157.2 13.5 12.5 82.3 Level of Service F B B C F B B F Approach LOS D C D E <td></td> <td>161</td> <td></td> <td></td> <td>449</td> <td></td> <td></td> <td>82</td> <td></td> <td></td> <td>348</td> <td></td> <td></td>		161			449			82			348		
v/c Ratio 1.01 0.28 0.17 0.76 1.12 0.31 0.47 1.12 Uniform Delay, d1 23.0 15.0 14.3 19.6 21.0 12.9 14.2 21.0 Progression Factor 1.00 1.00 1.00 1.00 1.00 0.68 0.71 Incremental Delay, d2 74.2 0.2 0.2 4.7 136.2 0.6 2.9 67.4 Delay (s) 97.2 15.2 14.4 24.2 157.2 13.5 12.5 82.3 Level of Service F B B C F B B F Approach LOS D C D E		0.40	0.12			0.32		0.50	0.15			0.53	_
Uniform Delay, d1 23.0 15.0 14.3 19.6 21.0 12.9 14.2 21.0 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.66 0.71 Incremental Delay, d2 74.2 0.2 0.2 4.7 136.2 0.6 2.9 67.4 Delay (s) 97.2 15.2 14.4 24.2 157.2 13.5 12.5 82.3 Level of Service F B B C F B B F Approach Delay (s) 49.8 23.1 37.1 71.0 Approach LOS D C D E Intersection Summary HCM Average Control Delay 48.5 HCM Level of Service D HCM Volume to Capacity ratio 1.07 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 8.0													
Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.68 0.71 Incremental Delay, d2 74.2 0.2 0.2 4.7 136.2 0.6 2.9 67.4 Delay (s) 97.2 15.2 14.4 24.2 157.2 13.5 12.5 82.3 Level of Service F B B C F B B F Approach Delay (s) 49.8 23.1 37.1 71.0 Approach LOS D C D E													
Incremental Delay, d2 74.2 0.2 0.2 4.7 136.2 0.6 2.9 67.4 Delay (s) 97.2 15.2 14.4 24.2 157.2 13.5 12.5 82.3 Level of Service F B B C F B B F Approach Delay (s) 49.8 23.1 37.1 71.0 Approach LOS D C D E Intersection Summary 48.5 HCM Level of Service D HCM Average Control Delay 48.5 HCM Level of Service D Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0													
Delay (s) 97.2 15.2 14.4 24.2 157.2 13.5 12.5 82.3 Level of Service F B B C F B B F Approach Delay (s) 49.8 23.1 37.1 71.0 Approach LOS D C D E Intersection Summary HCM Average Control Delay 48.5 HCM Level of Service D HCM Volume to Capacity ratio 1.07 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0													
Level of Service F B B C F B F Approach Delay (s) 49.8 23.1 37.1 71.0 Approach LOS D C D E Intersection Summary HCM Average Control Delay 48.5 HCM Level of Service D HCM Volume to Capacity ratio 1.07 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0													
Approach Delay (s) 49.8 23.1 37.1 71.0 Approach LOS D C D E Intersection Summary HCM Average Control Delay 48.5 HCM Level of Service D HCM Volume to Capacity ratio 1.07 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0													
Approach LOS D C D E Intersection Summary HCM Average Control Delay 48.5 HCM Level of Service D HCM Volume to Capacity ratio 1.07 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0		r r			В			- r			В		
Intersection Summary HCM Average Control Delay 48.5 HCM Level of Service D HCM Volume to Capacity ratio 1.07 1.07 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0													
HCM Average Control Delay 48.5 HCM Level of Service D HCM Volume to Capacity ratio 1.07 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0	Approach LUS		U			C			U			E	
HCM Volume to Capacity ratio 1.07 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0	Intersection Summary												
Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0	HCM Average Control D	Delay		48.5	H	ICM Le	vel of S	ervice		D			
				1.07									
Intersection Capacity Utilization 100.5% ICU Level of Service G	Actuated Cycle Length ((s)			S	Sum of I	ost time	e (S)					
		ilization	1		10	CU Lev	el of Se	rvice		G			
Analysis Period (min) 15				15									

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Barrio Logan CPU 17: Harbor Dr & Ce	sar E.	Chave	z Pkw	v		Hori	zon Ye	ear Alt			prover Plan: AN	
	≯	-	7	4	+	•	•	1	1	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ň	仲弘		μ,	41+		Υç	Þ			\$	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.(
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.90			1.00	0.8
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	1.00
Satd. Flow (prot)	1641	3224		1421	3232		1363	1218			1599	1372
Flt Permitted	0.95	1.00		0.95	1.00		0.60	1.00			0.85	1.00
Satd. Flow (perm)	1641	3224		1421	3232		857	1218			1386	1372
Volume (vph)	109	404	40	80	1056	99	10	14	27	77	83	510
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	439	43	87	1148	108	11	15	29	84	90	554
RTOR Reduction (vph)	0	433	40	0	6	0	0	20	0	0	0	65
Lane Group Flow (vph)	118	475	0	87	1250	0	11	24	0	0	174	489
Confl. Peds. (#/hr)	110	475	11	07	1200	6	4	24	1	1	1/4	403
Confl. Bikes (#/hr)			5			11	4		2	1		-
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%
	Prot	1078	1070	Prot	1070	1078	Perm	JZ /0	4370	Perm	10 /0	Perm
Turn Type		4400			10.0.0		Perm	40		Perm	4 5 40	Perm
Protected Phases Permitted Phases	3	1426		13	1826		12	12		1 5 16	1 5 16	4 5 41
	6.4	22.4		5 4	20.4			24.2		1 5 10	40.0	1510
Actuated Green, G (s)	6.1	33.1		5.1	32.1		34.3	34.3			46.3	46.3
Effective Green, g (s)	6.1	33.1		5.1	32.1		34.3	34.3			46.3	46.3
Actuated g/C Ratio	0.06	0.31		0.05	0.30		0.32	0.32			0.43	0.43
Clearance Time (s)	4.0			4.0			4.0	4.0				
Vehicle Extension (s)	3.0			3.0			3.0	3.0				
Lane Grp Cap (vph)	92	984		67	956		271	385			591	58
v/s Ratio Prot	c0.07	0.15		0.06	c0.39			0.02				
v/s Ratio Perm							0.01				0.13	c0.3
v/c Ratio	1.28	0.48		1.30	1.31		0.04	0.06			0.29	0.84
Uniform Delay, d1	51.2	30.7		51.7	38.2		25.7	25.9			20.4	27.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.01	1.0
Incremental Delay, d2	187.4	0.4		209.3	145.8		0.1	0.1			0.3	10.0
Delay (s)	238.6	31.1		261.0	184.0		25.8	26.0			21.0	39.3
Level of Service	F	С		F	F		С	С			С	E
Approach Delay (s)		71.9			189.0			25.9			34.9	
Approach LOS		E			F			С			С	
Intersection Summary												
HCM Average Control [Delay		118.8	H	ICM Lev	vel of S	ervice		F			
HCM Volume to Capaci			1.05									
Actuated Cycle Length			108.5	S	Sum of I	ost time	(s)		24.0			
Intersection Capacity U	tilizatior	۱	78.6%		CU Leve	el of Sei	rvice		D			

Analysis Period (min) c Critical Lane Group

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18: Logan Ave & I-5	000	n runn	<u> </u>							g .	iani / iii	l Peak
	۶	-	\mathbf{F}	4	•	•	1	Ť	۲	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	T.		74	To				٣			
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	475	182	2	0	125	80	0	0	4	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	516	198	2	0	136	87	0	0	4	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		667										
oX, platoon unblocked												
C, conflicting volume	223			200			1367	1454	199	1414	1412	179
C1, stage 1 conf vol												
vC2, stage 2 conf vol												
Cu, unblocked vol	223			200			1367	1454	199	1414	1412	179
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	62			100			100	100	99	100	100	100
cM capacity (veh/h)	1346			1372			87	80	842	80	85	863
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1							
Volume Total	516	200	0	223	4							
Volume Left	516	0	0	0	0							
Volume Right	0	2	0	87	4							
cSH	1346	1700	1700	1700	842							
Volume to Capacity	0.38	0.12	0.00	0.13	0.01							
Queue Length 95th (ft)	46	0	0	0	0							
Control Delay (s)	9.3	0.0	0.0	0.0	9.3							
Lane LOS	А				А							
Approach Delay (s)	6.7		0.0		9.3							
Approach LOS					A							
Intersection Summary												
Average Delay			5.1									
Intersection Capacity Ut	ilization	1	44.4%	10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									

19: National Ave & S	511-75	Oll-la	тр				Timing Plan: AM Pea
	٦	→	+	*	1	∢	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		÷.	4		7	٢	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	0	126	269	0	29	281	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	137	292	0	32	305	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				Т	WLTL		
Median storage veh)					1		
Upstream signal (ft)		1100	875				
pX, platoon unblocked							
vC, conflicting volume	292				429	292	
vC1, stage 1 conf vol					292		
vC2, stage 2 conf vol					137		
vCu, unblocked vol	292				429	292	
tC, single (s)	4.1				6.4	6.2	
tC, 2 stage (s)					5.4		
tF (s)	2.2				3.5	3.3	
p0 queue free %	100				95	59	
cM capacity (veh/h)	1269				634	747	
Direction, Lane #	EB 1	WB 1	SB 1	SB 2			
Volume Total	137	292	32	305			
Volume Left	0	0	32	000			
Volume Right	0	0	0	305			
cSH	1700	1700	634	747			
Volume to Capacity	0.08	0.17	0.05	0.41			
Queue Length 95th (ft)	0.00	0	4	50			
Control Delay (s)	0.0	0.0	11.0	13.1			
Lane LOS	0.0	0.0	B	B			
Approach Delay (s)	0.0	0.0	12.9	2			
Approach LOS	0.0	0.0	B				
Intersection Summary							
Average Delay			5.7				
Intersection Capacity Ut	ilization		38.2%	10		el of Service	А
Analysis Period (min)	mzauOI		15	I.		of dervice	~

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Synchro 6 Report 3/4/2011

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ţ,		λi,	1.			de.			st.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	114	22	38	225	28	27	48	25	9	18	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	124	24	41	245	30	29	52	27	10	20	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1314			661							
pX, platoon unblocked												
C, conflicting volume	275			148			538	528	136	554	525	260
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
Cu, unblocked vol	275			148			538	528	136	554	525	260
C, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			93	88	97	97	96	96
cM capacity (veh/h)	1288			1434			408	436	913	378	438	779
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	17	148	41	275	109	60						
Volume Left	17	0	41	0	29	10						
Volume Right	0	24	0	30	27	30						
cSH	1288	1700	1434	1700	491	545						
Volume to Capacity	0.01	0.09	0.03	0.16	0.22	0.11						
Queue Length 95th (ft)	1	0	2	0	21	9						
Control Delay (s)	7.8	0.0	7.6	0.0	14.4	12.4						
Lane LOS	А		А		В	В						
Approach Delay (s)	0.8		1.0		14.4	12.4						
Approach LOS					В	В						
Intersection Summary												
Average Delay			4.2									
ntersection Capacity Ut	ilizatior	1	36.0%	10	CU Lev	el of Ser	vice		А			

Barrio Logan CPU 21: Newton Ave & E	vans	St				Hori	zon Ye	ear Alt			prover Plan: AN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ф,			4			et.			4.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	23	87	22	16	63	30	27	58	31	7	30	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	95	24	17	68	33	29	63	34	8	33	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	101			118			333	292	107	341	288	85
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	101			118			333	292	107	341	288	85
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			95	90	96	99	95	96
cM capacity (veh/h)	1491			1470			558	601	948	532	604	974
Direction Long #				00.4								
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	143	118	126	80								
Volume Left	25	17	29	8								
Volume Right	24	33	34	40								
cSH	1491	1470	653	734								
Volume to Capacity	0.02	0.01	0.19	0.11								
Queue Length 95th (ft)	1	1	18	9								
Control Delay (s)	1.4	1.2	11.8	10.5								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.4	1.2	11.8	10.5								
Approach LOS			В	В								
Intersection Summary												
Average Delay			5.7									_
Intersection Capacity Ut	ilization	ו	29.2%	10	CU Lev	el of Ser	vice		A			
Analysis Period (min)			15									

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Barrio Logan CPU	
22: Main St & Evans St	

Horizon Year Alt 2 without Improvements Timing Plan: AM Peak

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Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations		4	tə		4,1				
Sign Control		Free	Free		Stop				
Grade		0%	0%		0%				
Volume (veh/h)	24	191	427	75	66	34			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Hourly flow rate (vph)	26	208	464	82	72	37			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type					None				
Median storage veh)									
Upstream signal (ft)		1318							
pX, platoon unblocked									
vC, conflicting volume	546				765	505			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	546				765	505			
tC, single (s)	4.1				6.4	6.2			
tC, 2 stage (s)									
tF (s)	2.2				3.5	3.3			
p0 queue free %	97				80	93			
cM capacity (veh/h)	1024				362	567			
Direction, Lane #	EB 1	WB 1	SB 1						
Volume Total	234	546	109						
Volume Left	234	040	72						
Volume Right	20	82	37						
cSH	1024	1700	413						
Volume to Capacity	0.03	0.32	0.26						
Queue Length 95th (ft)	0.03	0.32	26						
Control Delay (s)	1.2	0.0	16.8						
Lane LOS	1.2 A	0.0	16.8 C						
Approach Delay (s)	1.2	0.0	16.8						
Approach LOS	1.2	0.0	10.0 C						
			U						
Intersection Summary									
Average Delay			2.4						
Intersection Capacity Ut	ilizatior	1	42.6%	1	CU Leve	el of Servic	9	A	
Analysis Period (min)			15						

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Т.		J.	1.			de.			4.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	101	220	161	106	77	60	212	366	174	62	237	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	110	239	175	115	84	65	230	398	189	67	258	15
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	110	414	115	149	817	340						
Volume Left (vph)	110	0	115	0	230	67						
Volume Right (vph)	0	175	0	65	189	15						
Hadj (s)	0.53	-0.26	0.53	-0.27	-0.05	0.05						
Departure Headway (s)	8.9	8.1	9.6	8.8	7.8	8.2						
Degree Utilization, x	0.27	0.93	0.31	0.36	1.77	0.77						
Capacity (veh/h)	399	437	350	391	465	429						
Control Delay (s)	13.9	53.8	15.6	15.5	376.0	34.1						
Approach Delay (s)	45.4		15.5		376.0	34.1						
Approach LOS	E		С		F	D						
Intersection Summary												
Delay			178.3									
HCM Level of Service			F									
Intersection Capacity Ut	ilization		99.0%	10	CU Leve	el of Ser	vice		F			
Analysis Period (min)			15									

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24: National Ave & S	Samps	on St								iming P		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ĥ		×	To			40			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			1.00			0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.92			0.98			0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1749	1790		1765	1688			1823			1731	
Flt Permitted	0.62	1.00		0.71	1.00			0.98			0.93	
Satd. Flow (perm)	1138	1790		1322	1688			1793			1618	
Volume (vph)	78	50	15	48	101	106	7	107	16	62	124	121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	54	16	52	110	115	8	116	17	67	135	132
RTOR Reduction (vph)	0	12	0	0	70	0	0	6	0	0	30	0
Lane Group Flow (vph)	85	58	0	52	155	0	0	135	0	0	304	0
Confl. Peds. (#/hr)	17		3	3		17	13		14	14		13
Confl. Bikes (#/hr)						1			1			
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.5	9.5		9.5	9.5			19.2			19.2	
Effective Green, g (s)	9.5	9.5		9.5	9.5			19.2			19.2	
Actuated g/C Ratio	0.26	0.26		0.26	0.26			0.52			0.52	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	295	463		342	437			938			846	
v/s Ratio Prot		0.03			c0.09							
v/s Ratio Perm	0.07			0.04				0.08			c0.19	
v/c Ratio	0.29	0.13		0.15	0.36			0.14			0.36	
Uniform Delay, d1	10.9	10.4		10.5	11.1			4.5			5.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.1		0.2	0.5			0.1			0.3	
Delay (s)	11.4	10.5		10.7	11.6			4.6			5.4	
Level of Service	В	В		В	В			А			А	
Approach Delay (s)		11.0			11.4			4.6			5.4	
Approach LOS		В			В			А			А	
Intersection Summary												
HCM Average Control D)elay		8.1	F	ICM Lev	vel of S	ervice		A			
HCM Volume to Capacit			0.36									
Actuated Cycle Length (36.7			ost time			8.0			_
Intersection Capacity Ut	ilization		62.0%	10	CU Leve	el of Sei	rvice		В			
Analysis Period (min)			15									_
c Critical Lane Group												

Timing Plan: AM Peak 25: Newton Ave & Sampson St ٦ 1 \mathbf{r} ٩ -Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Lane Configurations 4 4 de la 4 Sign Control Stop Stop Stop Stop 23 17 15 37 32 20 39 Volume (vph) 92 79 7 48 113 0.92 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Hourly flow rate (vph) 25 100 18 16 86 40 8 52 35 22 123 42 Direction, Lane # EB1 WB1 NB 1 SB 1 Volume Total (vph) 143 142 95 187 Volume Left (vph) 25 16 22 8 Volume Right (vph) 18 40 35 42 Hadj (s) -0.01 -0.11 -0.17 -0.08 Departure Headway (s) 4.8 4.7 4.7 4.6 Degree Utilization, x 0.19 0.18 0.12 0.24 Capacity (veh/h) 718 725 703 713 Control Delay (s) 8.9 8.7 8.3 9.1 Approach Delay (s) 8.9 8.7 8.3 9.1 Approach LOS А А А А Intersection Summary Delay 8.8 HCM Level of Service А

ICU Level of Service

32.3%

15

Horizon Year Alt 2 without Improvements

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Intersection Capacity Utilization

Analysis Period (min)

Barrio Logan CPU

Synchro 6 Report 3/4/2011

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Barrio Logan CPU

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Horizon Year Alt 2 without Improvements

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			44			1	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	81	76	51	53	282	16	52	31	35	10	59	205
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	88	83	55	58	307	17	57	34	38	11	64	223
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	226	382	128	298								
Volume Left (vph)	88	58	57	11								
Volume Right (vph)	55	17	38	223								
Hadj (s)	-0.04	0.04	-0.06	-0.41								
Departure Headway (s)	5.8	5.6	6.2	5.5								
Degree Utilization, x	0.36	0.59	0.22	0.45								
Capacity (veh/h)	561	608	492	596								
Control Delay (s)	12.1	16.5	10.9	13.0								
Approach Delay (s)	12.1	16.5	10.9	13.0								
Approach LOS	В	С	В	В								
Intersection Summary												
Delay			13.8									
HCM Level of Service			В									
Intersection Capacity Ut	ilizatior	า เ	61.2%	10	CU Leve	el of Ser	vice		В			
Analysis Period (min)			15									

Barrio Logan CPU 27: Harbor Dr & Sar	npson	St				Hori	zon Ye	ear Alt			prover Plan: AN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBI
Lane Configurations	ž	仲弘		J.	41+			610			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.95			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3448		1770	3513			1751			1770	
Flt Permitted	0.95	1.00		0.95	1.00			0.93			0.84	
Satd. Flow (perm)	1770	3448		1770	3513			1642			1517	
Volume (vph)	10	750	28	75	1312	41	14	61	38	61	75	3
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	11	815	30	82	1426	45	15	66	41	66	82	3
RTOR Reduction (vph)	0	2	0	0	2	0	0	16	0	0	7	
Lane Group Flow (vph)	11	843	0	82	1469	0	0	106	0	0	176	
Confl. Peds. (#/hr)			15			29	7		4	4		
Confl. Bikes (#/hr)			2			5			6			1
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	29
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases		1426			1826			12			1615	
Permitted Phases							12			16 1 5		
Actuated Green, G (s)	1.1	38.8		7.4	45.1			10.9			21.3	
Effective Green, q (s)	1.1	38.8		7.4	45.1			10.9			21.3	
Actuated g/C Ratio	0.01	0.42		0.08	0.49			0.12			0.23	
Clearance Time (s)	4.0			4.0				4.0				
Vehicle Extension (s)	3.0			3.0				3.0				
Lane Grp Cap (vph)	21	1462		143	1732			196			353	
v/s Ratio Prot	0.01	0.24		c0.05	c0.42			100			000	
v/s Ratio Perm	0.01	0.21		00.00	00.12			0.06			c0.12	
v/c Ratio	0.52	0.58		0.57	0.85			0.54			0.50	
Uniform Delay, d1	44.9	20.1		40.5	20.2			37.9			30.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.03	
Incremental Delay, d2	21.6	0.6		5.5	4.1			3.0			1.1	
Delay (s)	66.5	20.6		46.0	24.3			41.0			32.4	
Level of Service	60.5	20.0 C		40.0	24.3 C			41.0 D			52.4 C	
Approach Delay (s)		21.2		U	25.4			41.0			32.4	
Approach LOS		21.2 C			23.4 C			-41.0 D			52.4 C	
		U			U			U			U	
Intersection Summary) el eu i		05.0			101 01 0						
HCM Average Control D			25.3	H	ICM Lev	vel of S	ervice		С			
HCM Volume to Capacit			0.75	-			(-)		04.0			
Actuated Cycle Length (91.5		Sum of I		· · /		24.0			
Intersection Capacity Ut	ilization	1	69.3%	10	CU Leve	el of Sel	rvice		С			
Analysis Period (min)			15									
c Critical Lane Group												

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Synchro 6 Report 3/4/2011

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

28: National Ave & S	Sicard	St							Т	iming F	Plan: AN	l Peak
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	Т.			4.			610			17.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	79	38	27	164	3	48	49	12	4	39	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	86	41	29	178	3	52	53	13	4	42	40
Pedestrians		7			11			3			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		641										
pX, platoon unblocked												
vC, conflicting volume	183			130			460	394	121	420	413	188
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	183			130			460	394	121	420	413	188
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			88	90	99	99	92	95
cM capacity (veh/h)	1391			1452			439	521	920	475	509	848
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	22	127	211	118	87							
Volume Left	22	0	29	52	4							
Volume Right	0	41	3	13	40							
cSH	1391	1700	1452	504	622							
Volume to Capacity	0.02	0.07	0.02	0.24	0.14							
Queue Length 95th (ft)	1	0	2	23	12							
Control Delay (s)	7.6	0.0	1.2	14.3	11.7							
Lane LOS	А		А	В	В							
Approach Delay (s)	1.1		1.2	14.3	11.7							
Approach LOS				В	В							
Intersection Summary												
Average Delay			5.5									
Intersection Capacity Ut	ilization	1	36.6%	10	CU Lev	el of Sei	rvice		А			
Analysis Period (min)			15									

Horizon Year Alt 2 without Improvements

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	-	-	•	•)	I	(*	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	T.		14	To			et.			1.4.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	26	66	43	36	222	48	31	55	15	50	45	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	72	47	39	241	52	34	60	16	54	49	17
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						1
Volume Total (vph)	28	118	39	293	110	121						
Volume Left (vph)	28	0	39	0	34	54						
Volume Right (vph)	0	47	0	52	16	17						
Hadj (s)	0.53	-0.24	0.53	-0.09	0.01	0.04						
Departure Headway (s)	6.0	5.3	5.8	5.2	5.3	5.3						
Degree Utilization, x	0.05	0.17	0.06	0.43	0.16	0.18						
Capacity (veh/h)	557	644	588	665	622	620						
Control Delay (s)	8.1	8.2	8.0	10.8	9.3	9.4						
Approach Delay (s)	8.2		10.5		9.3	9.4						
Approach LOS	A		В		A	А						
Intersection Summary												
Delay			9.6									
HCM Level of Service			A									
Intersection Capacity Ut	ilization		38.5%	10	CU Leve	el of Serv	vice		А			
Analysis Period (min)			15									

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 30: National Ave & I-5 SB Off-ramp

	-	\rightarrow	1	+	1	1		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	Ţ.			44	14	7*		
Sign Control	Free			Free	Stop			
Grade	0%			0%	0%			
Volume (veh/h)	151	7	42	279	28	149		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	164	8	46	303	30	162		
Pedestrians	1				8			
Lane Width (ft)	12.0				12.0			
Walking Speed (ft/s)	4.0				4.0			
Percent Blockage	0				1			
Right turn flare (veh)								
Median type					None			
Median storage veh)								
Upstream signal (ft)				670				
pX, platoon unblocked								
vC, conflicting volume			180		420	176		
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol			180		420	176		
tC, single (s)			4.1		6.8	6.9		
tC, 2 stage (s)								
tF (s)			2.2		3.5	3.3		
p0 queue free %			97		94	81		
cM capacity (veh/h)			1384		539	831		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2			
Volume Total	172	147	202	30	162			
Volume Left	0	46	0	30	0			
Volume Right	8	0	0	0	162			
cSH	1700	1384	1700	539	831			
Volume to Capacity	0.10	0.03	0.12	0.06	0.19			
Queue Length 95th (ft)	0	3	0	4	18			
Control Delay (s)	0.0	2.6	0.0	12.1	10.4			
Lane LOS		A		В	В			
Approach Delay (s)	0.0	1.1		10.6				
Approach LOS				В				
Intersection Summary								
Average Delay			3.4					
Intersection Capacity Uti	ilizatior	1 I	31.8%	IC	CU Leve	el of Servio	ce	
Analysis Period (min)			15					

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$		λi.	Ą.	1		4	×		1.	-
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	11	59	19	146	188	26	33	32	92	16	19	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	64	21	159	204	28	36	35	100	17	21	14
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1					
Volume Total (vph)	97	159	204	28	71	100	52					
Volume Left (vph)	12	159	0	0	36	0	17					
Volume Right (vph)	21	0	0	28	0	100	14					
Hadj (s)	-0.07	0.94	0.03	-0.67	0.14	0.05	-0.06					
Departure Headway (s)	4.7	5.9	4.9	3.2	5.2	3.2	5.0					
Degree Utilization, x	0.13	0.26	0.28	0.03	0.10	0.09	0.07					
Capacity (veh/h)	740	598	709	1121	645	1121	662					
Control Delay (s)	8.3	9.7	8.7	5.1	8.8	6.5	8.4					
Approach Delay (s)	8.3	8.8			7.5		8.4					
Approach LOS	A	А			А		А					
Intersection Summary												
Delay			8.4									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	۱	31.5%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

32: Harbor Dr & Sch	ley St								Т	iming P	lan: AM	l Peak
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	仲弘			41						4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0						4.0	
Lane Util. Factor	1.00	0.95			0.95						1.00	
Frpb, ped/bikes	1.00	1.00			1.00						0.98	
Flpb, ped/bikes	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			1.00						0.89	
Flt Protected	0.95	1.00			1.00						1.00	
Satd. Flow (prot)	1543	3539			3533						1486	
Flt Permitted	0.95	1.00			1.00						1.00	
Satd. Flow (perm)	1543	3539			3533						1486	
Volume (vph)	126	465	0	0	1473	17	0	0	0	12	25	169
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	505	0	0	1601	18	0	0	0	13	27	184
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	113	0
Lane Group Flow (vph)	137	505	0	0	1618	0	0	0	0	0	111	0
Confl. Peds. (#/hr)			8	8					2	2		
Confl. Bikes (#/hr)									5			11
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot									Perm		
Protected Phases		1826			1426						11 1 5	
Permitted Phases	10	.020								11 1 5		
Actuated Green, G (s)	9.2	50.3			33.1						20.2	
Effective Green, g (s)	9.2	50.3			33.1						20.2	
Actuated g/C Ratio	0.11	0.58			0.38						0.23	
Clearance Time (s)	4.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	164	2058			1352						347	
v/s Ratio Prot	c0.09	0.14			c0.46						011	
v/s Ratio Perm	00.00	0.1.1			00110						0.07	
v/c Ratio	0.84	0.25			1.20						0.32	
Uniform Delay, d1	37.9	8.8			26.7						27.5	
Progression Factor	1.00	1.00			1.00						1.10	
Incremental Delay, d2	29.1	0.1			96.1						0.5	
Delay (s)	67.0	8.9			122.8						30.8	
Level of Service	E	0.5 A			F						00.0 C	
Approach Delay (s)	_	21.3			122.8			0.0			30.8	
Approach LOS		C			F			A			C	
		5										
Intersection Summary						1.10						
HCM Average Control Delay 88.3				F	ICM Le	vel of S	ervice		F			
	M Volume to Capacity ratio 0.86						()					
Actuated Cycle Length (86.5			ost time	· · /		24.0			
Intersection Capacity Ut	lization	1	77.3%	10	JU Lev	el of Se	vice		D			
Analysis Period (min)			15									

Horizon Year Alt 2 without Improvements

Synchro 6 Report 3/4/2011

c Critical Lane Group

Barrio Logan CPU

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 33: National Ave & 2	28th S	t								out Im		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ተተ	٣	14	To			4	r		44.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	0.97			1.00	0.85		0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1299	1814			1754	1509		1645	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.75	1.00		0.88	
Satd. Flow (perm)	1770	3539	1583	1299	1814			1341	1509		1455	
Volume (vph)	106	245	18	186	599	126	33	102	82	118	213	307
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	266	20	202	651	137	36	111	89	128	232	334
RTOR Reduction (vph)	0	0	14	0	5	0	0	0	50	0	22	0
Lane Group Flow (vph)	115	266	6	202	783	0	0	147	39	0	672	0
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)	9.0	45.1	45.1	26.9	63.0			66.0	66.0		66.0	
Effective Green, g (s)	9.0	45.1	45.1	26.9	63.0			66.0	66.0		66.0	
Actuated g/C Ratio	0.06	0.30	0.30	0.18	0.42			0.44	0.44		0.44	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	106	1064	476	233	762			590	664		640	
v/s Ratio Prot	c0.06	0.08		0.16	c0.43							
v/s Ratio Perm			0.00					0.11	0.03		c0.46	
v/c Ratio	1.08	0.25	0.01	0.87	1.03			0.25	0.06		1.05	
Uniform Delay, d1	70.5	39.7	36.8	59.8	43.5			26.4	24.1		42.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	112.1	0.1	0.0	26.9	39.7			0.2	0.0		49.2	
Delay (s)	182.6	39.8	36.8	86.8	83.2			26.6	24.2		91.2	
Level of Service	F	D	D	F	F			С	С		F	
Approach Delay (s)		80.6			84.0			25.7			91.2	
Approach LOS		F			F			С			F	
Intersection Summary												
HCM Average Control E	Delay		79.6	H	ICM Le	vel of S	ervice		E			
HCM Volume to Capaci	ty ratio		1.04									
Actuated Cycle Length	(s)		150.0	S	Sum of I	ost time	e (S)		12.0			
Intersection Capacity Ut	tilization	1	98.2%	10	CU Lev	el of Se	rvice		F			
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 34: Boston Ave & 2	8th St					Hori	zon Ye	ear Alt			prover Plan: AN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations	ž	ţ,		ž	1.		H.	44	ř	×	41.	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Fotal Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
ane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.95		1.00	0.91		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1687	1687		1687	1611		1770	3471	1583	1770	3380	
It Permitted	0.54	1.00		0.20	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	954	1687		355	1611		1770	3471	1583	1770	3380	
/olume (vph)	250	300	150	50	80	130	90	720	90	170	880	300
Peak-hour factor, PHF		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	326	163	54	87	141	98	783	98	185	957	326
RTOR Reduction (vph)		25	0	0	79	0	0	0	62	0	39	0_0
ane Group Flow (vph)		464	0	54	149	0	98	783	36	185	1244	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	4%	2%	2%	3%	2%
urn Type	Perm	170	. /0	Perm	1.70	. , 0	Prot	170	Perm	Prot	0,0	
rotected Phases	1 CIIII	4		I CIIII	8		5	2	I CIIII	1	6	
ermitted Phases	4	4		8	0		5	2	2	1	0	
ctuated Green, G (s)	24.5	24.5		24.5	24.5		5.0	26.9	26.9	10.4	32.3	
ffective Green, g (s)	24.5	24.5		24.5	24.5		5.0	26.9	26.9	10.4	32.3	
actuated g/C Ratio	0.33	0.33		0.33	0.33		0.07	0.36	0.36	0.14	0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
/ehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
	317	560		118	535		120	1265	577	249	1479	
ane Grp Cap (vph)	317			118					5//			
/s Ratio Prot /s Ratio Perm	-0.00	0.28		0.45	0.09		0.06	0.23	0.00	c0.10	c0.37	
	c0.29	0.00		0.15	0.00		0.00	0.00	0.02	0.74	0.04	
/c Ratio	0.86	0.83		0.46	0.28		0.82	0.62		0.74	0.84	
Jniform Delay, d1	23.0	22.7		19.4	18.1		33.9	19.2	15.2	30.4	18.5	
Progression Factor	1.00	1.00 9.8		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
ncremental Delay, d2	19.9	9.8 32.6		2.8			33.2	2.3	0.2		5.9	
Delay (s)	42.9 D	32.6 C		22.2 C	18.4 B		67.1 E	21.5 C	15.5 B	41.8 D	24.4 C	
evel of Service	U			U			E		В	U		
Approach Delay (s)		36.3			19.1			25.5			26.6	
Approach LOS		D			В			С			С	
tersection Summary							_					
ICM Average Control	Delay		27.8	F	ICM Le	vel of Se	ervice		С			
ICM Volume to Capac			0.81									
Actuated Cycle Length			73.8		Sum of I	ost time	(s)		8.0			
ntersection Capacity U			80.5%			el of Ser			D.0			
Analysis Period (min)	LILLUIDI		15	I.	00 2000	0. 01 001			5			
Critical Lane Group)		.5									

35: Main St & 28th S	St								2 with T		Plan: AM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	仲孙		ž	41		Ϋ́	410		ž	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.97		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1538	3209		1758	3371		1736	3261		1736	3091	
Flt Permitted	0.29	1.00		0.50	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	462	3209		925	3371		1736	3261		1736	3091	
Volume (vph)	190	300	50	90	500	190	40	220	70	190	750	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	326	54	98	543	207	43	239	76	207	815	283
RTOR Reduction (vph)	0	13	0	0	38	0	0	31	0	0	35	0
Lane Group Flow (vph)	207	367	0	98	712	0	43	284	0	207	1063	0
Confl. Peds. (#/hr)	10		12	12		10			72			27
Confl. Bikes (#/hr)			2			4			6			1
Heavy Vehicles (%)	17%	11%	2%	2%	2%	2%	4%	4%	4%	4%	4%	31%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8	Ű		Ū	_			Ū	
Actuated Green, G (s)	46.0	46.0		46.0	46.0		3.1	26.6		12.1	35.6	
Effective Green, q (s)	46.0	46.0		46.0	46.0		3.1	26.6		12.1	35.6	
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.03	0.28		0.13	0.37	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	220	1527		440	1604		56	897		217	1138	
v/s Ratio Prot	220	0.11		440	0.21		0.02	0.09		c0.12	c0.34	
v/s Ratio Perm	c0.45	0.11		0.11	0.21		0.02	0.00		00.12	00.01	
v/c Ratio	0.94	0.24		0.22	0.44		0.77	0.32		0.95	0.93	
Uniform Delay, d1	24.1	15.0		14.9	16.8		46.4	27.8		42.0	29.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	44.2	0.1		0.3	0.2		46.0	0.2		47.8	13.6	
Delay (s)	68.3	15.1		15.1	17.0		92.5	28.0		89.8	43.0	
Level of Service	E	B		B	В		52.5	20.0 C		60.0	+0.0	
Approach Delay (s)	-	33.8		5	16.8			35.8			50.4	
Approach LOS		C			10.0 B			D			D	
Intersection Summary		Ŭ										
HCM Average Control E	Dolov		36.4		CML	vel of S	onvice		D			
HCM Volume to Capaci			0.92				ervice		U			
ctuated Cycle Length (s) 96.7			0	um of I	ost time			8.0				
						el of Sei	· · /		0.0 D			
Intersection Capacity Ut Analysis Period (min)	mzauon		78.7%	I.	SO Lev	50 30	vice		U			
c Critical Lane Group			10									

Horizon Year Alt 2 without Improvements

c Critical Lane Group

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Kimley-Horn and Associates, Inc.

Barrio Logan CPU 36: Harbor Dr & 28t	h St					Hori	zon Ye	ear Alt			prover Plan: AM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ሳቀ	74	γr	44	7		de.		Ň	4	ħ.
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.87	1.00	1.00	0.93		0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	0.96	1.00
Satd. Flow (prot)	1703	3406	1325	1719	3438	1435		1763		1649	1659	1524
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	0.96	1.00
Satd. Flow (perm)	1703	3406	1325	1719	3438	1435		1763		1649	1659	1524
Volume (vph)	120	580	4	18	843	115	0	6	2	339	15	22
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	630	4	20	916	125	0	7	2	368	16	24
RTOR Reduction (vph)	0	0	2	0	0	55	0	2	0	0	0	18
Lane Group Flow (vph)	130	630	2	20	916	70	0	7	0	187	197	6
Confl. Peds. (#/hr)			69			80			-			_
Confl. Bikes (#/hr)						3			6			7
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		ustom	Prot		custom	Split			Split		Perm
Protected Phases	11	1626	10	15	1226	13	14	14		1 13 5	13 1 5	
Permitted Phases		40.0	16			12						1513
Actuated Green, G (s)	8.6	42.6	36.6	2.7	36.7	49.0		14.1		28.1	28.1	28.1
Effective Green, g (s)	8.6	42.6	36.6	2.7	36.7	49.0		14.1		28.1	28.1	28.1
Actuated g/C Ratio	0.07	0.36	0.31	0.02	0.31	0.41		0.12		0.24	0.24	0.24
Clearance Time (s)	4.0		4.0	4.0		4.0		4.0				
Vehicle Extension (s)	3.0	1011	3.0	3.0	1050	3.0		3.0				0.50
Lane Grp Cap (vph)	123	1214	406	39	1056	588		208		388	390	358
v/s Ratio Prot	c0.08	0.18	0.00	0.01	c0.27	0.02		c0.00		0.11	c0.12	0.00
v/s Ratio Perm	4.00	0.50	0.00	0.54	0.07	0.03		0.02		0.40	0.54	0.00
v/c Ratio Uniform Delay, d1	1.06 55.4	0.52	0.00	0.51	0.87	0.12		0.03		0.48	0.51	0.02
Progression Factor	1.00	1.00	20.0	1.00	1.00	1.00		40.7		0.91	0.91	1.46
Incremental Delay, d2	97.2	0.4	0.0	10.9	7.7	0.1		0.1		0.91	1.0	0.0
Delay (s)	152.7	30.7	28.8	68.7	46.8	22.0		46.7		36.8	37.2	51.1
Level of Service	152.7 F	30.7 C	20.0 C	00.7 E	40.0 D	22.0 C		40.7 D		30.8 D	57.2 D	D
Approach Delay (s)		51.5	U	L.	44.3	U		46.7		U	37.9	D
Approach LOS		01.0 D			44.3 D			40.7 D			57.9 D	
		U			U			U			U	
Intersection Summary												
HCM Average Control E			45.6	H	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci			0.64									
Actuated Cycle Length						ost time	· · /		32.0			
Intersection Capacity Ut Analysis Period (min)	ilizatior	า เ	58.0%	ŀ	CU Lev	el of Sei	vice		В			
			15									

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 37: Boston Ave & I-	5 SB C)n-ram	р			Hori	zon Ye	ear Alt	2 with T	out Im iming P	proven Ian: AM	nents I Peak
	۶	+	*	4	+	*	•	1	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		đ,			4			de.				
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	282	104	14	20	107	96	6	36	19	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	307	113	15	22	116	104	7	39	21	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		657										
pX, platoon unblocked												
vC, conflicting volume	221			128			946	998	121	986	953	168
vC1, stage 1 conf vol												
vC2, stage 2 conf vol	004			400			0.40	000	404	000	050	400
vCu, unblocked vol	221			128			946	998	121	986	953	168
tC, single (s)	4.2			4.2			7.1	6.9	6.2	7.1	6.5	6.2
tC, 2 stage (s)	2.3			0.0			25		2.2	25	10	2.2
tF (s)	2.3			2.3 98			3.5 97	4.4 75	3.3 98	3.5 100	4.0 100	3.3 100
p0 queue free %								159				
cM capacity (veh/h)	1319			1427			196	159	931	147	196	876
Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	435	242	66									
Volume Left	307	22	7									
Volume Right	15	104	21									
cSH	1319	1427	220									
Volume to Capacity	0.23	0.02	0.30									
Queue Length 95th (ft)	23	1	30									
Control Delay (s)	6.7	0.8	28.3									
Lane LOS	A	A	D									
Approach Delay (s)	6.7	0.8	28.3									
Approach LOS			D									
Intersection Summary												
Average Delay			6.7									
Intersection Capacity Ut	ilization	1	47.9%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Barrio Logan CPU 38: Main St & 32nd	St				ear Alt			prover Plan: AN				
	≯	+	*	4	+	*	•	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ት ኩ		γí	14		Υç	4	P	Ň	T.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3090		1703	3310		1770	1863	1556	1770	1751	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3090		1703	3310		1770	1863	1556	1770	1751	
Volume (vph)	36	153	200	314	548	100	110	50	26	44	83	41
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	166	217	341	596	109	120	54	28	48	90	45
RTOR Reduction (vph)	0	172	0	0	15	0	0	0	22	0	22	0
Lane Group Flow (vph)	39	211	0	341	690	0	120	54	6	48	113	0
Confl. Peds. (#/hr)			1			6			4			16
Confl. Bikes (#/hr)			2			4			2			5
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	2.7	13.4		17.0	27.7		6.4	14.0	14.0	4.1	11.7	
Effective Green, g (s)	2.7	13.4		17.0	27.7		6.4	14.0	14.0	4.1	11.7	
Actuated g/C Ratio	0.04	0.21		0.26	0.43		0.10	0.22	0.22	0.06	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	71	642		449	1422		176	404	338	113	318	
v/s Ratio Prot	0.02	0.07		c0.20	c0.21		c0.07	0.03		0.03	c0.06	
v/s Ratio Perm									0.00			
v/c Ratio	0.55	0.33		0.76	0.49		0.68	0.13	0.02	0.42	0.36	
Uniform Delay, d1	30.3	21.7		21.9	13.3		28.1	20.4	19.8	29.1	23.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	_
Incremental Delay, d2	8.4	0.3		7.2	0.3		10.4	0.2	0.0	2.6	0.7	
Delay (s)	38.7	22.0		29.1	13.5		38.4	20.5	19.9	31.6	23.8	_
Level of Service	D	С		С	В		D	С	В	С	С	
Approach Delay (s)		23.6			18.6			31.1			25.8	
Approach LOS		С			В			С			С	
Intersection Summary												
HCM Average Control D			21.8	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit	ty ratio		0.55									
Actuated Cycle Length (s)		64.5	5	Sum of I	ost time	e (S)		12.0			
Intersection Capacity Ut	ilization		60.0%	I	CU Lev	el of Se	rvice		В			
Analysis Period (min)			15									

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 39: 32nd St & Waba	ash St					Hori	zon Ye	ear Alt		iout Im Fiming F		
	۶	*	+	*	4	+	*	۲	•	1	۲	*
Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations		25	P			4	ž		ž	*	15	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00	1.00	0.88	
Frt		1.00	0.95			1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00			0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1760	1773			1787	1574		1719	1810	2707	
Flt Permitted		0.35	1.00			0.41	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		643	1773			770	1574		1719	1810	2707	
Volume (vph)	65	25	170	80	250	45	120	50	70	215	125	290
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	27	185	87	272	49	130	54	76	234	136	315
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	98	259	0	0	321	184	0	76	234	451	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot	c	ustom	
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4		4				23	
Actuated Green, G (s)		34.4	34.4			34.4	34.4		10.3	20.2	48.4	
Effective Green, q (s)		34.4	34.4			34.4	34.4		10.3	20.2	48.4	
Actuated g/C Ratio		0.30	0.30			0.30	0.30		0.09	0.18	0.42	
Clearance Time (s)		4.0	4.0			4.0	4.0		4.0	4.0		
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		194	534			232	474		155	320	1147	
v/s Ratio Prot			0.15						0.04			
v/s Ratio Perm		0.15				c0.42	0.12				0.17	
v/c Ratio		0.51	0.49			1.38	0.39		0.49	0.73	0.39	
Uniform Delay, d1		32.9	32.7			39.9	31.6		49.5	44.4	22.7	
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		2.1	0.7			197.1	0.5		2.4	8.3	0.2	
Delay (s)		34.9	33.4			237.0	32.1		51.9	52.8	23.0	
Level of Service		С	С			F	С		D	D	С	
Approach Delay (s)			33.8			162.4				35.0		
Approach LOS			С			F				D		
Intersection Summary												
HCM Average Control E			130.6	H	ICM Le	vel of S	ervice		F			
HCM Volume to Capaci			1.16									
Actuated Cycle Length (114.2			ost time			16.0			
Intersection Capacity Ut	ilizatior	ı	95.8%	IC	CU Lev	el of Se	rvice		F			
Analysis Period (min)			15									
 Critical Lane Group 												

c Critical Lane Group

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 39: 32nd St & Wabash St

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Horizon Year Alt 2 without Improvements Timing Plan: AM Peak

Movement SBL2 SBL SBT SBR SWL2 SWL SWR SWR2 Lane Configurations 1 <			-	•	-		•			
Ideal Flow (vphpl) 1900 100 100 1100 1100 1100 1100 100	Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2	
Ideal Flow (vphpl) 1900 100 100 110 110 110 110 110 110 110 110 110	Lane Configurations		ž	4%			24			
Lane Util. Factor 1.00 0.95 0.97 Frt 1.00 0.98 0.99 Flt Protected 0.95 1.00 0.96 Statd. Flow (prot) 1765 3384 3347 Flt Permitted 0.95 1.00 0.87 Statd. Flow (perm) 1765 3384 3043 Volume (vph) 30 180 445 65 60 775 65 10 Peak-hour factor, PHF 0.92	Ideal Flow (vphpl)	1900	1900		1900	1900	1900	1900	1900	
Frit 1.00 0.98 0.99 Fit Protected 0.95 1.00 0.96 Satd. Flow (prot) 1765 3384 3347 Fit Permitted 0.95 1.00 0.87 Satd. Flow (perm) 1765 3384 3043 Volume (vph) 30 180 445 65 60 775 65 10 Peak-hour factor, PHF 0.92<	Total Lost time (s)		4.0	4.0			4.0			
Fit Protected 0.95 1.00 0.96 Satd. Flow (prot) 1765 3384 3347 Fit Permitted 0.95 1.00 0.87 Satd. Flow (perm) 1765 3384 3043 Volume (vph) 30 180 445 65 60 775 65 10 Peak-hour factor, PHF 0.92	Lane Util. Factor		1.00	0.95			0.97			
Satd. Flow (prot) 1765 3384 3347 Fit Permitted 0.95 1.00 0.87 Satd. Flow (perm) 1765 3384 3043 Volume (vph) 30 180 445 65 60 775 65 10 Peak-hour factor, PHF 0.92	Frt		1.00	0.98			0.99			
Fit Permitted 0.95 1.00 0.87 Satd. Flow (perm) 1765 3384 3043 Volume (vph) 30 180 445 65 60 775 65 10 Peak-hour factor, PHF 0.92 0 <td>Flt Protected</td> <td></td> <td>0.95</td> <td>1.00</td> <td></td> <td></td> <td>0.96</td> <td></td> <td></td> <td></td>	Flt Protected		0.95	1.00			0.96			
Satd. Flow (perm) 1765 3384 3043 Volume (vph) 30 180 445 65 60 775 65 10 Peak-hour factor, PHF 0.92 9.	Satd. Flow (prot)		1765	3384						
Volume (vph) 30 180 445 65 60 775 65 10 Peak-hour factor, PHF 0.92 0	Flt Permitted		0.95	1.00			0.87			
Peak-hour factor, PHF 0.92	Satd. Flow (perm)		1765	3384			3043			
Adj. Flow (vph) 33 196 484 71 65 842 71 11 RTOR Reduction (vph) 0 <	Volume (vph)	30	180	445	65	60	775	65	10	
RTOR Reduction (vph) 0	Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Lane Group Flow (vph) 0 229 555 0 0 989 0 0 Heavy Vehicles (%) 4% 2% 5% 2% 4%	Adj. Flow (vph)	33	196	484	71	65	842	71	11	
Heavy Vehicles (%) 4% 2% 5% 2% 4%	RTOR Reduction (vph)	0	0	0	0	0	0	0	0	
Turn Type Prot Prot Perm Protected Phases 1 6 3 Permitted Phases 3 Actuated Phases 3 Actuated Green, G (s) 19.4 29.3 24.2 Effective Green, g (s) 19.4 29.3 24.2 Actuated g/C Ratio 0.17 0.26 0.21 Clearance Time (s) 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 Lane Grp Cap (vph) 300 868 645 v/s Ratio Perm c0.33 v/c Ratio 0.76 0.64 1.53 Uniform Delay, d1 45.2 37.8 45.0 45.0 Progression Factor 1.00 1.00 1.00 1.00 Incremental Delay, d2 10.9 1.6 247.8 292.8 Level of Service E D F Approach Delay (s) 44.2 292.8 Approach LOS D F F Approach LOS D F <td>Lane Group Flow (vph)</td> <td>0</td> <td>229</td> <td>555</td> <td>0</td> <td>0</td> <td>989</td> <td>0</td> <td>0</td> <td></td>	Lane Group Flow (vph)	0	229	555	0	0	989	0	0	
Protected Phases 1 1 6 3 Permitted Phases 3 3 Actuated Phases 3 Actuated Green, G (s) 19.4 29.3 24.2 Effective Green, g (s) 19.4 29.3 24.2 Actuated g/C Ratio 0.17 0.26 0.21 Clearance Time (s) 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 300 868 645 v/s Ratio Prot c0.13 0.16 v/s Ratio Perm c0.33 v/c Ratio 0.76 0.64 1.53 Uniform Delay, d1 45.2 37.8 45.0 Progression Factor 1.00 1.00 Incommental Delay, d2 10.9 1.6 247.8 Delay (s) 56.2 39.3 292.8 Level of Service E F Approach Delay (s) 44.2 292.8 Approach LOS D F	Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%	
Permitted Phases 3 Actuated Green, G (s) 19.4 29.3 24.2 Effective Green, g (s) 19.4 29.3 24.2 Effective Green, g (s) 19.4 29.3 24.2 Actuated g/C Ratio 0.17 0.26 0.21 Clearance Time (s) 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 Lane Grp Cap (vph) 300 868 645 v/s Ratio Prot c0.13 0.16 0.17 v/s Ratio Prot c0.33 v/c Ratio 0.76 0.64 1.53 Uniform Delay, d1 45.2 37.8 45.0 97 92.8 1.00	Turn Type	Prot	Prot			Perm				
Actuated Green, G (s) 19.4 29.3 24.2 Effective Green, g (s) 19.4 29.3 24.2 Actuated g/C Ratio 0.17 0.26 0.21 Clearance Time (s) 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 Lane Grp Cap (vph) 300 868 645 v/s Ratio Prot c0.13 0.16 v/s Ratio Prot v/c Ratio 0.76 0.64 1.53 Uniform Delay, d1 45.2 37.8 45.0 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 10.9 1.6 247.8 Delay (s) 56.2 39.3 292.8 Level of Service E D F Approach Delay (s) 44.2 292.8 Approach LOS D F	Protected Phases	1	1	6			3			
Effective Green, g (s) 19.4 29.3 24.2 Actuated g/C Ratio 0.17 0.26 0.21 Clearance Time (s) 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 Lane Grp Cap (vph) 300 868 645 v/s Ratio Prot c0.13 0.16	Permitted Phases					3				
Actuated g/C Ratio 0.17 0.26 0.21 Clearance Time (s) 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 Lane Grp Cap (vph) 300 868 645 v/s Ratio Prot c0.13 0.16 0.76 v/s Ratio Perm c0.33 0.10 1.53 Uniform Delay, d1 45.2 37.8 45.0 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 10.9 1.6 247.8 Delay (s) 56.2 39.3 292.8 Level of Service E D F Approach Delay (s) 44.2 292.8 Approach LOS	Actuated Green, G (s)		19.4	29.3			24.2			
Clearance Time (s) 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 300 868 645 v/s Ratio Port c0.13 0.16	Effective Green, g (s)		19.4	29.3			24.2			
Vehicle Extension (s) 3.0 3.0 3.0 Lane Grp Cap (vph) 300 868 645 v/s Ratio Prot c0.13 0.16	Actuated g/C Ratio		0.17				0.21			
Lane Grp Cap (vph) 300 868 645 v/s Ratio Prot c0.13 0.16			4.0	4.0			4.0			
v/s Ratio Prot c0.13 0.16 v/s Ratio Perm c0.33 v/c Ratio 0.76 0.64 Uniform Delay, d1 45.2 37.8 Progression Factor 1.00 1.00 Incremental Delay, d2 10.9 1.6 Delay (s) 56.2 39.3 Level of Service E F Approach Delay (s) 44.2 292.8 Approach LOS D F	Vehicle Extension (s)		3.0	3.0			3.0			
v/s Ratio Perm c0.33 v/c Ratio 0.76 0.64 1.53 Uniform Delay, d1 45.2 37.8 45.0 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 10.9 1.6 247.8 Delay (s) 56.2 39.3 292.8 Level of Service E D F Approach Delay (s) 44.2 292.8 Approach LOS D F	Lane Grp Cap (vph)		300	868			645			
v/c Ratio 0.76 0.64 1.53 Uniform Delay, d1 45.2 37.8 45.0 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 10.9 1.6 247.8 Delay (s) 56.2 39.3 292.8 Level of Service E D F Approach Delay (s) 44.2 292.8 Approach LOS D F			c0.13	0.16						
Uniform Delay, d1 45.2 37.8 45.0 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 10.9 1.6 247.8 Delay (s) 56.2 39.3 292.8 Level of Service E D F Approach Delay (s) 44.2 292.8 Approach LOS D F										
Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 10.9 1.6 247.8 Delay (s) 56.2 39.3 292.8 Level of Service E F Approach Delay (s) 44.2 292.8 Approach LOS D F										
Incremental Delay, d2 10.9 1.6 247.8 Delay (s) 56.2 39.3 292.8 Level of Service E D F Approach Delay (s) 44.2 292.8 Deproach LOS D F										
Delay (s)56.239.3292.8Level of ServiceEDFApproach Delay (s)44.2292.8Approach LOSDF										
Level of Service E D F Approach Delay (s) 44.2 292.8 Approach LOS D F	Incremental Delay, d2									
Approach Delay (s)44.2292.8Approach LOSDF										
Approach LOS D F			E							
Intersection Summary	Approach LOS			D			F			
	Intersection Summary			_				_		

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ሻ	ሳቀ	2*	36	44	1	łç	44	p#	ň	^	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.0
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.0
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.8
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.0
Satd. Flow (prot)	1719	3438	1517	1687	3374	1509	1719	3438	1482	1719	3438	153
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.0
Satd. Flow (perm)	1719	3438	1517	1687	3374	1509	1719	3438	1482	1719	3438	153
Volume (vph)	140	641	140	300	756	390	30	160	30	130	1040	19
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	152	697	152	326	822	424	33	174	33	141	1130	20
RTOR Reduction (vph)	0	0	122	0	0	277	0	0	28	0	0	5
Lane Group Flow (vph)	152	697	30	326	822	147	33	174	5	141	1130	15
Confl. Bikes (#/hr)			3						16			
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	C	custom	Prot	C	custom	Prot		Perm	Prot	c	ustor
Protected Phases	3	1426	15	13	1826		15	12		11 1 5	1615	31
Permitted Phases			14			18			12			1
Actuated Green, G (s)	10.3	8.7	6.5	16.4	14.8	10.4	2.2	12.0	12.0	12.8	26.6	32.
Effective Green, g (s)	10.3	8.7	6.5	16.4	14.8	10.4	2.2	12.0	12.0	12.8	26.6	32.
Actuated g/C Ratio	0.13	0.11	0.08	0.20	0.18	0.13	0.03	0.15	0.15	0.16	0.32	0.4
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	365	120	338	610	192	46	504	217	269	1117	69
v/s Ratio Prot	0.09	c0.20	0.01	c0.19	c0.24		0.02	0.05		c0.08	c0.33	0.0
v/s Ratio Perm			0.01			0.10			0.00			0.0
v/c Ratio	0.70	1.91	0.25	0.96	1.35	0.77	0.72	0.35	0.02	0.52	1.01	0.2
Uniform Delay, d1	34.3	36.6	35.4	32.5	33.6	34.6	39.5	31.4	29.9	31.8	27.6	16.
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.17	0.89	0.9
Incremental Delay, d2	9.9	419.4	1.1	39.2	167.1	16.6	41.5	0.4	0.0	1.8	29.6	0.
Delay (s)	44.3	456.0	36.5	71.7	200.7	51.2	81.0	31.8	30.0	39.0	54.2	15.
Level of Service	D	F	D	E	F	D	F	С	С	D	D	
Approach Delay (s)		329.8			133.6			38.3			47.3	
Approach LOS		F			F			D			D	
Intersection Summary												
HCM Average Control D)elav		144.3	ŀ	ICM Le	vel of Se	ervice		F			
HCM Volume to Capacit			1.08				51 1100					
Actuated Cycle Length (81.9	ç	Sum of I	ost time	(s)		24.0			
	ntersection Capacity Utilization 79.8%					el of Ser			24.0 D			
Analysis Period (min)			15						5			
			10									

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Synchro 6 Report 3/4/2011

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU					Horizo	on
41: Main St & I-15 Ramps						
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Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	ň	ተተ	44	p*	14			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00			
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00	1.00	0.85	0.90			
Flt Protected	0.95	1.00	1.00	1.00	0.99			
Satd. Flow (prot)	1770	3539	3539	1583	1643			
Flt Permitted	0.95	1.00	1.00	1.00	0.99			
Satd. Flow (perm)	1770	3539	3539	1583	1643			
Volume (vph)	37	187	516	107	108	268		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	40	203	561	116	117	291		
RTOR Reduction (vph)	0	0	0	78	144	0		
Lane Group Flow (vph)	40	203	561	38	264	0		
Confl. Peds. (#/hr)					2	2		
Confl. Bikes (#/hr)						2		
Turn Type	Prot			Perm				
Protected Phases	5	2	6		4			
Permitted Phases				6				
Actuated Green, G (s)	1.6	18.0	12.4	12.4	11.5			
Effective Green, g (s)	1.6	18.0	12.4	12.4	11.5			
Actuated g/C Ratio	0.04	0.48	0.33	0.33	0.31			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	76	1699	1170	523	504			
v/s Ratio Prot	c0.02	0.06	c0.16		c0.16			
v/s Ratio Perm				0.02				
v/c Ratio	0.53	0.12	0.48	0.07	0.52			
Uniform Delay, d1	17.6	5.4	10.0	8.6	10.7			
Progression Factor	1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	6.4	0.0	0.3	0.1	1.0			
Delay (s)	24.0	5.4	10.3	8.7	11.7			
Level of Service	С	A	В	A	В			
Approach Delay (s)		8.5	10.0		11.7			
Approach LOS		A	В		В			
Intersection Summary								
HCM Average Control E	Delay		10.3	H	ICM Lev	el of Service	В	
HCM Volume to Capacit			0.50					
Actuated Cycle Length (37.5			ost time (s)	12.0	
Intersection Capacity Ut	ilization		50.2%	10	CU Leve	el of Service	А	
Analysis Period (min)			15					
c Critical Lane Group								

Year Alt 2 without Improvements

Timing Plan: AM Peak

Barrio Logan CPU Horizon Year Alt 2 without Improvements 1: Commercial St & 16th St Timing Plan: PM Peak _ → · ` Movement EBL EBT EBR WBT WBR NBL NBT NBR SBL SBT SBR SWR Lane Configurations 41 1900 1900 4 1900 4 Ideal Flow (vphpl) 1900 1900 1900 1900 1900 1900 1900 1900 1900 Total Lost time (s) 4.0 4.0 4.0 4.0 Lane Util. Factor 1.00 1.00 0.95 0.95 Frpb, ped/bikes 1.00 1.00 1.00 0.99 Flpb, ped/bikes 1.00 1.00 1.00 1.00 Frt 0.99 0.97 0.99 0.98 Flt Protected 0.99 1.00 1.00 1.00 Satd. Flow (prot) 1836 1806 3513 3437 Flt Permitted 0.53 1.00 0.92 0.88 Satd. Flow (perm) 973 1806 3244 3033 Volume (vph) 68 350 17 493 119 25 700 36 510 81 28 0 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Adj. Flow (vph) 74 380 18 536 129 27 761 30 39 554 88 0 RTOR Reduction (vph) 0 2 0 0 0 0 0 0 0 15 0 0 Lane Group Flow (vph) 0 470 0 665 0 0 818 0 0 666 0 0 Confl. Peds. (#/hr) 9 11 28 7 28 Confl. Bikes (#/hr) 2 Perm Turn Type Perm Perm custom Protected Phases 4 8 2 6 Permitted Phases 4 2 6 27.0 27.0 27.0 27.0 Actuated Green, G (s) Effective Green, g (s) 27.0 27.0 27.0 27.0 Actuated g/C Ratio 0.44 0.44 0.44 0.44 Clearance Time (s) 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 424 786 1413 1321 v/s Ratio Prot 0.37 c0.48 c0.25 0.22 v/s Ratio Perm v/c Ratio 0.85 0.58 0.50 1.11 Uniform Delay, d1 17.5 15.6 13.2 12.7 **Progression Factor** 1.00 1.00 1.00 1.00 Incremental Delay, d2 76.8 8.4 1.7 1.4 24.0 14.9 Delay (s) 94.3 14.0 Level of Service F С В В Approach Delay (s) 94.3 24.0 14.9 14.0 Approach LOS F в С В Intersection Summary HCM Average Control Delay 31.2 С HCM Level of Service HCM Volume to Capacity ratio 0.84 8.0 Actuated Cycle Length (s) 62.0 Sum of lost time (s) Intersection Capacity Utilization 111.1% ICU Level of Service н Analysis Period (min) 15 c Critical Lane Group

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Kimley-Horn and Associates, Inc.

2: National Ave & 16	oth St								1	Iming P	lan: PN	г Реак
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4 1⊅		76	To			et.			1.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	91	347	31	3	458	25	61	41	7	125	25	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	377	34	3	498	27	66	45	8	136	27	76
Pedestrians		14			10			37			27	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			3			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					668							
pX, platoon unblocked												
vC, conflicting volume	552			448			1237	1187	252	971	1191	552
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	552			448			1237	1187	252	971	1191	552
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			19	72	99	2	83	83
cM capacity (veh/h)	991			1075			82	159	718	139	158	461
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	288	222	3	525	118	239						
Volume Left	99	0	3	0	66	136						
Volume Right	0	34	0	27	8	76						
cSH	991	1700	1075	1700	107	182						
Volume to Capacity	0.10	0.13	0.00	0.31	1.10	1.32						
Queue Length 95th (ft)	8	0	0	0	185	343						
Control Delay (s)	3.8	0.0	8.4	0.0		225.9						
Lane LOS	А		A		F	F						
Approach Delay (s)	2.1		0.1		193.2	225.9						
Approach LOS					F	F						
Intersection Summary												
Average Delay			55.9									
Intersection Capacity Ut	ilization	1	65.0%	10	CU Lev	el of Ser	vice		С			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ň	14	LDIX	100L	1	WDI	NDL	A.	NDI	JDL	4	001
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	1900	4.0	4.0	1900	1900	4.0	1900	1900	4.0	1900
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			0.99			1.00	
Fipb, ped/bikes	1.00	0.98		1.00	0.99			0.99			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1751	1808		1758	1829			1782			1684	
Flt Permitted	0.57	1.00		0.46	1.00			0.81			0.97	
Satd. Flow (perm)	1058	1808		0.46 847	1829			1489			1641	
<u> </u>			60			20	70		10	6		10
Volume (vph)	35	325	62	9	254	28	78	58	13	6	23	40
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	353	67	10	276	30	85	63	14	7	25	43
RTOR Reduction (vph)	0	11	0	0	6	0	0	5	0	0	29	C
Lane Group Flow (vph)	38	409	0	10	300	0	0	157	0	0	46	0
Confl. Peds. (#/hr)	21		16	16		21	28		9	9		28
Confl. Bikes (#/hr)			4						3			6
Turn Type	Perm			Perm	_		Perm	-		Perm	_	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.6	12.6		12.6	12.6			9.9			9.9	
Effective Green, g (s)	12.6	12.6		12.6	12.6			9.9			9.9	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.32			0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	437	747		350	756			483			533	
v/s Ratio Prot		c0.23			0.16							
v/s Ratio Perm	0.04			0.01				c0.11			0.03	
v/c Ratio	0.09	0.55		0.03	0.40			0.32			0.09	
Uniform Delay, d1	5.4	6.8		5.3	6.3			7.8			7.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.8		0.0	0.3			0.4			0.1	
Delay (s)	5.5	7.6		5.3	6.6			8.2			7.2	
Level of Service	А	Α		A	Α			А			Α	
Approach Delay (s)		7.4			6.6			8.2			7.2	
Approach LOS		A			A			А			А	
Intersection Summary												
HCM Average Control D			7.3	H	ICM Le	vel of Se	ervice		Α			
HCM Volume to Capaci			0.45									
Actuated Cycle Length ((S)		30.5	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization	1	50.5%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ŝ			\$			1			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	9	50	29	9	50	23	20	91	12	16	38	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	54	32	10	54	25	22	99	13	17	41	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	96	89	134	67								
Volume Left (vph)	10	10	22	17								
Volume Right (vph)	32	25	13	9								
Hadj (s)	-0.14	-0.11	0.01	0.01								
Departure Headway (s)	4.3	4.4	4.4	4.5								
Degree Utilization, x	0.11	0.11	0.16	0.08								
Capacity (veh/h)	790	774	778	754								
Control Delay (s)	7.9	7.9	8.3	7.9								
Approach Delay (s)	7.9	7.9	8.3	7.9								
Approach LOS	A	А	А	Α								
Intersection Summary												
Delay			8.0									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	n .	23.3%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 5: Main St & Sigsbe	e St					Hori	zon Ye	ear Alt	2 with T		prover Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			610			4.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	4	2	13	38	0	31	0	98	12	20	60	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	2	14	41	0	34	0	107	13	22	65	2
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	21	75	120	89								
Volume Left (vph)	4	41	0	22								
Volume Right (vph)	14	34	13	2								
Hadj (s)	-0.33	-0.13	-0.03	0.07								
Departure Headway (s)	4.1	4.3	4.2	4.3								
Degree Utilization, x	0.02	0.09	0.14	0.11								
Capacity (veh/h)	824	803	833	812								
Control Delay (s)	7.2	7.7	7.8	7.8								
Approach Delay (s)	7.2	7.7	7.8	7.8								
Approach LOS	A	А	А	A								
Intersection Summary												
Delay			7.8									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	า	27.7%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU	Ho
6: Harbor Dr & Sigsbee St	

orizon Year Alt 2 without Improvements Timing Plan: PM Peak

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Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	7	44	4 12		1,1			
Sign Control		Free	Free		Stop			
Grade		0%	0%		0%			
Volume (veh/h)	160	1945	750	100	90	70		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	174	2114	815	109	98	76		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type					Raised			
Median storage veh)					0			
Upstream signal (ft)			1319					
pX, platoon unblocked	0.93				0.93	0.93		
vC, conflicting volume	924				2274	462		
vC1, stage 1 conf vol					870			
vC2, stage 2 conf vol					1405			
vCu, unblocked vol	843				2295	346		
tC, single (s)	4.1				6.8	6.9		
tC, 2 stage (s)					5.8			
tF (s)	2.2				3.5	3.3		
p0 queue free %	76				0	87		
cM capacity (veh/h)	734				78	605		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1		
Volume Total	174	1057	1057	543	380	174		
Volume Left	174	1057	1057	543 0	380	98		
	174	0	0	0	109	98 76		
Volume Right cSH	734	1700	1700	1700	1700	127		
Volume to Capacity	0.24	0.62	0.62	0.32	0.22	127		
	23	0.62	0.62	0.32	0.22	289		
Queue Length 95th (ft) Control Delay (s)	11.4	0.0	0.0	0.0	0.0	289		
Lane LOS	11.4 B	0.0	0.0	0.0	0.0	275.0 F		
Approach Delay (s)	0.9			0.0		275.0		
	0.9			0.0		275.0 F		
Approach LOS						F		
Intersection Summary								
Average Delay			14.7					
Intersection Capacity Ut	ilization		69.7%	10	CU Lev	el of Servio	æ	
Analysis Period (min)			15					

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ţ,		×	*			4.0			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	532	70	40	160	0	56	0	123	272	109	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	578	76	43	174	0	61	0	134	296	118	42
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							(
Volume Total (vph)	654	43	174	195	457							
Volume Left (vph)	0	43	0	61	296							
Volume Right (vph)	76	0	0	134	42							
Hadj (s)	-0.04	0.53	0.03	-0.32	0.11							
Departure Headway (s)	7.1	8.8	8.3	7.7	7.2							
Degree Utilization, x	1.29	0.11	0.40	0.41	0.91							
Capacity (veh/h)	511	389	413	439	497							
Control Delay (s)	168.2	11.6	15.5	15.9	47.7							
Approach Delay (s)	168.2	14.7		15.9	47.7							
Approach LOS	F	В		С	E							
Intersection Summary												
Delay			90.7									
HCM Level of Service			F									
Intersection Capacity Ut	ilizatior	า	77.1%	10	CU Lev	el of Ser	vice		D			
Analysis Period (min)			15									

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Barrio Logan CPU 8: National Ave & Be	eardsl	ev St				Horiz	zon Ye	ear Alt	2 with T		proven Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	ħ		74	To			610			1.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	19	635	2	113	358	77	9	43	132	188	83	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	690	2	123	389	84	10	47	143	204	90	12
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	21	692	123	473	200	307						
Volume Left (vph)	21	0	123	0	10	204						
Volume Right (vph)	0	2	0	84	143	12						
Hadj (s)	0.53	0.03	0.53	-0.09	-0.39	0.14						
Departure Headway (s)	8.5	8.0	8.4	7.8	8.3	8.2						
Degree Utilization, x	0.05	1.54	0.29	1.02	0.46	0.70						
Capacity (veh/h)	416	454	423	473	409	428						
Control Delay (s)	10.7	272.7	13.6	75.4	18.3	28.5						
Approach Delay (s)	265.1		62.6		18.3	28.5						
Approach LOS	F		F		С	D						
Intersection Summary												
Delay			131.5									
HCM Level of Service			F									
Intersection Capacity Ut	ilizatior	า	80.9%	10	CU Lev	el of Ser	vice		D			
Analysis Period (min)			15									

Movement EB Lane Configurations Sign Control		$\mathbf{\hat{z}}$	~								_
Lane Configurations Sign Control	L EBT		•	-	•	1	Ť	۲	1	Ļ	~
Sign Control		EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
	ф,			4			de la			44.	
	Stop			Stop			Stop			Stop	
Volume (vph)	7 60	4	13	93	19	5	71	37	46	94	12
Peak Hour Factor 0.9	2 0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8 65	4	14	101	21	5	77	40	50	102	13
Direction, Lane # EB	1 WB 1	NB 1	SB 1								
Volume Total (vph) 7	7 136	123	165								
Volume Left (vph)	8 14	5	50								
Volume Right (vph)	4 21	40	13								
Hadj (s) 0.0	2 -0.04	-0.15	0.05								
Departure Headway (s) 4.	8 4.6	4.5	4.6								
Degree Utilization, x 0.1	0 0.18	0.15	0.21								
Capacity (veh/h) 69	4 721	758	735								
Control Delay (s) 8.	3 8.6	8.3	8.9								
Approach Delay (s) 8.	3 8.6	8.3	8.9								
Approach LOS	A A	А	А								
Intersection Summary											
Delay		8.6									
HCM Level of Service		А									
Intersection Capacity Utilizat	on	32.3%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)		15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			de.			4.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	22	64	4	78	33	79	0	25	109	144	39	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	70	4	85	36	86	0	27	118	157	42	18
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	98	207	146	217								
Volume Left (vph)	24	85	0	157								
Volume Right (vph)	4	86	118	18								
Hadj (s)	0.06	-0.13	-0.45	0.13								
Departure Headway (s)	5.1	4.8	4.5	5.0								
Degree Utilization, x	0.14	0.28	0.18	0.30								
Capacity (veh/h)	634	694	731	676								
Control Delay (s)	9.0	9.6	8.5	10.1								
Approach Delay (s)	9.0	9.6	8.5	10.1								
Approach LOS	А	А	А	В								
Intersection Summary												
Delay			9.5									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	n	47.4%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 11: Harbor Dr & Bea	ardsley	v St				110112011	Year Alt 2 without Improvemen Timing Plan: PM Pea
	٦	-	+	×	1	4	
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	ň	<u> </u>	朴Ъ		W	-	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	95	1950	820	20	40	30	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	103	2120	891	22	43	33	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					Raised		
Median storage veh)					0		
Upstream signal (ft)			658				
pX, platoon unblocked	0.88				0.88	0.88	
vC, conflicting volume	913				2168	457	
vC1, stage 1 conf vol					902		
vC2, stage 2 conf vol					1266		
vCu, unblocked vol	765				2191	246	
tC, single (s)	4.3				6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)	2.3				3.5	3.3	
p0 queue free %	85				55	95	
cM capacity (veh/h)	698				96	664	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	
Volume Total	103	1060	1060	594	319	76	
Volume Left	103	0	0	0	0	43	
Volume Right	0	0	0	0	22	33	
cSH	698	1700	1700	1700	1700	151	
Volume to Capacity	0.15	0.62	0.62	0.35	0.19	0.50	
Queue Length 95th (ft)	13	0	0	0	0	60	
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	50.6	
Lane LOS	В					F	
Approach Delay (s)	0.5			0.0		50.6 F	
Approach LOS						F	
Intersection Summary							
Average Delay			1.6				
Intersection Capacity Ut	ilization		64.6%	I	CU Leve	el of Service	C
Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations)r	4		H.	4			41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor				0.95	0.95		1.00	1.00			0.95	
Frt				1.00	0.94		1.00	1.00			0.98	
Flt Protected				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (prot)				1478	1450		1626	1712			3195	
Flt Permitted				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (perm)				1478	1450		1626	1712			3195	
Volume (vph)	0	0	0	517	173	167	383	343	0	0	332	44
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	562	188	182	416	373	0	0	361	48
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	14	(
Lane Group Flow (vph)	0	0	0	459	448	0	416	373	0	0	395	(
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%
Turn Type				Split			Split					
Protected Phases				. 8	8		6	6			2	
Permitted Phases												
Actuated Green, G (s)				26.5	26.5		22.0	22.0			14.3	
Effective Green, g (s)				26.5	26.5		22.0	22.0			14.3	
Actuated g/C Ratio				0.35	0.35		0.29	0.29			0.19	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				524	514		478	504			611	
v/s Ratio Prot				c0.31	0.31		c0.26	0.22			c0.12	
v/s Ratio Perm												
v/c Ratio				0.88	0.87		0.87	0.74			0.65	
Uniform Delay, d1				22.6	22.6		25.0	23.8			27.9	
Progression Factor				1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2				15.1	14.9		15.8	5.8			2.4	
Delay (s)				37.7	37.5		40.8	29.6			30.3	
Level of Service				D	D		D	С			С	
Approach Delay (s)		0.0			37.6			35.5			30.3	
Approach LOS		А			D			D			С	
Intersection Summary												
HCM Average Control D			35.4	F	ICM Le	vel of S	ervice		D			
HCM Volume to Capacit			0.82									
Actuated Cycle Length (74.8			ost time	· · /		12.0			
Intersection Capacity Ut	ilization		65.8%	10	CU Lev	el of Se	rvice		С			
Analysis Period (min)			15									

Horizon Year Alt 2 without Improvements

13: Logan Ave & Ce		Jiave	2 I KV	y						Fiming F		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ň	Ţ,		76	4	7	H.	44	٣	7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1762	1754		1766	1863	1549	1530	3059	1312	1530	3019	
Flt Permitted	0.37	1.00		0.13	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	684	1754		248	1863	1549	1530	3059	1312	1530	3019	
Volume (vph)	130	450	230	100	350	90	140	506	700	114	684	51
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	489	250	109	380	98	152	550	761	124	743	55
RTOR Reduction (vph)	0	23	0	0	0	61	0	0	97	0	7	0
Lane Group Flow (vph)	141	716	0	109	380	37	152	550	664	124	791	0
Confl. Peds. (#/hr)	10		13	13		10			27			27
Confl. Bikes (#/hr)			4			2			3			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8			2			
Actuated Green, G (s)	30.0	30.0		30.0	30.0	30.0	13.5	33.0	33.0	5.0	24.5	
Effective Green, q (s)	30.0	30.0		30.0	30.0	30.0	13.5	33.0	33.0	5.0	24.5	
Actuated g/C Ratio	0.38	0.38		0.38	0.38	0.38	0.17	0.41	0.41	0.06	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	257	658		93	699	581	258	1262	541	96	925	
v/s Ratio Prot		0.41			0.20		0.10	0.18		c0.08	0.26	
v/s Ratio Perm	0.21			c0.44		0.02			c0.51			
v/c Ratio	0.55	1.09		1.17	0.54	0.06	0.59	0.44	1.23	1.29	0.86	
Uniform Delay, d1	19.7	25.0		25.0	19.6	16.0	30.7	16.8	23.5	37.5	26.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.79	0.78	0.64	1.00	1.00	
Incremental Delay, d2	2.4	61.4		146.9	0.9	0.0	1.0	0.3	107.4	188.9	10.0	
Delay (s)	22.1	86.4		171.9	20.5	16.1	25.4	13.4	122.4	226.4	36.1	
Level of Service	С	F		F	С	В	С	В	F	F	D	
Approach Delay (s)		76.1			47.9			71.3			61.7	
Approach LOS		E			D			E			E	
Intersection Summary												
HCM Average Control D			66.5			vel of S	onvico		E			
HCM Volume to Capacit			1.21				CIVICE		Ē			
Actuated Cycle Length (80.0	C	um of I	ost time	(s)		12.0			
Intersection Capacity Ut		1	00.3%			el of Sei			12.0 G			
Analysis Period (min)	mzatiol		15	N	SO LEV		100		9			
Critical Lane Group			10									

c Critical Lane Group

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Synchro 6 Report 3/4/2011

Kimley-Horn and Associates, Inc.

Barrio Logan CPU

Barrio Logan CPU	
14 [.] National Ave & Cesar F. Chavez Pkwy	

Horizon Year Alt 2 without Improvements Timing Plan: PM Peak

> Synchro 6 Report 3/4/2011

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	×	ţ,	34	To	ž	41.	H.	4	ř
Volume (vph)	300	400	110	270	120	1000	120	550	410
Turn Type	Perm		Perm		Perm		Perm		Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phases	4	4	8	8	2	2	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	42.0	42.0	42.0	42.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	52.5%	52.5%	52.5%	52.5%	47.5%	47.5%	47.5%	47.5%	47.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	38.0	38.0	38.0	38.0	34.0	34.0	34.0	34.0	34.0
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.42	0.42	0.42	0.42	0.42
v/c Ratio	1.48	0.87	1.13	0.71	0.92	0.88	1.60	0.87	0.53
Control Delay	262.8	30.4	155.1	21.3	79.6	25.6	316.2	17.2	1.3
Queue Delay	0.0	0.6	8.3	0.0	0.0	1.4	0.0	0.8	0.6
Total Delay	262.8	31.1	163.5	21.3	79.6	27.0	316.2	18.1	2.0
LOS	F	С	F	С	E	С	F	В	А
Approach Delay		101.3		45.2		32.1		45.0	
Approach LOS		F		D		С		D	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	: 80								
Offset: 2 (3%), Referen	nced to p	bhase 2	NBTL a	and 6:SE	BTL, Sta	art of G	reen		
Natural Cycle: 65									
Control Type: Actuated	d-Coordii	nated							
Maximum v/c Ratio: 1.	.60								
Intersection Signal Del						tion LO			
Intersection Capacity L	Jtilizatior	n 98.5%		1	CU Lev	el of Se	rvice F		
Analysis Period (min) '	15								

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy

	→ ø4	
38 s	42 s	
↓ ø6	₩ ø8	
38 s	42 s	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	Т.)r	1.		Υŗ	416		7	4	Ħ.
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1745		1770	1722		1612	3179		1530	1610	1369
Flt Permitted	0.25	1.00		0.12	1.00		0.19	1.00		0.12	1.00	1.00
Satd. Flow (perm)	463	1745		224	1722		331	3179		189	1610	1369
Volume (vph)	300	400	290	110	270	275	120	1000	100	120	550	410
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	435	315	120	293	299	130	1087	109	130	598	446
RTOR Reduction (vph)	0	33	0	0	18	0	0	9	0	0	0	256
Lane Group Flow (vph)	326	717	0	120	574	0	130	1187	0	130	598	190
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	38.0	38.0		38.0	38.0		34.0	34.0		34.0	34.0	34.0
Effective Green, g (s)	38.0	38.0		38.0	38.0		34.0	34.0		34.0	34.0	34.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.42	0.42		0.42	0.42	0.42
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	220	829		106	818		141	1351		80	684	582
v/s Ratio Prot		0.41			0.33			0.37			0.37	
v/s Ratio Perm	c0.70			0.54			0.39			c0.69		0.14
v/c Ratio	1.48	0.87		1.13	0.70		0.92	0.88		1.62	0.87	0.33
Uniform Delay, d1	21.0	18.7		21.0	16.5		21.7	21.1		23.0	21.0	15.3
Progression Factor	1.00	1.00		1.00	1.00		0.79	0.80		0.40	0.37	0.13
Incremental Delay, d2	239.6	9.4		127.4	2.7		55.1	7.9		305.2	7.2	0.7
Delay (s)	260.6	28.1		148.4	19.3		72.3	24.7		314.4	15.0	2.6
Level of Service	F	С		F	В		E	С		F	В	A
Approach Delay (s)		98.5			41.0			29.4			43.4	
Approach LOS		F			D			С			D	
Intersection Summary												
HCM Average Control E	Delay		52.5	F	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci			1.55		20							
Actuated Cycle Length			80.0		Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut			98.5%			el of Sei	· · /					
Analysis Period (min)			15									
			10									

c Critical Lane Group

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15: Newton Ave &	٨		_	+	*	ŧ	1	1	
	-	-	•)			•	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	۲	Ţ.	۳	To	1	41.	Υç	ţ,	
Volume (vph)	120	130	90	70	40	790	170	910	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0	
Total Split (%)			38.8%		61.3%		61.3%	61.3%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	14.7	14.7	14.7	14.7	57.3	57.3	57.3	57.3	
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.72	0.72	0.72	0.72	
v/c Ratio	0.69	0.61	0.52	0.53	0.40	0.40	0.61	0.87	
Control Delay	48.3	31.2	37.9	16.6	15.8	4.1	14.1	15.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.4	
Total Delay	48.3	31.2	37.9	16.6	15.8	4.2	14.1	16.8	
LOS	D	С	D	В	В	А	В	В	
Approach Delay		37.6		23.2		4.7		16.4	
Approach LOS		D		С		А		В	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	h: 80								
Offset: 0 (0%), Refere		hase 2	NRTI a	and 6.SP		art of G	neen		
Natural Cycle: 90		11000 2.			, UI		0011		
Control Type: Actuate	d-Coordi	nated							
Maximum v/c Ratio: 0		alou							
Intersection Signal De					ntersec		S- B		
Intersection Capacity		86.5%			CU Lev				
Analysis Period (min)						2. 0. 00			

Splits and Phases:	15: Newton Ave & Cesar E. Chavez I	Pkwy
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49 s		31 s

↑ ø2	→ _{ø4}
49 s	31 s
↓ ø6	* ø8
49 s	31 s

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Synchro 6 Report 3/4/2011

Barrio Logan CPU 15: Newton Ave & C	cesar E	E. Chav	vez Pk	wy		поп	2011 16	ai Ait			prover Plan: PN	
	۶	+	•	4	+	*	≺	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	ţ		×	1.		Ϋ́	410		ž	î.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.95		1.00	0.90		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1765		1770	1681		1612	3189		1612	1681	
Flt Permitted	0.41	1.00		0.41	1.00		0.15	1.00		0.29	1.00	
Satd. Flow (perm)	769	1765		769	1681		248	3189		484	1681	
Volume (vph)	120	130	70	90	70	130	40	790	60	170	910	60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	141	76	98	76	141	43	859	65	185	989	65
RTOR Reduction (vph)	0	30	0	0	103	0	0	5	0	0	2	C
Lane Group Flow (vph)	130	187	0	98	114	0	43	919	0	185	1052	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.7	14.7		14.7	14.7		57.3	57.3		57.3	57.3	
Effective Green, g (s)	14.7	14.7		14.7	14.7		57.3	57.3		57.3	57.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.72	0.72		0.72	0.72	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	141	324		141	309		178	2284		347	1204	
v/s Ratio Prot		0.11			0.07			0.29			c0.63	
v/s Ratio Perm	c0.17			0.13			0.17			0.38		
v/c Ratio	0.92	0.58		0.70	0.37		0.24	0.40		0.53	0.87	
Uniform Delay, d1	32.1	29.8		30.6	28.6		3.9	4.5		5.2	8.6	
Progression Factor	1.00	1.00		1.00	1.00		0.71	0.70		0.67	0.67	
Incremental Delay, d2	52.6	2.5		13.8	0.7		2.3	0.4		3.7	6.0	
Delay (s)	84.7	32.3		44.4	29.3		5.1	3.6		7.2	11.7	
Level of Service	F	С		D	С		А	А		А	В	
Approach Delay (s)		51.9			34.0			3.6			11.0	
Approach LOS		D			С			А			В	
Intersection Summary												
HCM Average Control E			16.0	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.88									
Actuated Cycle Length ((s)		80.0	S	Sum of I	ost time	e (S)		8.0			
Intersection Capacity Ut	ilization		86.5%	10	CU Lev	el of Se	rvice		E			
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Kimley-Horn and Associates, Inc.

Barrio Logan CPU 16: Main St & Cesa	ar E. Cł	navez	Pkwy			Hor	izon Y	ear Alt	2 without Improvements Timing Plan: PM Peak
	۶	-	•	+	1	1	1	ţ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	ň	T.	16	To	14	41.	H	10	
Volume (vph)	120	290	70	250	85	640	250	540	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	36.0	36.0	36.0	36.0	44.0	44.0	44.0	44.0	
Total Split (%)						55.0%			
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None		C-Min			
Act Effct Green (s)	29.8	29.8	29.8	29.8	42.2	42.2	42.2	42.2	
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.53	0.53	0.53	0.53	
v/c Ratio	0.95	0.50	0.26	0.83	1.07	0.56	1.33	1.08	
Control Delay	93.0	21.2	18.9	30.9	145.4	13.9	188.1	65.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.8	0.0	26.8	
Total Delay	93.0	21.2	18.9	30.9	145.4	15.8	188.1	91.9	
LOS	F	С	В	С	F	В	F	F	
Approach Delay		41.0		29.5		27.9		114.4	
Approach LOS		D		С		С		F	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	n: 80								
Offset: 1 (1%), Refere		hase 2	NBTL a	ind 6:SE	BTL. Sta	art of G	reen		
Natural Cycle: 70					,				
Control Type: Actuated	d-Coordii	nated							
Maximum v/c Ratio: 1									
Intersection Signal De				1	ntersec	tion LO	S: E		
Intersection Capacity I		n 101.49	%			el of Se			
Analysis Period (min)									
,			_						

Splits and Phases: 16: Main St & Cesar E. Chavez Pl	кwy
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44 s	36 s
₽ ø6	₹ ø8
44 s	36 s

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16: Main St & Cesa												,
	•	-	\mathbf{r}	1	-		1	Ť	1	-	Ŧ	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	×	ħ		ĸ	1×		¥.	410		ž	1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.92		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1761	1836		1750	1691		1556	2974		1544	1529	
Flt Permitted	0.16	1.00		0.41	1.00		0.09	1.00		0.25	1.00	
Satd. Flow (perm)	305	1836		756	1691		155	2974		404	1529	
Volume (vph)	120	290	25	70	250	270	85	640	180	250	540	28
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	130	315	27	76	272	293	92	696	196	272	587	30
RTOR Reduction (vph)	0	4	0	0	51	0	0	31	0	0	22	
Lane Group Flow (vph)	130	338	0	76	514	0	92	861	0	272	869	
Confl. Peds. (#/hr)	19		24	24		19	16		20	20		1
Confl. Bikes (#/hr)			1			2			20	20		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8	Ŭ		2	_		6	Ű	
Actuated Green, G (s)	29.8	29.8		29.8	29.8		42.2	42.2		42.2	42.2	
Effective Green, g (s)	29.8	29.8		29.8	29.8		42.2	42.2		42.2	42.2	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.53	0.53		0.53	0.53	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	114	684		282	630		82	1569		213	807	
v/s Ratio Prot	114	0.18		202	0.30		02	0.29		210	0.57	
v/s Ratio Perm	c0.43	0.10		0.10	0.50		0.59	0.25		c0.67	0.57	
v/c Ratio	1.14	0.49		0.10	0.82		1.12	0.55		1.28	1.08	
Uniform Delay, d1	25.1	19.3		17.5	22.6		18.9	12.6		18.9	18.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.79	0.77	
Incremental Delay, d2	127.0	0.6		0.5	8.0		136.2	1.00		142.8	46.8	
Delay (s)	152.1	19.9		18.0	30.7		155.1	14.0		142.0	61.4	
Level of Service	152.1 F	19.9 B		18.0 B	30.7 C		155.1 F	14.0 B		157.7 F	61.4 E	
Approach Delay (s)	F	56.3		Б	29.2		F	27.2		F	E 83.9	
		56.5 E			29.2 C			27.2 C			63.9 F	
Approach LOS		C			U			C			г	
Intersection Summary												
			FO 0		ICM I o	vel of Se	anvice		D			
HCM Average Control E			52.0	Г	ICIVI LE	ver ur Se			U			
HCM Volume to Capaci	ty ratio		1.22									
	ty ratio (s)			5	Sum of I	ost time	(s)		8.0 G			

Analysis Period (min) c Critical Lane Group

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Barrio Logan CPU 17: Harbor Dr & Ces	sar E.	Chave	z Pkw	/		Horizon Year Alt 2 without Improvements Timing Plan: PM Peak						
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	仲弘		jk.	14		Υç	Þ			4	٣
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1641	3265		1421	3232		1363	1314			1596	1368
Flt Permitted	0.95	1.00		0.95	1.00		0.71	1.00			0.83	1.00
Satd. Flow (perm)	1641	3265		1421	3232		1021	1314			1360	1368
Volume (vph)	590	1500	40	30	467	43	50	63	35	33	30	314
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	641	1630	43	33	508	47	54	68	38	36	33	341
RTOR Reduction (vph)	0	1	0	0	5	0	0	15	0	0	0	270
Lane Group Flow (vph)	641	1672	0	33	550	0	54	91	0	0	69	71
Confl. Peds. (#/hr)			11			6	4		1	1		4
Confl. Bikes (#/hr)			9			14			3			
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	3	1426		13	1826			12			1516	
Permitted Phases							12			1 5 16		1 5 16
Actuated Green, G (s)	27.3	53.8		3.2	29.7		14.0	14.0			22.4	22.4
Effective Green, g (s)	27.3	53.8		3.2	29.7		14.0	14.0			22.4	22.4
Actuated g/C Ratio	0.25	0.50		0.03	0.28		0.13	0.13			0.21	0.21
Clearance Time (s)	4.0			4.0			4.0	4.0				
Vehicle Extension (s)	3.0			3.0			3.0	3.0				
Lane Grp Cap (vph)	417	1636		42	894		133	171			284	285
v/s Ratio Prot	c0.39	c0.51		0.02	0.17			c0.07				
v/s Ratio Perm							0.05				0.05	c0.05
v/c Ratio	1.54	1.02		0.79	0.62		0.41	0.53			0.24	0.25
Uniform Delay, d1	40.0	26.8		51.8	33.9		42.9	43.6			35.4	35.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.22	3.70
Incremental Delay, d2	253.5	28.0		62.3	1.3		2.0	3.2			0.4	0.5
Delay (s)	293.6	54.8		114.0	35.1		44.9	46.8			43.5	131.8
Level of Service	F	D		F	D		D	D			D	F
Approach Delay (s)		120.9			39.6			46.2			117.0	
Approach LOS		F			D			D			F	
Intersection Summary												
HCM Average Control E	Delav		103.2	H	ICM Le	vel of S	ervice		F			
HCM Volume to Capaci			1.01									
Actuated Cycle Length			107.4	S	Sum of I	ost time	(s)		24.0			
Intersection Capacity Ut		۱	69.0%			el of Sei	· · /		С			
Analysis Period (min)			15									
a Critical Long Croup												

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18: Logan Ave & I-5		n-ram	C						Т	iming F	Plan: PM	1 Peak
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	Ţ.		76	To				P ^r			
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	891	523	8	0	156	69	0	0	16	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	968	568	9	0	170	75	0	0	17	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage Right turn flare (veh)												
Median type								None			None	
Median storage veh)								none			NUTIE	
Upstream signal (ft)		667										
pX, platoon unblocked		007										
vC, conflicting volume	245			577			2679	2754	573	2730	2721	207
vC1, stage 1 conf vol	210			011			2010	2/01	0/0	2100	2121	207
vC2, stage 2 conf vol												
vCu, unblocked vol	245			577			2679	2754	573	2730	2721	207
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	27			100			100	100	97	100	100	100
cM capacity (veh/h)	1322			996			6	5	519	5	6	833
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1							
Volume Total	968	577	0	245	17							
Volume Left	968	0	0	0	0							
Volume Right	0	9	0	75	17							
cSH	1322	1700	1700	1700	519							
Volume to Capacity	0.73	0.34	0.00	0.14	0.03							
Queue Length 95th (ft)	177	0	0	0	3							
Control Delay (s)	14.8	0.0	0.0	0.0	12.2							
Lane LOS	В				В							
Approach Delay (s)	9.3		0.0		12.2							
Approach LOS					В							
Intersection Summary												
Average Delay			8.0									
Intersection Capacity Ut	ilization		68.4%	10	CU Lev	el of Se	rvice		С			
Analysis Period (min)			15									

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Synchro 6 Report 3/4/2011

Barrio Logan CPU	
19 National Ave & SR-75 Off-ramp	

						_		
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		÷.	4		2	۴		
Sign Control		Free	Free		Stop			
Grade		0%	0%		0%			
Volume (veh/h)	0	302	253	0	129	239		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	0	328	275	0	140	260		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type				Т	WLTL			
Median storage veh)					1			
Upstream signal (ft)		1100	875					
pX, platoon unblocked								
vC, conflicting volume	275				603	275		
vC1, stage 1 conf vol					275			
vC2, stage 2 conf vol					328			
vCu, unblocked vol	275				603	275		
tC, single (s)	4.1				6.4	6.2		
tC, 2 stage (s)					5.4			
tF (s)	2.2				3.5	3.3		
p0 queue free %	100				75	66		
cM capacity (veh/h)	1288				553	764		
Direction, Lane #		WB 1	SB 1	00.0				
	EB 1			SB 2				
Volume Total	328	275	140	260				
Volume Left	0	0	140	0				
Volume Right	0	0	0	260				
cSH	1700	1700	553	764				
Volume to Capacity	0.19	0.16	0.25	0.34				
Queue Length 95th (ft)	0	0	25	38				
Control Delay (s)	0.0	0.0	13.7	12.1				
Lane LOS			В	В				
Approach Delay (s)	0.0	0.0	12.7					
Approach LOS			В					
Intersection Summary								
Average Delay			5.1					
Intersection Capacity Ut	ilization		34.8%	IC	CU Leve	el of Servi	се	
Analysis Period (min)			15					
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Barrio Logan CPU 20: National Ave & B	Evans	St				Horizon Year Alt 2 without Improvements Timing Plan: PM Peak						
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Т.		уç	1.			de.			st.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	389	34	34	191	24	12	18	62	45	23	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	423	37	37	208	26	13	20	67	49	25	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1314			661							
pX, platoon unblocked												
vC, conflicting volume	234			460			888	825	441	871	830	221
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	234			460			888	825	441	871	830	221
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			94	93	89	78	91	91
cM capacity (veh/h)	1334			1101			214	289	616	219	287	819
,						0.5.4						
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	38	460	37	234	100	150						
Volume Left	38	0	37	0	13	49						
Volume Right	0	37	0	26	67	76						
cSH	1334	1700	1101	1700	420	372						
Volume to Capacity	0.03	0.27	0.03	0.14	0.24	0.40						
Queue Length 95th (ft)	2	0	3	0	23	48						
Control Delay (s)	7.8	0.0	8.4	0.0	16.2	21.1						
Lane LOS	A		A		С	С						
Approach Delay (s)	0.6		1.1		16.2	21.1						
Approach LOS					С	С						
Intersection Summary												
Average Delay			5.3									_
Intersection Capacity Ut	ilization		50.4%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Synchro 6 Report 3/4/2011

Barrio Logan CPU 21: Newton Ave & E	•											
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			1			610			44	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	24	124	41	27	70	27	7	47	28	30	28	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	135	45	29	76	29	8	51	30	33	30	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
oX, platoon unblocked												
C, conflicting volume	105			179			397	373	157	415	381	91
vC1, stage 1 conf vol												
C2, stage 2 conf vol												
Cu, unblocked vol	105			179			397	373	157	415	381	91
C, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
C, 2 stage (s)												
:F (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
00 queue free %	98			98			99	90	97	93	94	98
cM capacity (veh/h)	1486			1396			511	536	888	477	531	967
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	205	135	89	86								
Volume Left	26	29	8	33								
Volume Right	45	29	30	23								
cSH	1486	1396	617	575								
Volume to Capacity	0.02	0.02	0.14	0.15								
Queue Length 95th (ft)	1	2	13	13								
Control Delay (s)	1.1	1.8	11.8	12.4								
Lane LOS	Α	А	В	В								
Approach Delay (s)	1.1	1.8	11.8	12.4								
Approach LOS			В	В								
ntersection Summary												
Average Delay			5.0									
ntersection Capacity Uti	lizatior	n .	29.9%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		\$	to		**		
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Volume (veh/h)	6	337	284	68	85	9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	7	366	309	74	92	10	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage veh)							
Upstream signal (ft)		1318					
pX, platoon unblocked		1010					
C, conflicting volume	383				725	346	
vC1, stage 1 conf vol	000				120	010	
vC2, stage 2 conf vol							
vCu, unblocked vol	383				725	346	
tC, single (s)	4.1				6.4	6.2	
tC, 2 stage (s)	4.1				0.4	0.2	
tF (s)	2.2				3.5	3.3	
p0 queue free %	99				76	99	
cM capacity (veh/h)	1176				390	697	
1 , , , ,					550	097	
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	373	383	102				
Volume Left	7	0	92				
Volume Right	0	74	10				
cSH	1176	1700	407				
Volume to Capacity	0.01	0.23	0.25				
Queue Length 95th (ft)	0	0	25				
Control Delay (s)	0.2	0.0	16.8				
Lane LOS	A		C				
Approach Delay (s)	0.2	0.0	16.8				
Approach LOS			С				
ntersection Summary							
Average Delay			2.1				
ntersection Capacity Ut	ilizatior	1 I	34.5%	IC	CU Leve	el of Service	А
Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ĥ		36	Tr			4.0			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	101	251	200	167	81	54	230	443	124	66	275	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	110	273	217	182	88	59	250	482	135	72	299	14
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	110	490	182	147	866	385						
Volume Left (vph)	110	0	182	0	250	72						
Volume Right (vph)	0	217	0	59	135	14						
Hadj (s)	0.53	-0.28	0.53	-0.25	0.00	0.05						
Departure Headway (s)	9.4	8.6	10.0	9.2	8.5	8.7						
Degree Utilization, x	0.29	1.17	0.51	0.38	2.05	0.93						
Capacity (veh/h)	379	424	345	380	430	407						
Control Delay (s)	14.9	125.3	21.6	16.5	498.3	58.1						
Approach Delay (s)	105.1		19.3		498.3	58.1						
Approach LOS	F		С		F	F						
Intersection Summary												
Delay			240.2									
HCM Level of Service			F									
Intersection Capacity Ut	ilization	ı 1	10.5%	ŀ	CU Leve	el of Ser	vice		н			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	14		1	1.			et.		002	1	0.0.
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98			1.00			0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.91			0.98			0.96	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1760	1829		1753	1663			1821			1728	
Flt Permitted	0.64	1.00		0.67	1.00			0.98			0.79	
Satd. Flow (perm)	1182	1829		1238	1663			1788			1386	
Volume (vph)	166	111	12	21	70	105	13	208	30	132	98	109
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	121	13	23	76	114	14	226	33	143	107	118
RTOR Reduction (vph)	0	7	0	0	83	0	0	7	0	0	22	C
Lane Group Flow (vph)	180	127	0	23	107	0	0	266	0	0	346	C
Confl. Peds. (#/hr)	7		11	11		7	25		21	21		25
Confl. Bikes (#/hr)			3			3			6			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.6	11.6		11.6	11.6			22.4			22.4	
Effective Green, g (s)	11.6	11.6		11.6	11.6			22.4			22.4	
Actuated g/C Ratio	0.28	0.28		0.28	0.28			0.53			0.53	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	326	505		342	459			954			739	
v/s Ratio Prot		0.07			0.06							
v/s Ratio Perm	c0.15			0.02				0.15			c0.25	
v/c Ratio	0.55	0.25		0.07	0.23			0.28			0.47	
Uniform Delay, d1	13.0	11.8		11.2	11.8			5.4			6.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.0	0.3		0.1	0.3			0.2			0.5	
Delay (s)	15.0	12.1		11.3	12.0			5.5			6.6	
Level of Service	В	В		В	В			А			А	
Approach Delay (s)		13.8			11.9			5.5			6.6	
Approach LOS		В			В			А			А	
Intersection Summary												
HCM Average Control E	Delay		9.2	F	ICM Lev	vel of S	ervice		А			
HCM Volume to Capaci	ty ratio		0.50									
Actuated Cycle Length	(s)		42.0	S	um of I	ost time	(s)		8.0			
Intersection Capacity Ut			70.7%	10	CU Leve	el of Se	vice		С			
Analysis Period (min)			15									
c Critical Lane Group												

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25: Newton Ave & S	ampso	on St							Т	iming F	Plan: PM	l Peak
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		¢.			1			4.0			4	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	117	24	0	73	33	13	103	20	21	76	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	127	26	0	79	36	14	112	22	23	83	23
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	191	115	148	128								
Volume Left (vph)	38	0	14	23								
Volume Right (vph)	26	36	22	23								
Hadj (s)	-0.01	-0.15	-0.04	-0.04								
Departure Headway (s)	4.7	4.7	4.8	4.8								
Degree Utilization, x	0.25	0.15	0.20	0.17								
Capacity (veh/h)	712	710	702	692								
Control Delay (s)	9.3	8.5	9.0	8.8								
Approach Delay (s)	9.3	8.5	9.0	8.8								
Approach LOS	A	А	A	A								
Intersection Summary												
Delay			8.9									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	າ	33.8%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

Barrio Logan CPU 26: Main St & Samp	son St	t				Hori	zon Ye	ear Alt	2 with T		prover Plan: PM	
i	۶	-	\mathbf{r}	4	+	•	1	Ť	1	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			1			10			4.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	134	174	32	27	113	8	63	46	49	8	27	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	146	189	35	29	123	9	68	50	53	9	29	114
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	370	161	172	152								
Volume Left (vph)	146	29	68	9								
Volume Right (vph)	35	9	53	114								
Hadj (s)	0.06	0.04	-0.07	-0.40								
Departure Headway (s)	5.1	5.4	5.5	5.2								
Degree Utilization, x	0.52	0.24	0.26	0.22								
Capacity (veh/h)	671	610	585	611								
Control Delay (s)	13.6	10.1	10.4	9.7								
Approach Delay (s)	13.6	10.1	10.4	9.7								
Approach LOS	В	В	В	А								
Intersection Summary												
Delay			11.6									
HCM Level of Service			В									
Intersection Capacity Ut	ilization	1	63.8%	10	CU Lev	el of Ser	vice		В			
Analysis Period (min)			15									

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27: Harbor Dr & Sar	noson	St				11011	2011 1				Plan: PN	
	٦	-+	\mathbf{r}	4	+	×	•	t	1	1	ţ	∢
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	仲弘		γ.	1 1>			e la			1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.97			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3469		1770	3444			1780			1776	
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.78	
Satd. Flow (perm)	1770	3469		1770	3444			1698			1411	
Volume (vph)	56	1500	5	19	493	62	23	111	41	56	66	26
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	1630	5	21	536	67	25	121	45	61	72	28
RTOR Reduction (vph)	0	0	0	0	7	0	0	8	0	0	5	0
Lane Group Flow (vph)	61	1635	0	21	596	0	0	183	0	0	156	0
Confl. Peds. (#/hr)			15			29	7		4	4		7
Confl. Bikes (#/hr)			12						7			7
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	3	1426		13	1826			12			16 1 5	
Permitted Phases							12			1615		
Actuated Green, G (s)	5.1	49.5		1.2	45.6			16.2			29.0	
Effective Green, g (s)	5.1	49.5		1.2	45.6			16.2			29.0	
Actuated g/C Ratio	0.05	0.48		0.01	0.44			0.16			0.28	
Clearance Time (s)	4.0			4.0				4.0				
Vehicle Extension (s)	3.0			3.0				3.0				
Lane Grp Cap (vph)	87	1656		20	1514			265			395	
v/s Ratio Prot	c0.03	c0.47		0.01	0.17							
v/s Ratio Perm								c0.11			c0.11	
v/c Ratio	0.70	0.99		1.05	0.39			0.69			0.39	
Uniform Delay, d1	48.5	26.8		51.2	19.7			41.4			30.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.05	
Incremental Delay, d2	22.5	19.0		217.8	0.2			7.6			0.7	
Delay (s)	71.0	45.7		269.0	19.9			49.0			32.4	
Level of Service	E	D		F	В			D			С	
Approach Delay (s)		46.7			28.2			49.0			32.4	
Approach LOS		D			С			D			С	
Intersection Summary												
HCM Average Control E	Delay		41.7	F	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci	ty ratio		0.83									
Actuated Cycle Length ((s)		103.7	5	Sum of I	ost time	e (S)		24.0			
Intersection Capacity Ut	ilization	۱	73.3%	ŀ	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									

Horizon Year Alt 2 without Improvements

Synchro 6 Report 3/4/2011

Analysis Period (min) c Critical Lane Group

Barrio Logan CPU

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 28: National Ave & S	Sicard	St				Hori	zon Ye	ear Alt	2 with T		prover Plan: PM	
	۶	-	\mathbf{r}	4	+	×	1	1	1	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Ţ.			4			et.			4.	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	170	39	8	125	1	34	45	17	4	17	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	185	42	9	136	1	37	49	18	4	18	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		641										
pX, platoon unblocked												
vC, conflicting volume	137			227			504	449	206	471	470	136
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	137			227			504	449	206	471	470	136
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			91	90	98	99	96	95
cM capacity (veh/h)	1447			1341			429	486	835	442	473	912
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	45	227	146	104	68							
Volume Left	45	0	9	37	4							
Volume Right	0	42	1	18	46							
cSH	1447	1700	1341	499	692							
Volume to Capacity	0.03	0.13	0.01	0.21	0.10							
Queue Length 95th (ft)	2	0	0	20	8							
Control Delay (s)	7.6	0.0	0.5	14.1	10.8							
Lane LOS	A		А	В	В							
Approach Delay (s)	1.2		0.5	14.1	10.8							
Approach LOS				В	В							
Intersection Summary												
Average Delay			4.4									
Intersection Capacity Ut	ilization	1	36.6%	10	CU Lev	el of Sei	vice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ĥ		×	Tr			4.0			44	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	155	74	35	123	54	54	68	34	91	80	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	168	80	38	134	59	59	74	37	99	87	22
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	38	249	38	192	170	208						
Volume Left (vph)	38	0	38	0	59	99						
Volume Right (vph)	0	80	0	59	37	22						
Hadj (s)	0.53	-0.19	0.53	-0.18	-0.03	0.07						
Departure Headway (s)	6.5	5.8	6.6	5.9	5.7	5.7						
Degree Utilization, x	0.07	0.40	0.07	0.31	0.27	0.33						
Capacity (veh/h)	518	589	508	573	572	583						
Control Delay (s)	8.8	11.3	8.9	10.3	10.7	11.4						
Approach Delay (s)	11.0		10.1		10.7	11.4						
Approach LOS	В		В		В	В						
Intersection Summary												
Delay			10.8									
HCM Level of Service			В									
Intersection Capacity Ut	ilization		42.2%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

		\mathbf{r}	4	+	•	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	Þ	LDIK	TIDE	41	NDL N	7	
Sign Control	Free			Free	Stop	F	
Grade	0%			0%	0%		
Volume (veh/h)	373	14	31	239	37	296	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	405	15	34	260	40	322	
Pedestrians			0.	200	36	022	
Lane Width (ft)					12.0		
Walking Speed (ft/s)					4.0		
Percent Blockage					3		
Right turn flare (veh)							
Median type					None		
Median storage veh)							
Upstream signal (ft)				670			
pX, platoon unblocked							
vC, conflicting volume			457		646	449	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			457		646	449	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			97		89	40	
cM capacity (veh/h)			1067		380	541	
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2		
Volume Total	421	120	173	40	322		
Volume Left	421	34	0	40	0		
Volume Right	15	0	0	40	322		
cSH	1700	1067	1700	380	541		
Volume to Capacity	0.25	0.03	0.10	0.11	0.60		
Queue Length 95th (ft)	0.23	2	0.10	9	97		
Control Delay (s)	0.0	2.6	0.0	15.6	21.0		
Lane LOS	0.0	2.0 A	0.0	13.0 C	21.0 C		
Approach Delay (s)	0.0	1.1		20.4	J		
Approach LOS	0.0			20.4 C			
Intersection Summary							
Average Delay			7.1				
Intersection Capacity Ut	ilization	ר ר	45.6%	10		el of Service	А
Analysis Period (min)	mzanoi		15				~

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Barrio Logan CPU 31: Main St & 26th S	St					Hori	zon Ye	ear Alt	2 with T		p rover lan: PN	
	≯	+	*	4	ł	×	•	1	1	*	Ŧ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$)r	4	7		4	P ^r		4.	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	14	212	17	50	59	28	9	58	204	26	11	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	230	18	54	64	30	10	63	222	28	12	9
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1					
Volume Total (vph)	264	54	64	30	73	222	49					
Volume Left (vph)	15	54	0	0	10	0	28					
Volume Right (vph)	18	0	0	30	0	222	9					
Hadj (s)	0.00	1.09	0.03	-0.67	0.06	-0.41	0.04					
Departure Headway (s)	4.5	6.1	5.1	3.2	4.9	3.2	5.0					
Degree Utilization, x	0.33	0.09	0.09	0.03	0.10	0.20	0.07					
Capacity (veh/h)	782	564	681	1121	673	1121	667					
Control Delay (s)	9.7	8.6	7.4	5.1	8.5	7.0	8.3					
Approach Delay (s)	9.7	7.3			7.4		8.3					
Approach LOS	A	A			A		A					
Intersection Summary												
Delay			8.2									
HCM Level of Service			А									
Intersection Capacity Ut	ilizatior	า	40.2%	10	CU Lev	el of Sei	rvice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	শ	<u>ቀ</u> ኩ			1						1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0			4.0						4.0	
Lane Util, Factor	1.00	0.95			0.95						1.00	
Frpb, ped/bikes	1.00	1.00			1.00						0.98	
Flpb, ped/bikes	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			0.99						0.90	
Flt Protected	0.95	1.00			1.00						0.99	
Satd. Flow (prot)	1543	3539			3505						1506	
Flt Permitted	0.95	1.00			1.00						0.99	
Satd. Flow (perm)	1543	3539			3505						1506	
Volume (vph)	208	1400	0	0	558	39	0	0	0	16	10	8
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	226	1522	0	0.02	607	42	0.02	0.02	0.02	17	11	8
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	71	0
Lane Group Flow (vph)	226	1522	0	0	645	Ő	0	Ő	0	0	44	
Confl. Peds. (#/hr)	220	1022	8	8	010	Ŭ	Ŭ	Ŭ	2	2		
Confl. Bikes (#/hr)			Ŭ	Ŭ					4	-		
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot	270	270	270	270	270	270	270	270	Perm	170	,
Protected Phases		1826			1426						11 1 5	
Permitted Phases	15	1020			1420					11 1 5	1115	
Actuated Green, G (s)	9.4	49.6			32.2						15.3	
Effective Green, g (s)	9.4	49.6			32.2						15.3	
Actuated g/C Ratio	0.12	0.61			0.40						0.19	
Clearance Time (s)	4.0	0.01			0110						0110	
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	179	2170			1395						285	
v/s Ratio Prot	c0.15	c0.43			0.18						200	
v/s Ratio Perm	0.15	00.45			0.10						0.03	
v/c Ratio	1.26	0.70			0.46						0.05	
Uniform Delay, d1	35.8	10.6			18.0						27.4	
Progression Factor	1.00	1.00			1.00						1.09	
Incremental Delay, d2	155.0	1.00			0.2						0.3	
Delay (s)	190.8	11.7			18.2						30.1	
Level of Service	130.0	B			10.2 B						50.1 C	
Approach Delay (s)		34.8			18.2			0.0			30.1	
Approach LOS		04.0 C			B			A			C	
Intersection Summary												
HCM Average Control E	Delav		30.3	H	ICM Lev	vel of S	ervice		С			
HCM Volume to Capaci			0.65		200				5			
Actuated Cycle Length (80.9		Sum of I	ost time	(s)		20.0			
Intersection Capacity Ut		1	58.4%			el of Sei	· · /		В			
Analysis Period (min)			15						2			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	44	1	1	1.			4	P ⁴	002	44.	02.0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	1000	1000	4.0	4.0	1000	4.0	1000
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	0.94			1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.98	
Satd. Flow (prot)	1770	3539	1583	1597	1759			1762	1509		1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.90	1.00		0.78	
Satd. Flow (perm)	1770	3539	1583	1597	1759			1592	1509		1353	
Volume (vph)	94	588	85	448	406	241	18	98	163	195	210	102
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	639	92	487	441	262	20	107	177	212	228	111
RTOR Reduction (vph)	0	0	73	0	14	0	0	0	104	0	6	0
Lane Group Flow (vph)	102	639	19	487	689	0	0	127	73	0	545	0
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases		-	4				2		2	6		
Actuated Green, G (s)	9.0	29.8	29.8	46.0	66.8		_	61.0	61.0		61.0	
Effective Green, q (s)	9.0	29.8	29.8	46.0	66.8			61.0	61.0		61.0	
Actuated q/C Ratio	0.06	0.20	0.20	0.31	0.45			0.41	0.41		0.41	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	107	709	317	494	790			653	619		555	
v/s Ratio Prot	0.06	0.18		c0.30	c0.39							
v/s Ratio Perm			0.01					0.08	0.05		c0.40	
v/c Ratio	0.95	0.90	0.06	0.99	0.87			0.19	0.12		0.98	
Uniform Delay, d1	69.7	58.1	48.2	51.1	37.1			28.1	27.2		43.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	71.6	14.6	0.1	36.5	10.4			0.1	0.1		33.5	
Delay (s)	141.3	72.7	48.2	87.6	47.5			28.3	27.3		76.8	
Level of Service	F	E	D	F	D			С	С		E	
Approach Delay (s)		78.4			63.9			27.7			76.8	
Approach LOS		E			E			С			E	
Intersection Summary												
HCM Average Control E	Delay		66.8	H	ICM Le	vel of S	ervice		E			
HCM Volume to Capaci			0.95									
Actuated Cycle Length			148.8	S	Sum of I	ost time	e (S)		8.0			
Intersection Capacity Ut			86.0%			el of Se	· · /		E			
Analysis Period (min)			15									

Barrio Logan CPU 34: Boston Ave & 28	8th St					Hori	zon Y	ear Alt		iout Im Fiming F		
	•	-	\mathbf{r}	4	-	×	٩	t	1	\	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ሻ	ţ,		λ.	Tr		٩ç	44	M	×,	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.96		1.00	0.92		1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1687	1708		1687	1634		1770	3539	1583	1770	3321	
Flt Permitted	0.62	1.00		0.12	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1099	1708		215	1634		1770	3539	1583	1770	3321	
Volume (vph)	350	500	170	70	70	80	50	1100	200	350	500	35
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	380	543	185	76	76	87	54	1196	217	380	543	38
RTOR Reduction (vph)	0	14	0	0	46	0	0	0	88	0	136	
Lane Group Flow (vph)	380	714	0	76	117	0	54	1196	129	380	787	
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)	33.0	33.0		33.0	33.0		5.6	29.8	29.8	16.0	40.2	
Effective Green, g (s)	33.0	33.0		33.0	33.0		5.6	29.8	29.8	16.0	40.2	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.06	0.33	0.33	0.18	0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	399	621		78	594		109	1161	520	312	1470	
v/s Ratio Prot		c0.42			0.07		0.03	c0.34		c0.21	0.24	
v/s Ratio Perm	0.35			0.35					0.08			
v/c Ratio	0.95	1.15		0.97	0.20		0.50	1.03	0.25	1.22	0.54	
Uniform Delay, d1	28.1	28.9		28.5	19.8		41.2	30.5	22.3	37.4	18.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	32.8	85.0		92.5	0.2		3.5	34.4	1.1	123.6	1.4	
Delay (s)	60.9	113.9		121.0	20.0		44.7	64.9	23.4	161.0	19.9	
Level of Service	E	F		F	В		D	E	С	F	В	
Approach Delay (s)		95.8			52.1			58.1			61.1	
Approach LOS		F			D			E			E	
Intersection Summary												
HCM Average Control [68.8	H	ICM Le	vel of S	ervice		E			
HCM Volume to Capaci	ty ratio		1.12									
Actuated Cycle Length	(s)		90.8	S	Sum of I	ost time	(S)		12.0			
Intersection Capacity U	tilizatior	ı 1	03.7%	10	CU Lev	el of Sei	vice		G			
Analysis Period (min)			15									
c Critical Lane Group												

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Barrio Logan CPU 35: Main St & 28th 3	St					Hori	zon Ye	ear Alt			prover Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ቀኩ		jić.	1		Υç	416		7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.97		1.00	0.87	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.93		1.00	0.96		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1738	3501		1764	3220		1736	3233		1736	2701	
Flt Permitted	0.33	1.00		0.30	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	599	3501		554	3220		1736	3233		1736	2701	
Volume (vph)	270	600	40	150	300	290	60	500	180	290	510	550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adi, Flow (vph)	293	652	43	163	326	315	65	543	196	315	554	598
RTOR Reduction (vph)	0	5	0	0	178	0	0	41	0	0	209	0
Lane Group Flow (vph)	293	690	0	163	463	0	65	698	0	315	943	0
Confl. Peds. (#/hr)	27		12	12		27			88			200
Confl. Bikes (#/hr)			8			3						6
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	4%	4%	4%	4%	4%	11%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	39.0	39.0		39.0	39.0		6.7	22.8		16.0	32.1	
Effective Green, g (s)	39.0	39.0		39.0	39.0		6.7	22.8		16.0	32.1	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.07	0.25		0.18	0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	260	1520		241	1398		130	821		309	966	
v/s Ratio Prot	200	0.20			0.14		0.04	0.22		c0.18	c0.35	
v/s Ratio Perm	c0.49			0.29								
v/c Ratio	1.13	0.45		0.68	0.33		0.50	0.85		1.02	0.98	
Uniform Delay, d1	25.4	17.9		20.3	16.8		39.9	31.9		36.9	28.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2				7.3	0.1		3.0	8.4		56.2	23.0	
Delay (s)	94.3	0.2										
Level of Service	94.3 119.7	0.2					42.9	40.3		93.1	51.4	
	94.3 119.7 F	0.2 18.1 B		27.7	16.9 B		42.9 D	40.3 D		93.1 F	51.4 D	
	119.7	18.1 B			16.9 B			D		93.1 F	D	
Approach Delay (s)	119.7	18.1		27.7	16.9							
	119.7	18.1 B 48.2		27.7	16.9 B 19.1			D 40.5			D 60.4	
Approach Delay (s) Approach LOS Intersection Summary	119.7 F	18.1 B 48.2	45.3	27.7 C	16.9 B 19.1 B	vel of S	D	D 40.5	D		D 60.4	
Approach Delay (s) Approach LOS Intersection Summary HCM Average Control I	119.7 F	18.1 B 48.2	45.3 1.04	27.7 C	16.9 B 19.1 B	vel of Se	D	D 40.5	D		D 60.4	
Approach Delay (s) Approach LOS Intersection Summary HCM Average Control I HCM Volume to Capaci	119.7 F Delay ty ratio	18.1 B 48.2	1.04	27.7 C	16.9 B 19.1 B		D	D 40.5			D 60.4	
Approach Delay (s) Approach LOS Intersection Summary HCM Average Control I	119.7 F Delay ty ratio (s)	18.1 B 48.2 D		27.7 C	16.9 B 19.1 B ICM Le	vel of Se ost time	D ervice e (s)	D 40.5	D 8.0 E		D 60.4	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	T T	<u> </u>	EDR M	V DL	44		INDL		NDR			301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	1000	4.0	1300	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		0.95	0.95	1.0
Frpb, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.94		1.00		1.00	1.00	0.9
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.0
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00	1.00	0.8
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	0.95	1.0
Satd. Flow (prot)	1703	3406	1318	1719	3438	1438		1821		1649	1657	153
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	0.95	1.0
Satd. Flow (perm)	1703	3406	1318	1719	3438	1438		1821		1649	1657	153
Volume (vph)	300	1120	2	18	491	255	10	133	0	480	12	1
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	326	1217	2	20	534	277	11	145	0	522	13	14
RTOR Reduction (vph)	0	0	1	0	0	178	0	0	0	0	0	1
Lane Group Flow (vph)	326	1217	1	20	534	99	0	156	0	261	274	
Confl. Peds. (#/hr)			69			80						
Confl. Bikes (#/hr)			2						4			
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	(custom	Prot	C	custom	Split			Split		Pern
Protected Phases	11	1626		15	1226	13	14	14		1 13 5	13 1 5	
Permitted Phases			16			12						151
Actuated Green, G (s)	13.7	44.3	38.1	1.9	32.5	45.3		20.9		28.2	28.2	28.
Effective Green, g (s)	13.7	44.3	38.1	1.9	32.5	45.3		20.9		28.2	28.2	28.
Actuated g/C Ratio	0.11	0.35	0.30	0.01	0.26	0.36		0.16		0.22	0.22	0.2
Clearance Time (s)	4.0		4.0	4.0		4.0		4.0				
Vehicle Extension (s)	3.0		3.0	3.0		3.0		3.0				
Lane Grp Cap (vph)	183	1185	394	26	878	512		299		365	367	33
v/s Ratio Prot	c0.19	c0.36		0.01	0.16	0.03		c0.09		0.16	c0.17	
v/s Ratio Perm			0.00			0.04						0.0
v/c Ratio	1.78	1.03	0.00	0.77	0.61	0.19		0.52		0.72	0.75	0.0
Uniform Delay, d1	56.8	41.5	31.3	62.5	41.8	28.4		48.6		45.8	46.2	38.
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.93	0.93	1.2
Incremental Delay, d2	372.8	33.3	0.0	80.9	1.2	0.2		1.6		6.5	8.0	0.
Delay (s)	429.6	74.8	31.3	143.4	43.0	28.5		50.3		49.0	51.0	50.0
Level of Service	F	E	С	F	D	С		D		D	D	[
Approach Delay (s)		149.6			40.6			50.3			50.0	
Approach LOS		F			D			D			D	
Intersection Summary												
HCM Average Control E			97.4	H	ICM Le	vel of Se	ervice		F			
HCM Volume to Capaci	ty ratio		0.93									
rient retaine te eapaer												
Actuated Cycle Length			127.3			ost time			28.0			
		1	127.3 75.3% 15			ost time el of Ser			28.0 D			

c Critical Lane Group

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Lane Configurations Image: configuration of the second secon												,	
Lane Configurations 4 4 4 4 Sign Control Free Free Stop Stop Sign Control Free Free Stop O% Volume (veh/h) 658 151 29 20 86 132 10 88 45 0 0 Peak Hour Fator 0.92		۶	-	\mathbf{r}	1	-	•	1	Ť	1	•	Ŧ	-
Sign Control Free Free Stop Stop Grade 0%		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Grade 0% 0% 0% 0% 0% 0% Volume (veh/h) 658 151 29 20 86 132 10 88 45 0 0 Peak Hour Factor 0.92 <td>Lane Configurations</td> <td></td> <td>\$</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> <td>4.0</td> <td></td> <td></td> <td></td> <td></td>	Lane Configurations		\$			4			4.0				
Volume (veh/h) 658 151 29 20 86 132 10 88 45 0 0 Peak Hour Factor 0.92 0.74 0.74	Sign Control		Free			Free			Stop			Stop	
Peak Hour Factor 0.92 0 Pagestrians Easter Ferring Fe	Grade		0%			0%			0%			0%	
Hourly flow rate (vph) 715 164 32 22 93 143 11 96 49 0 0 Pedestrians Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median storage veh) Upstream signal (ft) 657 pX, platoon unblocked 0.74 0.74 0.74 0.74 0.74 0.74 0.74 vC2, conflicting volume 237 196 1819 1891 180 1916 1835 11 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage (s) tF (s) 2.3 2.3 3.5 4.1 3.3 3.5 4.0 3 p0 queue free % 45 98 30 0 94 0 100 11 cM capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 911 259 155 Volume Total 911 252 11 Volume Right 32 143 49 cSH 1301 1179 20 Volume to Capacity (s) 10.2 0.8 Err Lane LOS B A F Approach LOS F Intersection Summary Average Delay 1180.1	Volume (veh/h)	658	151	29	20	86	132	10	88	45	0	0	(
Pedestrians Image: Control Delay (s) Image: Control Delay (s) Percent Blockage Right turn flare (veh) None None Median type None None None Median type 0.74 0.74 0.74 0.74 0.74 Upstream signal (ft) 657 0 1819 180 1916 1835 11 VC2, conflicting volume 237 196 1819 1891 180 1916 1835 11 VC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 1 6.6 6.2 7.1 6.6 6.2 7.1 6.5 6 100 11 VC2, stage (s) Image: Stage 3 0 94 0 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100 11 100 11 11 11 11 11 11 11 11 11 11 11	Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Lane Width (ft) Walking Speed (ft/s) Percent Blockage Right turn flare (veh) Median type None None None Median type None None Median type None None Median type None None Median type None None Median type None None None None None None None Non	Hourly flow rate (vph)	715	164	32	22	93	143	11	96	49	0	0	(
Walking Speed (ft/s) None None Right turn flare (veh) Median storage veh) None None Median storage veh) Upstream signal (ft) 657 57 pX, platoon unblocked 0.74 0.74 0.74 0.74 0.74 vC2, conflicting volume 237 196 1819 1801 1916 1835 14 vC2, stage 1 conf vol vC2, stage 2 con	Pedestrians												
Percent Blockage Right turn flare (veh) Median type None None None Median storage veh) Upstream signal (ft) 657 pX, platoon unblocked 0.74 0.74 0.74 0.74 0.74 0.74 vC, conflicting volume 237 196 1819 1891 180 1916 1835 14 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, stage (s) 4.2 4.2 7.1 6.6 6.2 7.1 6.5 6 C, 2 stage (s) tF (s) 2.3 2.3 3.5 4.1 3.3 3.5 4.0 3 p0 queue free % 45 98 30 0 94 0 100 11 cf capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 911 259 155 Volume Left 715 22 11 Volume Right 32 143 49 cSH 1301 1179 20 Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (ft) 87 1 Err Control Delay (s) 10.2 0.8 Err Lane LOS B A F Approach LOS F Intersection Summary Average Delay 1180.1	Lane Width (ft)												
Right turn flare (veh) None None None Median type 0.74 0.74 0.74 0.74 0.74 Upstream signal (tt) 657 0.74 <	Walking Speed (ft/s)												
Median type None None Median storage veh) Upstream signal (ft) 657 VD, patroan unblocked 0.74 0													
Median storage veh) Upstream signal (tt) 657 px, platoon unblocked 0.74 0.74 0.74 0.74 0.74 0.74 vC, conflicting volume 237 196 1819 1801 180 1916 1835 14 vC1, stage 1 conf vol vC2, stage 2 conf vol v	Right turn flare (veh)												
Upstream signal (ft) 657 pX, platoon unblocked 0.74 0.74 0.74 0.74 0.74 0.74 0.74 vC, conflicting volume 237 196 1819 1891 180 1916 1835 14 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vCu, unblocked vol 237 0 2105 2202 0 2236 2126 11 tC, single (s) 4.2 4.2 7.1 6.6 6.2 7.1 6.5 6 U, 2 stage (s) tF (s) 2.3 2.3 3.5 4.1 3.3 3.5 4.0 3 p0 queue free % 45 98 30 0 94 0 100 11 cM capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 911 259 155 Volume Left 715 22 11 Volume Right 32 143 49 cSH 1301 1179 20 Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (ft) 87 1 Err Control Delay (s) 10.2 0.8 Err Lane LOS B A F Approach LOS F Intersection Summary Average Delay 1180.1	Median type								None			None	
pX, platoon unblocked 0.74 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>													
vC, conflicting volume 237 196 1819 180 1916 1835 10 vC1, stage 1 conf vol vC2, stage 2 conf vol vC2, stage 2 conf vol vC2, unblocked vol 237 0 2105 2202 0 2236 2126 11 tC, single (s) 4.2 4.2 7.1 6.6 6.2 7.1 6.5 6 tC, 2 stage (s) 1179 16 13 3.5 4.0 3 p0 queue free % 45 98 30 0 94 0 100 CM capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 911 259 155 Volume Left 715 22 11 Volume Right 32 143 49 cSH 1301 1179 20 Volume V 55 10 100 Volume Right 32 143 49 49 40 16 16 16 Queue Length 95th (ft) </td <td></td> <td></td> <td>657</td> <td></td>			657										
vC1, stage 1 conf vol vC2, stage 2 conf vol vCu, unblocked vol 237 0 2105 2202 0 2236 2126 10 VCu, unblocked vol 237 0 2105 2202 0 2236 2126 10 VCu, unblocked vol 237 0 2105 2202 0 2236 2126 10 UC, single (s) 4.2 4.2 7.1 6.6 6.2 7.1 6.5 6 UC, 2 stage (s) FF (s) 2.3 2.3 3.5 4.1 3.3 3.5 4.0 3 p0 queue free % 45 98 30 0 94 0 100 10 CM capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 911 259 155 Volume Left 715 22 11 Volume Right 32 143 49 CSH 1301 1179 20 Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (th) 87 1 Err Control Delay (s) 10.2 0.8 Err Lane LOS B A F Approach LOS F Intersection Summary Average Delay 1180.1								0.74					
VC2, stage 2 conf vol VCu, unblocked vol 237 0 2105 2202 0 2236 2126 11 IC, single (s) 4.2 4.2 7.1 6.6 6.2 7.1 6.5 6 VCU, unblocked vol 237 0 2105 2202 0 2236 2126 11 IC, single (s) 4.2 4.2 7.1 6.6 6.2 7.1 6.5 6 VCU, 2 stage (s) IF (s) 2.3 2.3 3.5 4.1 3.3 3.5 4.0 3 p0 queue free % 45 98 30 0 94 0 100 11 ICM capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 911 259 155 Volume Left 715 22 11 Volume Right 32 143 49 CSH 1301 1179 20 Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (ft) 87 1 Err Control Delay (s) 10.2 0.8 Err Lane LOS B A F Approach LOS F Intersection Summary Average Delay 1180.1	vC, conflicting volume	237			196			1819	1891	180	1916	1835	165
vCu, unblocked vol 237 0 2105 2202 0 2236 2126 10 LC, single (s) 4.2 4.2 7.1 6.6 6.2 7.1 6.5 6 LC, z stage (s) 10 2.3 2.3 3.5 4.1 3.3 3.5 4.0 3 Do queue free % 45 98 30 0 94 0 100 11 cd capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 1179 16 13 804 0 16 8 Olume Cotal 911 259 155 102 14 49 15 15 16 16 10 16 16 16													
tC, single (s) 4.2 4.2 7.1 6.6 6.2 7.1 6.5 6 tC, 2 stage (s) 2.3 2.3 3.5 4.1 3.3 3.5 4.0 3 p0 queue free % 45 98 30 0 94 0 100 11 CM capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 16 13 804 0 16 8 Volume Total 911 259 155													
tC, 2 stage (s) tF (s) 2.3 2.3 3.5 4.1 3.3 3.5 4.0 3 p0 queue free % 45 98 30 0 94 0 100 10 cM capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 911 259 155 Volume Left 715 22 11 Volume Right 32 143 49 cSH 1301 1179 20 Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (th) 87 1 Err Control Delay (s) 10.2 0.8 Err Lane LOS B A F Approach Delay (s) 10.2 0.8 Err Approach LOS F Intersection Summary Average Delay 1180.1								2105	2202		2236	2126	165
tF (s) 2.3 2.3 3.5 4.1 3.3 3.5 4.0 3 p0 queue free % 45 98 30 0 94 0 100 11 cM capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 1179 16 13 804 0 16 8 Volume Total 911 259 155 5		4.2			4.2			7.1	6.6	6.2	7.1	6.5	6.2
p0 queue free % 45 98 30 0 94 0 100 10 cM capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 16 13 804 0 16 8 Volume Total 911 259 155 16 15 16 16 8 Volume Right 32 143 49 22 11 16 1													
CM capacity (veh/h) 1301 1179 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 1 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 16 13 804 0 16 8 Direction, Lane # EB 1 WB 1 NB 1 179 16 13 804 0 16 8 Volume Total 911 259 155 16 17 16 13 179 20 Volume Right 32 143 49 20 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3.3</td>													3.3
Direction, Lane # EB 1 WB 1 NB 1 Volume Total 911 259 155 Volume Left 715 22 11 Volume Right 32 143 49 cSH 1301 1179 20 Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (ft) 87 1 Err Control Delay (s) 10.2 0.8 Err Approach Delay (s) 10.2 0.8 Err Approach LOS F F Intersection Summary T 180.1					98			30	0	94	0	100	100
Volume Total 911 259 155 Volume Left 715 22 11 Volume Right 32 143 49 cSH 1301 1179 20 Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (ft) 87 1 Err Control Delay (s) 10.2 0.8 Err Approach Delay (s) 10.2 0.8 Err Approach LOS F F Intersection Summary 1180.1	cM capacity (veh/h)	1301			1179			16	13	804	0	16	879
Volume Left 715 22 11 Volume Right 32 143 49 CSH 1301 1179 20 Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (ft) 87 1 Err Control Delay (s) 10.2 0.8 Err Approach Delay (s) 10.2 0.8 Err Approach LOS F F Average Delay 1180.1	Direction, Lane #	EB 1	WB 1	NB 1									
Volume Right 32 143 49 cSH 1301 1179 20 Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (ft) 87 1 Err Control Delay (s) 10.2 0.8 Err Lane LOS B A F Approach LOS F F Intersection Summary 1180.1	Volume Total	911	259	155									
CSH 1301 1179 20 Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (ft) 87 1 Err Control Delay (s) 10.2 0.8 Err Lane LOS B A F Approach Delay (s) 10.2 0.8 Err Intersection Summary F Intersection Summary Average Delay 1180.1 Intersection Summary	Volume Left	715	22	11									
Volume to Capacity 0.55 0.02 7.89 Queue Length 95th (ft) 87 1 Err Control Delay (s) 10.2 0.8 Err Lane LOS B A F Approach Delay (s) 10.2 0.8 Err Approach LOS F F Intersection Summary 1180.1	Volume Right	32	143	49									
Queue Length 95th (ft) 87 1 Err Control Delay (s) 10.2 0.8 Err Lane LOS B A F Approach Delay (s) 10.2 0.8 Err Approach LOS F F Intersection Summary 1 1	cSH	1301	1179	20									
Control Delay (s) 10.2 0.8 Err Lane LOS B A F Approach Delay (s) 10.2 0.8 Err Approach LOS F Intersection Summary Average Delay 1180.1	Volume to Capacity	0.55	0.02	7.89									
Lane LOS B A F Approach Delay (s) 10.2 0.8 Err Approach LOS F Intersection Summary Average Delay 1180.1	Queue Length 95th (ft)	87	1	Err									
Approach Delay (s) 10.2 0.8 Err Approach LOS F Intersection Summary Average Delay 1180.1	Control Delay (s)	10.2	0.8	Err									
Approach LOS F Intersection Summary Average Delay 1180.1	Lane LOS	В	А	F									
Intersection Summary Average Delay 1180.1	Approach Delay (s)	10.2	0.8	Err									
Average Delay 1180.1	Approach LOS			F									
	Intersection Summary												
Intersection Capacity Utilization 77.8% ICU Level of Service D													
Analysis Period (min) 15		ilizatior	1 I		10	CU Lev	el of Sei	vice		D			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	শ	仲弘		۶¢	1 1		٩ç	4	×	7	T.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3316		1703	3261		1770	1863	1549	1770	1682	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3316		1703	3261		1770	1863	1549	1770	1682	
Volume (vph)	63	733	139	207	407	132	193	112	307	148	61	68
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	797	151	225	442	143	210	122	334	161	66	74
RTOR Reduction (vph)	0	16	0	0	29	0	0	0	242	0	52	0
Lane Group Flow (vph)	68	932	0	225	556	0	210	122	92	161	88	0
Confl. Peds. (#/hr)			1			2			1			17
Confl. Bikes (#/hr)			4			1			7			5
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	4.9	26.1		12.1	33.3		12.3	14.2	14.2	10.9	12.8	
Effective Green, g (s)	4.9	26.1		12.1	33.3		12.3	14.2	14.2	10.9	12.8	
Actuated g/C Ratio	0.06	0.33		0.15	0.42		0.16	0.18	0.18	0.14	0.16	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	105	1091		260	1369		275	334	277	243	271	
v/s Ratio Prot	0.04	c0.28		c0.13	0.17		c0.12	c0.07		0.09	0.05	
v/s Ratio Perm									0.06			
v/c Ratio	0.65	0.85		0.87	0.41		0.76	0.37	0.33	0.66	0.32	
Uniform Delay, d1	36.4	24.8		32.8	16.1		32.1	28.6	28.4	32.5	29.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.9	6.7		24.6	0.2		11.9	0.7	0.7	6.6	0.7	
Delay (s)	49.3 D	31.5 C		57.4 E	16.3 B		44.0 D	29.3 C	29.1 C	39.1 D	30.1 C	
Level of Service	D			E			D		U	D	34.9	
Approach Delay (s)		32.7 C			27.7 C			33.8 C			34.9 C	
Approach LOS		C			U			C			U	
Intersection Summary												
HCM Average Control D			31.8	H	ICM Le	vel of S	ervice		С			
	V Volume to Capacity ratio 0.70											
Actuated Cycle Length (79.3				ost time			12.0			
Intersection Capacity Ut	lization	1	73.2%	10	U Lev	el of Sei	vice		D			
Analysis Period (min)			15									

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Synchro 6 Report 3/4/2011

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Synchro 6 Report 3/4/2011

Barrio Logan CPU 39: 32nd St & Waba	ash St					Hor	izon Y	ear Alt		out Im		
	۶	_#	-	¥	4	+	×	۲	1	Ť	۲	/
Movement	EBL2	EBL	EBT	EBR	WBL	WBT		WBR2	NBL	NBT	NBR	NBR2
Lane Configurations		25	To			4	đ		14	÷	76	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00	1.00	0.88	
Frt		1.00	0.91			1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00			0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1752	1690			1796	1568		1719	1810	2707	
Flt Permitted		0.48	1.00			0.47	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		893	1690			872	1568		1719	1810	2707	
Volume (vph)	115	115	80	130	140	50	210	205	140	360	760	240
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	125	87	141	152	54	228	223	152	391	826	261
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	250	180	0	0	206	451	0	152	391	1087	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot	C	ustom	
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4		4				23	
Actuated Green, G (s)		32.0	32.0			32.0	32.0		15.3	24.0	51.0	
Effective Green, q (s)		32.0	32.0			32.0	32.0		15.3	24.0	51.0	
Actuated g/C Ratio		0.27	0.27			0.27	0.27		0.13	0.20	0.42	
Clearance Time (s)		4.0	4.0			4.0	4.0		4.0	4.0		
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		238	451			233	418		219	362	1150	
v/s Ratio Prot		200	0.11			200			0.09	c0.22		
v/s Ratio Perm		0.28	0			0.24	c0.29		0.00	00.22	c0.40	
v/c Ratio		1.05	0.40			0.88	1.08		0.69	1.08	0.95	
Uniform Delay, d1		44.0	36.1			42.2	44.0		50.1	48.0	33.2	
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		72.2	0.6			30.2	66.8		9.2	70.4	15.1	
Delay (s)		116.2	36.7			72.4	110.8		59.3	118.4	48.3	
Level of Service		F	D			E	F		E	F	D	
Approach Delay (s)			78.3			98.8				66.1		
Approach LOS			E			F				E		
Intersection Summary												
HCM Average Control E			85.1	H	ICM Le	vel of S	ervice		F			
HCM Volume to Capaci			1.09									
Actuated Cycle Length ((s)		120.0	S	Sum of I	ost time	e (s)		12.0			
Intersection Capacity Ut	ilizatior	ı 1	11.7%	10	CU Leve	el of Se	rvice		Н			
Analysis Period (min)			15									
c Critical Lane Group												

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			•			•		-	
Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2	
Lane Configurations		25	个门			25 4			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			4.0			
Lane Util. Factor		1.00	0.95			0.97			
Frt		1.00	0.99			0.98			
Flt Protected		0.95	1.00			0.96			
Satd. Flow (prot)		1767	3407			3321			
Flt Permitted		0.95	1.00			0.91			
Satd. Flow (perm)		1767	3407			3151			
Volume (vph)	35	415	380	30	10	340	55	10	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	38	451	413	33	11	370	60	11	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	489	446	0	0	452	0	0	
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%	
Turn Type	Prot	Prot			Perm				
Protected Phases	1	1	6			3			
Permitted Phases					3				
Actuated Green, G (s)		25.0	33.7			23.0			
Effective Green, g (s)		25.0	33.7			23.0			
Actuated g/C Ratio		0.21	0.28			0.19			
Clearance Time (s)		4.0	4.0			4.0			
Vehicle Extension (s)		3.0	3.0			3.0			
Lane Grp Cap (vph)		368	957			604			
v/s Ratio Prot		c0.28	0.13						
v/s Ratio Perm						0.14			
v/c Ratio		1.33	0.47			0.75			
Uniform Delay, d1		47.5	35.7			45.8			
Progression Factor		1.00	1.00			1.00			
Incremental Delay, d2		165.6	0.4			5.1			
Delay (s)		213.1	36.1			50.8			
Level of Service		F	D			D			
Approach Delay (s)			128.7			50.8			
Approach LOS			F			D			

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Barrio Logan CPU 40: Harbor Dr & 32r	nd St					Hori	zon Y	ear Alt			iprover Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ሳቀ	*5	J.	44	7	Υç	44	۴	7	44	*
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1538	1687	3374	1467	1719	3438	1500	1719	3438	1526
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1538	1687	3374	1467	1719	3438	1500	1719	3438	1526
Volume (vph)	340	1160	100	40	434	460	70	690	140	310	280	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	370	1261	109	43	472	500	76	750	152	337	304	283
RTOR Reduction (vph)	0	0	34	0	0	426	0	0	61	0	0	89
Lane Group Flow (vph)	370	1261	75	43	472	74	76	750	91	337	304	194
Confl. Bikes (#/hr)						7			12			10
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		ustom	Prot		custom	Prot		Perm	Prot		custom
Protected Phases	3	1426	15	13	1826		15	12		11 1 5	16 1 5	315
Permitted Phases			14			18			12			16
Actuated Green, G (s)	25.2	38.3	42.0	4.0	17.1	12.1	8.7	26.1	26.1	22.1	43.5	64.7
Effective Green, g (s)	25.2	38.3	42.0	4.0	17.1	12.1	8.7	26.1	26.1	22.1	43.5	64.7
Actuated g/C Ratio	0.21	0.31	0.34	0.03	0.14	0.10	0.07	0.21	0.21	0.18	0.36	0.53
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0	4.0			_
Vehicle Extension (s)	3.0	1075	3.0	3.0		3.0	3.0	3.0	3.0		1001	
Lane Grp Cap (vph)	354	1075	527	55	471	145	122	733	320	310	1221	856
v/s Ratio Prot	c0.22	c0.37	0.01	0.03	0.14	0.05	0.04	c0.22	0.00	c0.20	0.09	0.06
v/s Ratio Perm	4.05	4 4 7	0.04	0.70	4 00	0.05	0.00	4 00	0.06	4 00	0.05	0.07
v/c Ratio	1.05	1.17	0.14	0.78	1.00	0.51	0.62	1.02	0.28	1.09	0.25	0.23
Uniform Delay, d1	48.6	42.1	27.8	58.8	52.7	52.4	55.3	48.2	40.4	50.2	27.9	15.5
Progression Factor	1.00 60.1	1.00 87.9	1.00 0.1	1.00 50.5	1.00 42.0	1.00 2.8	1.00 9.5	1.00 39.2	1.00 0.5	0.94	0.94	0.88 0.1
Incremental Delay, d2 Delay (s)	108.8	130.0	27.9	109.3	94.7	55.2	9.5 64.8	39.2 87.4	40.9	123.6	26.4	13.8
Level of Service	100.0 F	130.0 F	27.9 C	109.3 F	94.7 F	55.2 E	04.0 E	07.4 F	40.9 D	123.0 F	20.4 C	13.0 B
Approach Delay (s)	г	г 119.1	C	г	75.8	_	E	78.4	D	г	58.0	D
Approach LOS		F			75.8 E			70.4 E			58.0 E	
Intersection Summary												
HCM Average Control E	Delav		89.0	H	ICM Le	vel of S	ervice		F			
HCM Volume to Capaci			1.12									
Actuated Cycle Length (122.5	S	Sum of I	ost time	(s)		32.0			
Intersection Capacity Ut		า	85.0%			el of Sei			E			
Analysis Period (min)			15									
c Critical Lane Group												

41: Main St & I-15 F	Ramps							lan: PM Peak
	≯	+	Ļ	•	1	4		
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	ሻ	ሳቀ	44	pr	**			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00			
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00	1.00	0.85	0.93			
Flt Protected	0.95	1.00	1.00	1.00	0.98			
Satd. Flow (prot)	1770	3539	3539	1583	1678			
Flt Permitted	0.95	1.00	1.00	1.00	0.98			
Satd. Flow (perm)	1770	3539	3539	1583	1678			
Volume (vph)	255	743	373	154	120	129		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	277	808	405	167	130	140		
RTOR Reduction (vph)	0	0	0	126	63	0		
Lane Group Flow (vph)	277	808	405	41	207	0		
Confl. Peds. (#/hr)	2.11	000	100		10	4		
Confl. Bikes (#/hr)					10	1		
Turn Type	Prot			Perm		•		
Protected Phases	5	2	6	I enn	4			
Permitted Phases	5	2	0	6	-			
Actuated Green, G (s)	11.9	27.4	11.5	11.5	11.5			
Effective Green, g (s)	11.9	27.4	11.5	11.5	11.5			
Actuated q/C Ratio	0.25	0.58	0.25	0.25	0.25			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			
	449	2068	868	388	411			
Lane Grp Cap (vph)	c0.16	c0.23	0.00	300	c0.12			
v/s Ratio Perm	CU. 16	00.25	0.11	0.03	0.12			
	0.60	0.20	0.47	0.03	0.50			
v/c Ratio	0.62	0.39			0.50			
Uniform Delay, d1	15.5	5.3	15.1	13.7	15.2			
Progression Factor	1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	2.5	0.1	0.4	0.1	1.0			
Delay (s)	18.0	5.4	15.5	13.8	16.2			
Level of Service	В	A	15 O	В	B			
Approach Delay (s)		8.6 A	15.0		16.2 B			
Approach LOS		A	В		в			
Intersection Summary								
HCM Average Control E			11.6	H	ICM Lev	el of Servic	e B	
HCM Volume to Capaci			0.48					
Actuated Cycle Length	(s)		46.9	S	Sum of le	ost time (s)	8.0	
Intersection Capacity U	tilizatior	1 I	49.9%	10	CU Leve	el of Service	А	
Analysis Period (min)			15					
c Critical Lane Group								

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU

Synchro 6 Report 3/4/2011

Horizon Year Alt 2 without Improvements

Barrio Logan CPU 2: National Ave & 10	5th St					F	lorizor	Year		vith Im Timing F		
	≯	-	\mathbf{r}	4	+	•	•	Ť	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			e la			1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			0.98			0.94	
Flt Protected		0.99			1.00			0.98			0.98	
Satd. Flow (prot)		1800			1843			1775			1685	
Flt Permitted		0.90			1.00			0.83			0.88	
Satd. Flow (perm)		1640			1840			1515			1515	
Volume (vph)	40	194	40	3	495	34	40	34	12	65	36	91
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	211	43	3	538	37	43	37	13	71	39	99
RTOR Reduction (vph)	0	15	0	0	6	0	0	8	0	0	60	0
Lane Group Flow (vph)	0	282	0	0	572	0	0	85	0	0	149	0
Confl. Peds. (#/hr)	19		16	16		19	7		14	14		7
Confl. Bikes (#/hr)			4	_		1			1			
Turn Type	Perm			Perm	-		Perm	-		Perm	-	_
Protected Phases		4			8			2			6	
Permitted Phases	4	10 5		8	40.5		2	10.0		6	10.0	_
Actuated Green, G (s)		16.5			16.5			16.2			16.2	
Effective Green, g (s)		16.5 0.41			16.5 0.41			16.2			16.2	
Actuated g/C Ratio Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)					746							
		665			746			603			603	
v/s Ratio Prot v/s Ratio Perm		0.17			c0.31			0.06			c0.10	
v/c Ratio		0.17			0.77			0.08			0.25	
Uniform Delay, d1		8.7			10.4			7.8			8.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			4.7			0.5			1.00	
Delay (s)		9.1			15.2			8.3			9.2	
Level of Service		3.1 A			13.2 B			0.5 A			9.2 A	
Approach Delay (s)		9.1			15.2			8.3			9.2	
Approach LOS		A			B			A			A	
Intersection Summary												
HCM Average Control E	Delav		12.0	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.51						_			
Actuated Cycle Length			40.7	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut			62.9%			el of Se			В			
Analysis Period (min)			15									
c Critical Lane Group												

3: National Ave & Si	gobee •	01								iming P	1	,
	•	→	\mathbf{r}	1	-	•	1	Ť	1	•	Ŧ	-
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	ţ		×	1.			1			1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			0.98	
Flpb, ped/bikes	0.99	1.00		0.98	1.00			0.99			1.00	
Frt	1.00	0.96		1.00	0.99			0.95			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1754	1775		1742	1832			1696			1676	
Flt Permitted	0.40	1.00		0.63	1.00			0.84			0.96	
Satd. Flow (perm)	746	1775		1146	1832			1451			1612	
Volume (vph)	11	146	49	19	377	36	65	26	58	16	40	60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	159	53	21	410	39	71	28	63	17	43	65
RTOR Reduction (vph)	0	23	0	0	7	0	0	40	0	0	42	0
Lane Group Flow (vph)	12	189	0	21	442	0	0	122	0	0	83	0
Confl. Peds. (#/hr)	21		25	25		21	37		14	14		37
Confl. Bikes (#/hr)						3			3			1
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.8	13.8		13.8	13.8			12.2			12.2	
Effective Green, g (s)	13.8	13.8		13.8	13.8			12.2			12.2	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.36			0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	303	720		465	744			521			578	
v/s Ratio Prot		0.11			c0.24							
v/s Ratio Perm	0.02			0.02				c0.08			0.05	
v/c Ratio	0.04	0.26		0.05	0.59			0.23			0.14	
Uniform Delay, d1	6.1	6.7		6.1	7.9			7.6			7.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.2		0.0	1.3			0.2			0.1	
Delay (s)	6.2	6.9		6.2	9.2			7.9			7.5	
Level of Service	А	А		А	А			А			А	
Approach Delay (s)		6.9			9.1			7.9			7.5	
Approach LOS		А			A			А			А	
Intersection Summary												
HCM Average Control D			8.2	H	ICM Le	vel of Se	ervice		Α			
HCM Volume to Capacit			0.43									
Actuated Cycle Length (s)		34.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		45.9%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									
c Critical Lane Group												

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations		ħ		×	*			1			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	
Frt		0.98		1.00	1.00			0.91			0.99	
Flt Protected		1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)		1832		1770	1863			1663			1797	
Flt Permitted		1.00		0.95	1.00			0.98			0.98	
Satd. Flow (perm)		1832		1770	1863			1663			1797	
Volume (vph)	0	175	24	88	209	0	30	0	69	264	233	4
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	0	190	26	96	227	0	33	0	75	287	253	5
RTOR Reduction (vph)	0	7	0	0	0	0	0	67	0	0	4	
Lane Group Flow (vph)	0	209	0	96	227	0	0	41	0	0	587	
Turn Type				Prot			Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)		12.0		5.9	21.9			7.4			24.6	
Effective Green, g (s)		12.0		5.9	21.9			7.4			24.6	
Actuated g/C Ratio		0.18		0.09	0.33			0.11			0.37	
Clearance Time (s)		4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		334		158	619			187			671	
v/s Ratio Prot		c0.11		c0.05	0.12			c0.02			c0.33	
//s Ratio Perm												
v/c Ratio		0.63		0.61	0.37			0.22			0.88	
Uniform Delay, d1		24.9		28.9	16.7			26.6			19.2	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
ncremental Delay, d2		3.7		6.5	0.4			0.6			12.2	
Delay (s)		28.5		35.4	17.1			27.2			31.5	
Level of Service		С		D	В			С			C	
Approach Delay (s)		28.5			22.5			27.2			31.5	
Approach LOS		С			С			С			С	
Intersection Summary			00.0						<u> </u>			
HCM Average Control De			28.2	F	ICM Le	vel of Se	ervice		С			
HCM Volume to Capacity			0.69		Sum of I	oot tim -	(a)		16.0			
Actuated Cycle Length (s			65.9			ost time	· /		16.0			
ntersection Capacity Util	ization		61.9%	10	CU Lev	el of Ser	VICE		В			
Analysis Period (min)			15									

		-										-
	≯	-	\mathbf{r}	1	-	•	1	T.	1	1	Ŧ	-
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	۲	Ţ.		76	To			4.			44	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.97			1.00	
Flpb, ped/bikes	0.98	1.00		0.95	1.00			1.00			0.98	
Frt	1.00	1.00		1.00	0.98			0.92			0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.97	
Satd. Flow (prot)	1741	1848		1688	1810			1655			1753	
Flt Permitted	0.29	1.00		0.57	1.00			0.98			0.77	
Satd. Flow (perm)	524	1848		1014	1810			1632			1393	
Volume (vph)	8	243	8	239	432	66	4	30	50	213	138	23
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	264	9	260	470	72	4	33	54	232	150	25
RTOR Reduction (vph)	0	2	0	0	8	0	0	32	0	0	4	C
Lane Group Flow (vph)	9	271	0	260	534	0	0	59	0	0	403	0
Confl. Peds. (#/hr)	30		46	46		30	48		46	46		48
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.0	19.0		19.0	19.0			18.1			18.1	
Effective Green, g (s)	19.0	19.0		19.0	19.0			18.1			18.1	
Actuated g/C Ratio	0.42	0.42		0.42	0.42			0.40			0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	221	779		427	763			655			559	
v/s Ratio Prot		0.15			c0.29							
v/s Ratio Perm	0.02			0.26				0.04			c0.29	
v/c Ratio	0.04	0.35		0.61	0.70			0.09			0.72	
Uniform Delay, d1	7.7	8.9		10.2	10.7			8.4			11.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.3		2.5	2.8			0.1			4.6	
Delay (s)	7.8	9.1		12.6	13.5			8.4			16.0	
Level of Service	А	А		В	В			А			В	
Approach Delay (s)		9.1			13.2			8.4			16.0	
Approach LOS		А			В			А			В	
Intersection Summary												
HCM Average Control D	Delay		12.9	F	ICM Lev	vel of S	ervice		В			
HCM Volume to Capaci			0.71									
Actuated Cycle Length (45.1	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut			67.8%		CU Leve				С			
Analysis Period (min)			15									

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Horizon Year Alt 2 with Improvements

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Kimley-Horn and Associates, Inc.

Barrio Logan CPU

Barrio Logan CPU	Horizon Year Alt 2 with Improvements
11: Harbor Dr & Beardsley St	Timing Plan: AM Peak
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	-	-	-			*		
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		ሳቀ	412			74		
Sign Control		Free	Free		Stop			
Grade		0%	0%		0%			
Volume (veh/h)	0	560	1580	30	0	138		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	0	609	1717	33	0	150		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type				F	Raised			
Median storage veh)					0			
Upstream signal (ft)		661	658					
pX, platoon unblocked	0.67				0.67	0.67		
vC, conflicting volume	1750				2038	875		
vC1, stage 1 conf vol					1734			
vC2, stage 2 conf vol					304			
vCu, unblocked vol	1627				2057	322		
tC, single (s)	4.3				6.8	6.9		
tC, 2 stage (s)					5.8			
tF (s)	2.3				3.5	3.3		
p0 queue free %	100				100	67		
cM capacity (veh/h)	242				64	452		
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1			_
Volume Total	304	304	1145	605	150			_
Volume Left	0	0	0	0	0			
Volume Right	0	0	0	33	150			
cSH	1700	1700	1700	1700	452			
Volume to Capacity	0.18	0.18	0.67	0.36	0.33			
Queue Length 95th (ft)	0	0	0	0	36			
Control Delay (s)	0.0	0.0	0.0	0.0	16.9			
Lane LOS					С			
Approach Delay (s)	0.0		0.0		16.9			
Approach LOS					С			
Intersection Summary			_		_		_	_
Average Delay			1.0					
Intersection Capacity Ut	ilization		59.8%	10		el of Servio	à	
Analysis Period (min)	mzation		15	- N	JO LEV			
			15					

Barrio Logan CPU Horizon Year Alt 2 with Improvements 13: Logan Ave & Cesar E. Chavez Pkwy Timing Plan: AM Peak												
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	₽	1	×	4	7	μÇ	44	P ^r	ž	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1756	1863	1543	1761	1863	1544	1530	3059	1333	1530	3004	
Flt Permitted	0.48	1.00	1.00	0.21	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	887	1863	1543	384	1863	1544	1530	3059	1333	1530	3004	
Volume (vph)	140	300	120	100	350	76	100	300	300	70	818	80
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	326	130	109	380	83	109	326	326	76	889	87
RTOR Reduction (vph)	0	0	98	0	0	54	0	0	166	0	7	0
Lane Group Flow (vph)	152	326	32	109	380	29	109	326	160	76	969	0
Confl. Peds. (#/hr)	15		13	13		15			17			39
Confl. Bikes (#/hr)			4									2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Prot		ustom	Prot		
Protected Phases		4			8		5	2	3	1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)	19.5	19.5	19.5	27.5	27.5	27.5	5.8	33.1	37.1	7.4	34.7	
Effective Green, g (s)	19.5	19.5	19.5	27.5	27.5	27.5	5.8	33.1	37.1	7.4	34.7	
Actuated g/C Ratio	0.24	0.24	0.24	0.34	0.34	0.34	0.07	0.41	0.46	0.09	0.43	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	216	454	376	132	640	531	111	1266	685	142	1303	
v/s Ratio Prot		0.18			0.20		c0.07	0.11	0.01	0.05	c0.32	
v/s Ratio Perm	0.17		0.02	c0.28		0.02			0.11			
v/c Ratio	0.70	0.72	0.08	0.83	0.59	0.05	0.98	0.26	0.23	0.54	0.74	
Uniform Delay, d1	27.6	27.7	23.4	24.1	21.6	17.6	37.0	15.4	12.9	34.7	18.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.84	0.88	1.00	1.00	
Incremental Delay, d2	9.9	5.4	0.1	32.5	1.5	0.0	75.0	0.4	0.2	3.8	3.9	
Delay (s)	37.6	33.1	23.5	56.6	23.1	17.6	109.7	13.4	11.5	38.5	22.8	
Level of Service	D	С	С	E	С	В	F	В	В	D	С	
Approach Delay (s)		32.2			28.7			26.4			23.9	
Approach LOS		С			С			С			С	
Intersection Summary												
HCM Average Control D	Delay		27.1	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit			0.80									
Actuated Cycle Length (80.0	Sum of lost time (s)					12.0			
Intersection Capacity Ut			72.1%	ICU Level of Service					С			
Analysis Period (min)			15									
a Critical Long Crown												

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Barrio Logan CPU 14: National Ave &	Barrio Logan CPU 4: National Ave & Cesar E. Chavez Pkwy										nproven Plan: AM	
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	7	4	P ⁴	JA,	4	7	H.	4 Tə	34	÷	۲	
Volume (vph)	190	250	190	120	350	110	100	570	60	765	310	
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		Perm	
Protected Phases		4			8			2		6		
Permitted Phases	4		4	8		8	2		6		6	
Detector Phases	4	4	4	8	8	8	2	2	6	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0	
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5	45.5	45.5	45.5	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.57	0.57	0.57	0.57	0.57	
v/c Ratio	0.91	0.44	0.34	0.43	0.62	0.20	1.01	0.37	0.21	0.91	0.37	
Control Delay	67.3	22.5	8.5	24.4	26.5	4.4	114.5	8.9	4.9	23.6	1.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay	67.3	22.5	8.5	24.4	26.5	4.4	114.5	8.9	4.9	23.6	1.2	
LOS	E	С	А	С	С	А	F	A	A	С	А	
Approach Delay		31.8			21.9			23.6		16.5		
Approach LOS		С			С			С		В		
Intersection Summary												
Cycle Length: 80												
Actuated Cycle Length	า: 80											
Offset: 0 (0%), Refere	nced to p	hase 2	NBTL a	and 6:SE	BTL, Sta	art of G	reen					
Natural Cycle: 90												
Control Type: Actuated	d-Coordii	nated										
Maximum v/c Ratio: 1	.01											
Intersection Signal De	lay: 22.3			1	ntersec	tion LO	S: C					
Intersection Capacity I		า 88.1%		1	CU Lev	el of Se	ervice E					
Analysis Period (min)	15											
Splits and Phases:	14: Natio	nal Ave	& Cesa	ar E. Ch	avez Pl	wy						

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	4	7*	14	t	7	45	41>		7	4	i
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.(
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.8
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3184		1530	1610	1369
Flt Permitted	0.33	1.00	1.00	0.47	1.00	1.00	0.15	1.00		0.36	1.00	1.00
Satd. Flow (perm)	610	1863	1583	873	1863	1583	261	3184		574	1610	1369
Volume (vph)	190	250	190	120	350	110	100	570	50	60	765	310
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	272	207	130	380	120	109	620	54	65	832	337
RTOR Reduction (vph)	0	0	90	0	0	80	0	7	0	0	0	12
Lane Group Flow (vph)	207	272	117	130	380	40	109	667	0	65	832	21
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Pern
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		(
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5		45.5	45.5	45.5
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5		45.5	45.5	45.5
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.57	0.57		0.57	0.57	0.5
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.
Lane Grp Cap (vph)	202	617	524	289	617	524	148	1811		326	916	77
v/s Ratio Prot		0.15			0.20			0.21			c0.52	
v/s Ratio Perm	c0.34		0.07	0.15		0.03	0.42			0.11		0.1
v/c Ratio	1.02	0.44	0.22	0.45	0.62	0.08	0.74	0.37		0.20	0.91	0.2
Uniform Delay, d1	26.8	20.9	19.3	21.0	22.5	18.4	12.8	9.4		8.4	15.4	8.
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.82		0.34	0.47	0.0
Incremental Delay, d2	69.9	0.5	0.2	1.1	1.8	0.1	27.3	0.6		1.1	12.1	0.
Delay (s)	96.7	21.5	19.5	22.1	24.3	18.4	38.3	8.3		4.0	19.4	1.0
Level of Service	F	С	В	С	С	В	D	А		А	В	
Approach Delay (s)		43.6			22.7			12.5			13.5	
Approach LOS		D			С			В			В	
Intersection Summary												
HCM Average Control E			21.2	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.95									
Actuated Cycle Length			80.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		88.1%	10	CU Lev	el of Se	rvice		E			
Analysis Period (min)			15									
Critical Long Croup												

c Critical Lane Group

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Synchro 6 Report 3/4/2011

15: Newton Ave &	٨		~	+	*	ŧ	5	I	
		_	•		1	I		•	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	۲	Ţ.	۳	To	1	41.	16	ţ,	
Volume (vph)	80	40	40	50	40	420	100	825	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0	
Total Split (%)					61.3%				
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None		C-Min				
Act Effct Green (s)	10.3	10.3	10.3	10.3	64.4	64.4	64.4	64.4	
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.80	0.80	0.80	0.80	
v/c Ratio	0.54	0.39	0.26	0.46	0.35	0.19	0.18	0.79	
Control Delay	44.1	18.5	33.8	19.7	12.0	1.9	2.7	7.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	
Total Delay	44.1	18.5	33.8	19.7	12.0	1.9	2.7	8.3	
LOS	D	В	С	В	В	A	А	A	
Approach Delay		29.9		23.2		2.8		7.8	
Approach LOS		С		С		A		A	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Lengt	n: 80								
Offset: 6 (8%), Refere		hase 2:	NBTL a	ind 6:SE	BTL, Sta	art of Gr	een		
Natural Cycle: 90									
Control Type: Actuate	d-Coordii	nated							
Maximum v/c Ratio: 0	.79								
ntersection Signal De	lay: 9.9			1	ntersect	tion LOS	S: A		
Intersection Capacity		77.0%		- 1	CU Lev	el of Se	rvice D		

Splits and Phases:	15: Newton Ave & Cesar E. Chave	z Pkwy
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Synchro 6 Report 3/4/2011

Barrio Logan CPU 15: Newton Ave & C	cesar E	E. Cha	vez Pk	wy		F	lorizor	n Year			prover Plan: AN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	ţ,		Υ.	Tr		H.	作		ž	1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.91		1.00	0.91		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1695		1770	1699		1612	3191		1612	1657	
Flt Permitted	0.56	1.00		0.65	1.00		0.19	1.00		0.47	1.00	
Satd. Flow (perm)	1049	1695		1208	1699		324	3191		803	1657	
Volume (vph)	80	40	60	40	50	70	40	420	30	100	825	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	43	65	43	54	76	43	457	33	109	897	163
RTOR Reduction (vph)	0	58	0	0	67	0	0	3	0	0	4	0
Lane Group Flow (vph)	87	50	0	43	63	0	43	487	0	109	1056	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8	Ū		2	-		6	Ű	
Actuated Green, G (s)	9.2	9.2		9.2	9.2		62.8	62.8		62.8	62.8	
Effective Green, g (s)	9.2	9.2		9.2	9.2		62.8	62.8		62.8	62.8	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78		0.78	0.78	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	121	195		139	195		254	2505		630	1301	
v/s Ratio Prot		0.03			0.04		20.	0.15		000	c0.64	
v/s Ratio Perm	c0.08	0.00		0.04	0101		0.13	0110		0.14	00101	
v/c Ratio	0.72	0.26		0.31	0.32		0.17	0.19		0.17	0.81	
Uniform Delay, d1	34.2	32.3		32.5	32.5		2.1	2.2		2.1	5.1	
Progression Factor	1.00	1.00		1.00	1.00		0.77	0.68		0.71	0.45	
Incremental Delay, d2	18.4	0.7		1.3	1.0		1.3	0.2		0.4	3.6	
Delay (s)	52.6	33.0		33.8	33.5		3.0	1.7		1.9	5.9	
Level of Service	D	С		C	С		A	A		A	A	
Approach Delay (s)		41.7			33.6			1.8			5.6	
Approach LOS		D			С			A			А	
Intersection Summary												
HCM Average Control E			10.3	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.80									
Actuated Cycle Length (80.0			ost time	· · /		8.0			
Intersection Capacity Ut	ilization		77.0%	10	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group

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Synchro 6 Report 3/4/2011

Barrio Logan CPU 16: Main St & Cesa	ar E. Cł	navez	Pkwy			I	Horizo	n Yeai		with Improvements Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	ž	ĥ	Υ.	4	r	ž	47.	<i>s</i> t	1	
Volume (vph)	150	190	70	350	190	85	340	150	580	
Turn Type	Perm		Perm		Perm	Perm		Perm		
Protected Phases		4		8			2		6	
Permitted Phases	4		8		8	2		6		
Detector Phases	4	4	8	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0	
Total Split (%)	38.8%	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	23.7	23.7	23.7	23.7	23.7	48.3	48.3	48.3	48.3	
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.30	0.60	0.60	0.60	0.60	
v/c Ratio	0.90	0.41	0.26	0.69	0.35	0.65	0.25	0.35	0.89	
Control Delay	73.3	23.4	22.3	31.3	4.8	40.1	7.3	6.7	19.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	5.7	
Total Delay	73.3	23.4	22.3	31.3	4.8	40.1	7.7	6.7	24.9	
LOS	E	С	С	С	А	D	А	A	С	
Approach Delay		44.5		22.0			13.0		21.9	
Approach LOS		D		С			В		С	
Intersection Summary										
Cycle Length: 80										
Actuated Cycle Length	: 80									
Offset: 14 (18%), Refe	renced t	o phase	2:NBT	L and 6	:SBTL,	Start of	Green			
Natural Cycle: 80										
Control Type: Actuated	d-Coordii	nated								
Maximum v/c Ratio: 0.	90									
Intersection Signal Del	ay: 23.4			I	ntersec	tion LO	S: C			
Intersection Capacity L	Jtilizatior	n 90.7%	b	1	CU Lev	el of Se	rvice E			
Analysis Period (min) 1	15									
Splits and Phases: 1	6: Main	St & Ce	esar E. (Chavez	Pkwy					

opino anu Friases.	TO. WAIT SLOCUESALE. CHAVEZ FRWS	
↑		<i>▲</i> ₀₄
49 s		31 s
↓ ~ _{ø6}		\$ ø8
49 s		31 s

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Maximum	EBL	EBT	EBR				NBL			SBL	SBT	0.00
Movement			EBK	WBL	WBT	WBR		NBT	NBR		-	SBF
Lane Configurations	1000	1	1000	1000	1000	1000	1000	41	1000	1000	1000	4000
Ideal Flow (vphpl)	1900 4.0	1900	1900	1900	1900 4.0	1900	1900	1900	1900	1900 4.0	1900 4.0	1900
Total Lost time (s)		4.0		4.0	1.00	4.0	4.0	4.0 0.95				
Lane Util. Factor	1.00 1.00	1.00 1.00		1.00 1.00	1.00	0.95	1.00 1.00	0.95		1.00 1.00	1.00 0.98	
Frpb, ped/bikes												
Flpb, ped/bikes Frt	0.98	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Fit Protected	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.96	
	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1742	1839		1750	1863	1511	1556	2996		1549	1550	
Flt Permitted Satd. Flow (perm)	0.29 524	1.00 1839		0.52 950	1.00 1863	1.00 1511	0.18 290	1.00 2996		0.47 772	1.00 1550	
<u> </u>			45						00			4.01
Volume (vph)	150	190	15	70	350	190	85	340	90	150	580	195
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	207	16	76	380	207	92	370	98	163	630	212
RTOR Reduction (vph)	0	4	0	0	0	146	0	27	0	0	14	(
Lane Group Flow (vph)	163	219	0	76	380	61	92	441	0	163	828	(
Confl. Peds. (#/hr)	38		18	18		38	26		5	5		26
Confl. Bikes (#/hr)	00/	00/	2	001	0.01	1	1.00/	4.004	1	4.00/	4.004	2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4		_	8	-	_	2		_	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	23.7	23.7		23.7	23.7	23.7	48.3	48.3		48.3	48.3	
Effective Green, g (s)	23.7	23.7		23.7	23.7	23.7	48.3	48.3		48.3	48.3	
Actuated g/C Ratio	0.30	0.30		0.30	0.30	0.30	0.60	0.60		0.60	0.60	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	155	545		281	552	448	175	1809		466	936	
v/s Ratio Prot		0.12			0.20			0.15			c0.53	
v/s Ratio Perm	c0.31			0.08		0.04	0.32			0.21		
v/c Ratio	1.05	0.40		0.27	0.69	0.14	0.53	0.24		0.35	0.88	
Uniform Delay, d1	28.2	22.5		21.5	24.9	20.6	9.2	7.4		8.0	13.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.54	0.57	
Incremental Delay, d2	86.6	0.5		0.5	3.6	0.1	10.8	0.3		1.3	8.3	
Delay (s)	114.8	23.0		22.1	28.5	20.8	20.1	7.7		5.6	15.9	
Level of Service	F	С		С	С	С	С	A		А	В	
Approach Delay (s)		61.8			25.3			9.7			14.2	
Approach LOS		E			С			А			В	
Intersection Summary												
HCM Average Control E	Delay		23.1	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.94									
Actuated Cycle Length			80.0	S	Sum of I	ost time	e (S)		8.0			
Intersection Capacity Ut	ilization		90.7%	10	CU Lev	el of Se	rvice		E			
intercoulon oupdaily of												
Analysis Period (min)			15									

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Barrio Logan CPU 17: Harbor Dr & Ces	sar E. (Chave	z Pkw	y		ŀ	lorizor	Year		vith Im Timing F		
	۶	-	\mathbf{r}	4	+	×	1	1	1	1	Ŧ	-
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	朴弘		74	44	7	H.	4	r		4	ام
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98		1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)	3183	3225		1421	3282	1433	1364	1439	1112		1599	1375
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.51	1.00	1.00		0.85	1.00
Satd. Flow (perm)	3183	3225		1421	3282	1433	725	1439	1112		1399	1375
Volume (vph)	109	404	40	80	1056	99	10	14	27	77	83	510
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	439	43	87	1148	108	11	15	29	84	90	554
RTOR Reduction (vph)	0	6	0	0	0	57	0	0	25	0	0	19
Lane Group Flow (vph)	118	476	0	87	1148	51	11	15	4	0	174	535
Confl. Peds. (#/hr)			11			6	4		1	1		4
Confl. Bikes (#/hr)			5			11			2			
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		pm+ov
Protected Phases	3	1426		13	1826			12			1 5 16	3
Permitted Phases						1826	12		12	1516		1516
Actuated Green, G (s)	6.3	35.4		6.3	35.4	35.4	13.8	13.8	13.8		26.2	32.5
Effective Green, g (s)	6.3	35.4		6.3	35.4	35.4	13.8	13.8	13.8		26.2	32.5
Actuated g/C Ratio	0.07	0.39		0.07	0.39	0.39	0.15	0.15	0.15		0.29	0.35
Clearance Time (s)	4.0			4.0			4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0			3.0			3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	218	1242		97	1264	552	109	216	167		399	486
v/s Ratio Prot	0.04	0.15		0.06	c0.35			0.01				c0.08
v/s Ratio Perm						0.04	0.02		0.00		0.12	0.31
v/c Ratio	0.54	0.38		0.90	0.91	0.09	0.10	0.07	0.03		0.44	1.10
Uniform Delay, d1	41.4	20.4		42.5	26.7	18.0	33.7	33.5	33.3		26.8	29.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		0.97	1.06
Incremental Delay, d2	2.7	0.2		58.7	9.6	0.1	0.4	0.1	0.1		0.8	70.7
Delay (s)	44.1	20.6		101.2	36.3	18.1	34.1	33.7	33.4		26.9	102.1
Level of Service	D	С		F	D	В	С	С	С		С	F
Approach Delay (s)		25.2			39.1			33.6			84.1	
Approach LOS		С			D			С			F	
Intersection Summary												
HCM Average Control E	Delay		47.9	F		vel of S	ervice		D			
HCM Volume to Capaci			1.00				0.1100		5			
Actuated Cycle Length (
			91.9	9	Sum of I	ost time	e (s)		24.0			
Intersection Capacity Ut	(s)	1	91.9 75.4%			<mark>ost time</mark> el of Se	· · /		24.0 D			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	CDL N	<u>сы</u>	EDK	VV DL	1	VVDK	INDL M		NDK	JDL N		SDR
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	1900	4.0	4.0	1900	4.0	4.0	1900	4.0	4.0	1900
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.93		1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1745		1770	1741		1770	1773		1770	1847	
Flt Permitted	0.66	1.00		0.36	1.00		0.59	1.00		0.29	1.00	
Satd. Flow (perm)	1234	1745		667	1741		1100	1773		547	1847	
Volume (vph)	101	220	161	106	77	60	212	366	174	62	237	14
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	239	175	115	0.92	65	230	398	189	67	258	0.92
RTOR Reduction (vph)	0	40	0	0	43	00	230	26	0	07	200	0
Lane Group Flow (vph)	110	374	0	115	106	0	230	561	0	67	270	0
Turn Type		3/4	0	Perm	100	0		100	0	Perm	270	0
Protected Phases	Perm	4		Perm	8		Perm	2		Perm	6	
Protected Phases	4	4		8	8		2	2		6	0	
		14.6		8 14.6	14.6			20.6			20.6	
Actuated Green, G (s) Effective Green, g (s)	14.6 14.6	14.6		14.6	14.6		20.6 20.6	20.6		20.6 20.6	20.6	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.48	0.48		0.48	0.48	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
							3.0					
Lane Grp Cap (vph)	417	590		225	588		525	845		261	881	
v/s Ratio Prot	0.00	c0.21		0.47	0.06		0.04	c0.32		0.40	0.15	
v/s Ratio Perm	0.09	0.00		0.17	0.40		0.21	0.00		0.12	0.04	
v/c Ratio	0.26	0.63		0.51	0.18		0.44	0.66		0.26	0.31	
Uniform Delay, d1	10.4	12.0		11.4	10.1		7.5	8.7		6.7	6.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00 0.2	
Incremental Delay, d2	0.3	2.2		2.0	0.1		0.6	2.0		0.5		
Delay (s)	10.7	14.3 B		13.4 B	10.2 B		8.1	10.0 B		7.3 A	7.1 A	
Level of Service Approach Delay (s)	В	13.5		В	ы 11.6		A	9.9		A	7.1	
Approach LOS		13.5 B			H.0 B			9.9 A			7.1 A	
Intersection Summary		-										
HCM Average Control D)elav		10.6	Ŀ	CML	vel of S	arvice		В			
HCM Volume to Capacit			0.65				CI VICE		0			
Actuated Cycle Length (43.2	0	um of I	ost time	(s)		8.0			
Intersection Capacity Ut			73.9%			el of Sei	· · /		0.0 D			
Analysis Period (min)	mzauon		13.9%	- N	SO Levi		VICE		U			
c Critical Lane Group			13									

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Novement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations		ţ,		λi,	4		Υç		P ^r		1	
Sign Control		Stop			Stop			Stop			Stop	
/olume (vph)	0	70	19	146	214	0	33	0	124	16	19	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	76	21	159	233	0	36	0	135	17	21	14
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1						
/olume Total (vph)	97	159	233	36	135	52						
/olume Left (vph)	0	159	0	36	0	17						
/olume Right (vph)	21	0	0	0	135	14						
Hadj (s)	-0.09	0.94	0.03	0.23	0.05	-0.06						
Departure Headway (s)	4.6	5.8	4.9	5.3	3.2	5.0						
Degree Utilization, x	0.12	0.25	0.31	0.05	0.12	0.07						
Capacity (veh/h)	764	610	727	626	1121	666						
Control Delay (s)	8.2	9.5	8.8	8.6	6.6	8.4						
Approach Delay (s)	8.2	9.1		7.1		8.4						
Approach LOS	Α	А		А		А						
ntersection Summary												
Delay			8.4									
HCM Level of Service			А									
ntersection Capacity Uti	lizatior	า	31.5%	10	CU Lev	el of Ser	vice		А			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	• SBT	SBF
Lane Configurations			EDK	VVDL		VVDR	INDL	INDI	INDK	SDL	SDI	
Ideal Flow (vphpl)	1900	† †+ 1900	1900	1900	1 900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	1900	1900	4.0	1900	1900	1900	1900	1900	1900	4.0
Lane Util. Factor	4.0	0.95			0.95							1.0
Frpb, ped/bikes	1.00	1.00			1.00							1.00
1. 7.1	1.00	1.00			1.00							1.00
Flpb, ped/bikes Frt	1.00	1.00			1.00							0.86
Fit Protected	0.95	1.00			1.00							1.0
Satd. Flow (prot)	1543	3539			3534							1454
Flt Permitted	0.95	1.00			1.00							1454
Satd. Flow (perm)	1543				3534							1454
		3539	0	0		47	0	0	0	0	0	
Volume (vph)	86	505	0	0	1573	17	0	0	0	0	0	8
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	549	0	0	1710	18	0	0	0	0	0	93
RTOR Reduction (vph)	0	0	0	0	1727	0	0	0	0	0	0	84
Lane Group Flow (vph)	93	549	0	0	1727	0	0	0	0	0	0	9
Confl. Peds. (#/hr)			8	8					2	2		
Confl. Bikes (#/hr)	470/	00/	00/	00/	00/	00/	00/	00/	5	00/	40/	11
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot											Ove
Protected Phases	13	1826			1426							13
Permitted Phases		= 0 0										
Actuated Green, G (s)	8.7	58.0			41.3							8.
Effective Green, g (s)	8.7	58.0			41.3							8.
Actuated g/C Ratio	0.10	0.65			0.46							0.10
Clearance Time (s)	4.0											4.0
Vehicle Extension (s)	3.0											3.0
Lane Grp Cap (vph)	151	2304			1638							142
v/s Ratio Prot	c0.06	0.16			c0.49							0.0
v/s Ratio Perm												
v/c Ratio	0.62	0.24			1.05							0.0
Uniform Delay, d1	38.6	6.4			23.9							36.
Progression Factor	1.00	1.00			1.00							1.00
Incremental Delay, d2	7.3	0.1			38.2							0.2
Delay (s)	45.9	6.5			62.1							36.
Level of Service	D	A			E							0
Approach Delay (s)		12.2			62.1			0.0			36.7	
Approach LOS		В			E			A			D	
Intersection Summary												
HCM Average Control E	Delay		48.1	H	ICM Lev	vel of Se	ervice		D			
HCM Volume to Capaci	ty ratio		0.98									
Actuated Cycle Length ((S)		89.1	S	um of l	ost time	(S)		39.1			
Intersection Capacity Ut	ilizatior	ı	56.0%	IC	CU Leve	el of Ser	vice		В			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	44	1	1	Ta			4	ľ	001	4	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1299	1814			1754	1509		1745	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.77	1.00		0.79	1.00
Satd. Flow (perm)	1770	3539	1583	1299	1814			1369	1509		1396	1509
Volume (vph)	106	245	18	186	599	126	33	102	82	118	213	307
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	266	20	202	651	137	36	111	89	128	232	334
RTOR Reduction (vph)	0	0	12	0	5	0	0	0	60	0	0	225
Lane Group Flow (vph)	115	266	8	202	783	0	0	147	29	0	360	109
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		E
Actuated Green, G (s)	8.5	42.1	42.1	18.3	51.9			34.9	34.9		34.9	34.9
Effective Green, g (s)	8.5	42.1	42.1	18.3	51.9			34.9	34.9		34.9	34.9
Actuated g/C Ratio	0.08	0.39	0.39	0.17	0.48			0.33	0.33		0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	140	1389	621	222	877			445	491		454	491
v/s Ratio Prot	0.06	0.08		c0.16	c0.43							
v/s Ratio Perm			0.00					0.11	0.02		c0.26	0.07
v/c Ratio	0.82	0.19	0.01	0.91	0.89			0.33	0.06		0.79	0.22
Uniform Delay, d1	48.7	21.4	19.9	43.7	25.2			27.4	24.9		32.9	26.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	30.5	0.1	0.0	36.3	11.4			0.4	0.1		9.2	0.2
Delay (s)	79.2	21.5	19.9	80.0	36.5			27.8	25.0		42.1	26.5
Level of Service	E	С	В	E	D			С	С		D	C
Approach Delay (s)		38.0			45.4			26.7			34.6	
Approach LOS		D			D			С			С	
Intersection Summary												
HCM Average Control D	Delay		39.0	F	ICM Le	vel of S	ervice		D			
HCM Volume to Capacit	ty ratio		0.85									
Actuated Cycle Length ((S)		107.3	S	Sum of I	ost time	e (S)		8.0			
Intersection Capacity Ut			83.3%	10	CU Lev	el of Se	rvice		E			
Analysis Period (min)			15									

Barrio Logan CPU 34: Boston Ave & 28	3th St					F	lorizor	n Year		vith Im Timing F		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	4	ž	ž	To		Υ	4 1>		Ň	441.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1776	1509	1687	1611		1770	3447		1770	4856	
Flt Permitted	0.54	1.00	1.00	0.56	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	965	1776	1509	993	1611		1770	3447		1770	4856	
Volume (vph)	250	200	150	50	80	130	90	720	40	170	880	300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	217	163	54	87	141	98	783	43	185	957	326
RTOR Reduction (vph)	0	0	110	0	90	0	0	5	0	0	71	0
Lane Group Flow (vph)	272	217	53	54	138	0	98	821	0	185	1212	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	4%	2%	2%	3%	2%
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	21.7	21.7	21.7	21.7	21.7		4.6	24.3		9.0	28.7	
Effective Green, g (s)	21.7	21.7	21.7	21.7	21.7		4.6	24.3		9.0	28.7	
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32		0.07	0.36		0.13	0.43	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	313	575	489	322	522		122	1250		238	2080	
v/s Ratio Prot		0.12			0.09		0.06	c0.24		c0.10	0.25	
v/s Ratio Perm	c0.28		0.03	0.05								
v/c Ratio	0.87	0.38	0.11	0.17	0.26		0.80	0.66		0.78	0.58	
Uniform Delay, d1	21.3	17.4	15.9	16.2	16.7		30.8	17.9		28.0	14.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.7	0.4	0.1	0.2	0.3		30.5	2.7		14.7	1.2	
Delay (s)	43.0	17.9	16.0	16.4	17.0		61.2	20.6		42.7	15.8	
Level of Service	D	В	В	В	В		E	С		D	В	
Approach Delay (s)		27.9			16.9			24.9			19.2	
Approach LOS		С			В			С			В	
Intersection Summary												
HCM Average Control E			22.3	F	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.76									
Actuated Cycle Length			67.0			ost time	· · /		12.0			
Intersection Capacity Ut	ilization		70.0%	10	CU Lev	el of Sei	vice		С			
Analysis Period (min)			15									
c Critical Lane Group												

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Barrio Logan CPU <u>36: Harbor Dr & 28t</u>	h St					F	lorizor	n Year			prover Plan: AN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	ሳቀ	7*	ji.	44	7		de.		44	4	ţ#
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.94		0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	3303	3406	1306	1719	3438	1439		1763		3367	1827	1525
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (perm)	3303	3406	1306	1719	3438	1439		1763		3367	1827	1525
Volume (vph)	70	670	4	18	943	115	0	6	2	339	15	22
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	728	4	20	1025	125	0.52	7	2	368	16	24
RTOR Reduction (vph)	0	0	2	0	0	48	0	2	0	0	0	18
Lane Group Flow (vph)	76	728	2	20	1025	77	0	7	0	368	16	6
Confl. Peds. (#/hr)	70	120	69	20	1025	80	0	'	0	300	10	0
Confl. Bikes (#/hr)			03			3			6			7
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		ustom	Prot		custom	Split	4 /0	4 /0	Split	4 /0	Perm
Protected Phases		1626	usiom		1226	13	Spiit 14	14		1 13 5	10 1 E	Peim
Permitted Phases	11	1020	16	15	1220	13	14	14		1135		1513
	4.0	27 F	31.7	2.7	26.2			12.0		20.0		
Actuated Green, G (s)	4.0	37.5	31.7	2.7	36.2 36.2	49.0 49.0		13.8		29.0	29.0	29.0
Effective Green, g (s)	4.0 0.03	37.5 0.33	0.28	0.02	0.31	49.0 0.43		13.8 0.12		29.0 0.25	29.0 0.25	29.0 0.25
Actuated g/C Ratio	4.0	0.33		4.0	0.51	4.0				0.25	0.25	0.25
Clearance Time (s)			4.0					4.0				
Vehicle Extension (s)	3.0		3.0	3.0		3.0		3.0				
Lane Grp Cap (vph)	115	1111	360	40	1082	613		212		849	461	385
v/s Ratio Prot	c0.02	0.21		0.01	c0.30	0.02		c0.00		c0.11	0.01	
v/s Ratio Perm			0.00			0.03						0.00
v/c Ratio	0.66	0.66	0.01	0.50	0.95	0.13		0.03		0.43	0.03	0.02
Uniform Delay, d1	54.8	33.2	30.2	55.5	38.5	20.0		44.7		36.1	32.4	32.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.90	0.91	1.44
Incremental Delay, d2	13.4	1.4	0.0	9.5	16.1	0.1		0.1		0.4	0.0	0.0
Delay (s)	68.2	34.6	30.2	65.0	54.6	20.1		44.8		33.0	29.7	46.5
Level of Service	E	С	С	E	D	С		D		С	С	D
Approach Delay (s)		37.7			51.1			44.8			33.6	
Approach LOS		D			D			D			С	
Intersection Summary												
HCM Average Control E			43.6	H	ICM Le	vel of Se	ervice		D			
HCM Volume to Capaci	ty ratio		0.60									
Actuated Cycle Length (115.0	S	Sum of I	ost time	(s)		32.0			
Intersection Capacity Ut	ilizatior	۱	53.0%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Barrio Logan CPU 37: Boston Ave & I-5	5 SB C)n-ram	р			F	lorizor	Year		vith Im Timing P		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			10				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			1.00				
Frt		0.99			0.94			0.99				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1717			1665			1384				
Flt Permitted		0.97			1.00			1.00				
Satd. Flow (perm)		1717			1665			1384				
Volume (vph)	132	104	14	20	107	96	6	186	19	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	113	15	22	116	104	7	202	21	0	0	0
RTOR Reduction (vph)	0	3	0	0	33	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	268	0	0	209	0	0	227	0	0	0	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	40%	2%	2%	2%	2%
Turn Type	Split			Split			Perm					
Protected Phases	4	4		8	8		1 Onn	2				
Permitted Phases				Ŭ	Ū		2	-				
Actuated Green, G (s)		10.8			9.7		-	19.8				
Effective Green, g (s)		10.8			9.7			19.8				
Actuated g/C Ratio		0.21			0.19			0.38				
Clearance Time (s)		4.0			4.0			4.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		355			309			524				
v/s Ratio Prot		c0.16			c0.13			021				
v/s Ratio Perm		00.10			00.10			0.16				
v/c Ratio		0.75			0.68			0.43				
Uniform Delay, d1		19.5			19.8			12.1				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		8.8			5.8			0.6				
Delay (s)		28.3			25.6			12.7				
Level of Service		C			C			В				
Approach Delay (s)		28.3			25.6			12.7			0.0	
Approach LOS		С			С			В			A	
Intersection Summary												
HCM Average Control D	lolov		22.6			vel of S	anvico		С			
HCM Volume to Capacit			0.58				ervice		U			
Actuated Cycle Length (52.3		um of l	ost time	(c)		12.0			
Intersection Capacity Ut			52.5 47.5%			el of Sei			12.0 A			
Analysis Period (min)	mzauon		47.5%	1	CO Lev	50 30	vice		A			
Analysis Period (min)			15									

c Critical Lane Group

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Movement	EBL2	EBL	EBT	EBR	WBL	WBT		WBR2	NBL	NBT		NBR2
Lane Configurations		25	To			4	đ.		γ	÷	15	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00	1.00	0.88	
Frt		1.00	0.95			1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00			0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1760	1773			1787	1574		1719	1810	2707	
Flt Permitted		0.35	1.00			0.41	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		644	1773			771	1574		1719	1810	2707	
Volume (vph)	65	25	170	80	250	45	120	50	70	215	55	290
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	27	185	87	272	49	130	54	76	234	60	315
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	C
Lane Group Flow (vph)	0	98	259	0	0	321	184	0	76	234	375	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot	c	ustom	
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4		4				23	
Actuated Green, G (s)		34.4	34.4			34.4	34.4		10.3	20.0	48.3	
Effective Green, g (s)		34.4	34.4			34.4	34.4		10.3	20.0	48.3	
Actuated g/C Ratio		0.30	0.30			0.30	0.30		0.09	0.18	0.42	
Clearance Time (s)		4.0	4.0			4.0	4.0		4.0	4.0		
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		194	535			233	475		155	318	1147	
v/s Ratio Prot			0.15						0.04	c0.13		
v/s Ratio Perm		0.15				c0.42	0.12				0.14	
v/c Ratio		0.51	0.48			1.38	0.39		0.49	0.74	0.33	
Uniform Delay, d1		32.8	32.6			39.8	31.5		49.4	44.5	22.0	
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		2.1	0.7			194.6	0.5		2.4	8.6	0.2	
Delay (s)		34.9	33.2			234.4	32.0		51.8	53.1	22.1	
Level of Service		С	С			F	С		D	D	С	
Approach Delay (s)			33.7			160.6				36.0		
Approach LOS			С			F				D		
Intersection Summary												
HCM Average Control [Delay		119.4	H	ICM Le	vel of S	ervice		F			
HCM Volume to Capaci	ty ratio		1.14									
Actuated Cycle Length	(s)		114.0	S	um of I	ost time	e (s)		16.0			
Intersection Capacity U	tilizatior	า	94.7%	IC	CU Lev	el of Se	rvice		F			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2	
Lane Configurations		ž	个门			24			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			4.0			
Lane Util. Factor		1.00	0.95			0.97			
Frt		1.00	0.98			0.99			
Flt Protected		0.95	1.00			0.96			
Satd. Flow (prot)		1765	3384			3345			
Flt Permitted		0.95	1.00			0.88			
Satd. Flow (perm)		1765	3384			3075			
Volume (vph)	30	180	445	65	60	735	65	10	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	33	196	484	71	65	799	71	11	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	229	555	0	0	946	0	0	
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%	
Turn Type	Prot	Prot			Perm				
Protected Phases	1	1	6			3			
Permitted Phases					3				
Actuated Green, G (s)		19.3	29.0			24.3			
Effective Green, g (s)		19.3	29.0			24.3			
Actuated g/C Ratio		0.17	0.25			0.21			
Clearance Time (s)		4.0	4.0			4.0			
Vehicle Extension (s)		3.0	3.0			3.0			
Lane Grp Cap (vph)		299	861			655			
v/s Ratio Prot		c0.13	0.16						
v/s Ratio Perm						c0.31			
v/c Ratio		0.77	0.64			1.44			
Uniform Delay, d1		45.2	37.9			44.8			
Progression Factor		1.00	1.00			1.00			
Incremental Delay, d2		11.1	1.7			208.5			
Delay (s)		56.3	39.6			253.3			
Level of Service		E	D			F			
Approach Delay (s)			44.5			253.3			
Approach LOS			D			F			

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Barrio Logan CPU 40: Harbor Dr & 32n	d St					F	lorizor	Year			prover Plan: AM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ሳሳ	*5)r	44	7	H.	44	۴	7	44	۴
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1517	1687	3374	1509	1719	3438	1482	1719	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1517	1687	3374	1509	1719	3438	1482	1719	3438	1538
Volume (vph)	90	641	140	300	756	390	30	160	30	130	1040	60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	697	152	326	822	424	33	174	33	141	1130	65
RTOR Reduction (vph)	0	0	122	0	0	270	0	0	28	0	0	36
Lane Group Flow (vph)	98	697	30	326	822	154	33	174	5	141	1130	29
Confl. Bikes (#/hr)			3						16			
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		ustom	Prot		custom	Prot		Perm	Prot		ustom
Protected Phases	3	1426	15	13	1826		15	12		11 1 5	16 1 5	315
Permitted Phases			14			18			12			16
Actuated Green, G (s)	5.1	8.7	6.5	16.4	20.0	15.6	2.2	12.0	12.0	12.7	26.5	27.6
Effective Green, g (s)	5.1	8.7	6.5	16.4	20.0	15.6	2.2	12.0	12.0	12.7	26.5	27.6
Actuated g/C Ratio	0.06	0.11	0.08	0.20	0.24	0.19	0.03	0.15	0.15	0.16	0.32	0.34
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	107	366	121	338	825	288	46	504	217	267	1114	594
v/s Ratio Prot	0.06	c0.20	0.01	c0.19	0.24	0.40	0.02	0.05	0.00	c0.08	c0.33	0.01
v/s Ratio Perm	0.00	4.00	0.01	0.00	4 00	0.10	0.72	0.05	0.00	0.53	4.04	0.01
v/c Ratio	0.92	1.90		0.96 32.4	1.00	0.53		0.35	0.02		1.01	0.05 18.3
Uniform Delay, d1 Progression Factor	38.1	36.6	35.4	32.4	30.9	29.8 1.00	39.5 1.00	31.4	29.9	31.8	27.6 0.88	18.3
Incremental Delay, d2	60.4	417.1	1.1	39.2	30.2	1.00	41.5	0.4	0.0	1.8	30.2	
Delay (s)	98.5	417.1	36.5	71.6	61.1	31.7	81.0	31.8	29.9	40.3	54.5	0.0
Level of Service	90.5 F	400.0 F	30.5 D	71.0 E	E	51.7 C	61.0 F	51.0 C	29.9 C	40.3 D	04.0 D	20.9 C
Approach Delay (s)	Г	349.9	D	E	55.3	U	Г	38.3	U	D	51.8	C
Approach LOS		545.5 F			55.5 E			D			D	
Intersection Summary												
HCM Average Control D	elay		121.3	F	ICM Le	vel of S	ervice		F			
HCM Volume to Capacit			1.06									
Actuated Cycle Length (81.8	S	Sum of I	ost time	(s)		24.0			
Intersection Capacity Ut		n –	79.8%			el of Sei			D			
Analysis Period (min)			15									
c Critical Lane Group												

	≯	`	*	t	1	4	
		*)	•	*		
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		14		44	***		
ldeal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0		
Lane Util. Factor		1.00		0.95	0.91		
Frt		0.86		1.00	1.00		
Flt Protected		1.00		1.00	1.00		
Satd. Flow (prot)		1611		3539	5085		
Flt Permitted		1.00		1.00	1.00		
Satd. Flow (perm)		1611		3539	5085		
Volume (vph)	0	933	0	1100	417	0	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	1014	0	1196	453	0	
RTOR Reduction (vph)	0	27	0	0	0	0	
Lane Group Flow (vph)	0	987	0	1196	453	0	
Turn Type	c	ustom					
Protected Phases				246	6		
Permitted Phases		4					
Actuated Green, G (s)		44.5		68.5	16.0		
Effective Green, g (s)		44.5		68.5	16.0		
Actuated g/C Ratio		0.65		1.00	0.23		
Clearance Time (s)		4.0			4.0		
Vehicle Extension (s)		3.0			3.0		
Lane Grp Cap (vph)		1047		3539	1188		
v/s Ratio Prot				c0.34	0.09		
v/s Ratio Perm		c0.61					
v/c Ratio		0.94		0.34	0.38		
Uniform Delay, d1		10.8		0.0	22.1		
Progression Factor		1.00		1.00	1.00		
Incremental Delay, d2		15.8		0.1	0.9		
Delay (s)		26.6		0.1	23.0		
Level of Service		C		A	C		
Approach Delay (s)	26.6	2		0.1	23.0		
Approach LOS	С			A	С		
Intersection Summary							
HCM Average Control D	elay		14.1	H	ICM Lev	el of Service	В
HCM Volume to Capacit	y ratio		0.76				
Actuated Cycle Length (s)		68.5	S	Sum of le	ost time (s)	4.0
Intersection Capacity Uti	lization	1	72.5%	IC	CU Leve	el of Service	С

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Synchro 6 Report 3/4/2011

Barrio Logan CPU 2: National Ave & 16	th St						1011201	rear		iming P	prover lan: PN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ক্র			4.			et.			1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.99			0.99			0.99			0.96	
Flt Protected		0.99			1.00			0.97			0.97	
Satd. Flow (prot)		1817			1846			1782			1706	
Flt Permitted		0.85			1.00			0.80			0.76	
Satd. Flow (perm)		1566			1842			1461			1330	
Volume (vph)	91	347	31	3	458	25	61	41	7	125	25	70
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	377	34	3	498	27	66	45	8	136	27	76
RTOR Reduction (vph)	0	4	0	0	3	0	0	4	0	0	25	0
Lane Group Flow (vph)	0	506	0	0	525	0	0	115	0	0	214	0
Confl. Peds. (#/hr)	27		37	37		27	14		10	10		14
Confl. Bikes (#/hr)			1			3			3			1
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.1			18.1			11.6			11.6	
Effective Green, g (s)		18.1			18.1			11.6			11.6	
Actuated g/C Ratio		0.48			0.48			0.31			0.31	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		752			884			450			409	
v/s Ratio Prot												
v/s Ratio Perm		c0.32			0.28			0.08			c0.16	
v/c Ratio		0.67			0.59			0.26			0.52	
Uniform Delay, d1		7.5			7.1			9.8			10.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.4			1.1			0.3			1.2	
Delay (s)		9.9			8.2			10.1			12.0	
Level of Service		А			А			В			В	
Approach Delay (s)		9.9			8.2			10.1			12.0	
Approach LOS		А			A			В			В	
Intersection Summary												
HCM Average Control D	elay		9.6	H	ICM Le	vel of S	ervice		А			
HCM Volume to Capacit			0.61									
Actuated Cycle Length (37.7	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Uti			77.1%	10	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												_

	bee St	_	t	•	6	1	
	EBL	EDT			CDI	000	
Movement		EBT	WBT	WBR	SBL	SBR	
Lane Configurations	1000	44	4%	1000	7	7	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00	
Frt Fit Destaute I	1.00	1.00	0.98		1.00	0.85	
Flt Protected	0.95	1.00	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	3477		1770	1583	
Flt Permitted	0.29	1.00	1.00		0.95	1.00	
Satd. Flow (perm)	547	3539	3477		1770	1583	
Volume (vph)	65	1945	750	100	90	70	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	71	2114	815	109	98	76	
RTOR Reduction (vph)	0	0	11	0	0	65	
Lane Group Flow (vph)	71	2114	913	0	98	11	
Turn Type	Perm					Perm	
Protected Phases		4	8		6		
Permitted Phases	4					6	
Actuated Green, G (s)	48.4	48.4	48.4		9.4	9.4	
Effective Green, g (s)	48.4	48.4	48.4		9.4	9.4	
Actuated g/C Ratio	0.74	0.74	0.74		0.14	0.14	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	2603	2558		253	226	
v/s Ratio Prot	102	c0.60	0.26		c0.06		
v/s Ratio Perm	0.13	00.00	0.20		00.00	0.01	
v/c Ratio	0.18	0.81	0.36		0.39	0.05	
Uniform Delay, d1	2.6	5.7	3.1		25.6	24.3	
Progression Factor	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.0	0.1		1.0	0.1	
Delay (s)	2.9	7.7	3.2		26.6	24.4	
Level of Service	2.3 A	7.7 A	3.2 A		20.0 C	24.4 C	
Approach Delay (s)	~	7.6	3.2		25.6	U	
Approach LOS		7.0 A	3.2 A		20.0 C		
Intersection Summary							
HCM Average Control D)elav		7.3	н	CMIe	vel of Sei	rvice A
HCM Volume to Capacit			0.74				
Actuated Cycle Length (65.8	9	um of l	ost time ((s) 8.0
Intersection Capacity Ut			65.4%			el of Serv	X-7
Analysis Period (min)			15				

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7: Logan Ave & Bear	ubicy	01								g .	Plan: PN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		Ţ.		76	4			et.			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	
Frt		0.98		1.00	1.00			0.91			0.99	
Flt Protected		1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)		1834		1770	1863			1664			1782	
Flt Permitted		1.00		0.95	1.00			0.98			0.97	
Satd. Flow (perm)		1834		1770	1863			1664			1782	
Volume (vph)	0	532	70	40	160	0	56	0	123	272	109	39
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	578	76	43	174	0	61	0	134	296	118	42
RTOR Reduction (vph)	0	5	0	0	0	0	0	94	0	0	4	0
Lane Group Flow (vph)	0	649	0	43	174	0	0	101	0	0	452	0
Turn Type				Prot			Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)		30.7		3.7	38.4			9.9			18.5	
Effective Green, g (s)		30.7		3.7	38.4			9.9			18.5	
Actuated g/C Ratio		0.39		0.05	0.49			0.13			0.23	
Clearance Time (s)		4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		715		83	908			209			418	
v/s Ratio Prot		c0.35		c0.02	0.09			c0.06			c0.25	
v/s Ratio Perm												
v/c Ratio		0.91		0.52	0.19			0.49			1.08	
Uniform Delay, d1		22.7		36.7	11.4			32.1			30.2	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		15.2		5.4	0.1			1.8			67.7	
Delay (s)		38.0		42.0	11.5			33.9			97.9	
Level of Service		D		D	В			С			F	
Approach Delay (s)		38.0			17.6			33.9			97.9	
Approach LOS		D			В			С			F	
Intersection Summary	-											
HCM Average Control De			52.5	H	ICM Le	vel of Se	ervice		D			
HCM Volume to Capacity			0.87									
Actuated Cycle Length (s			78.8			ost time	· /		16.0			
Intersection Capacity Util	ization		77.1%	10	CU Lev	el of Ser	rvice		D			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	Ť4		Υ.	To			e la			1.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.98			1.00	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.97			0.90			0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.97	
Satd. Flow (prot)	1751	1862		1759	1799			1650			1781	
Flt Permitted	0.39	1.00		0.20	1.00			0.98			0.71	
Satd. Flow (perm)	715	1862		370	1799			1623			1300	
Volume (vph)	19	635	2	113	358	77	9	43	132	188	83	11
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	690	2	123	389	84	10	47	143	204	90	12
RTOR Reduction (vph)	0	0	0	0	12	0	0	92	0	0	2	C
Lane Group Flow (vph)	21	692	0	123	461	0	0	108	0	0	304	0
Confl. Peds. (#/hr)	15		16	16		15	38		11	11		38
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	23.1	23.1		23.1	23.1		_	17.0			17.0	
Effective Green, g (s)	23.1	23.1		23.1	23.1			17.0			17.0	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.35			0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	343	894		178	864			574			459	
v/s Ratio Prot	010	c0.37			0.26			014			100	
v/s Ratio Perm	0.03	00.01		0.33	0.20			0.07			c0.23	
v/c Ratio	0.06	0.77		0.69	0.53			0.19			0.66	
Uniform Delay, d1	6.7	10.3		9.7	8.7			10.8			13.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	4.2		11.0	0.6			0.2			3.6	
Delay (s)	6.8	14.6		20.7	9.4			10.9			16.7	
Level of Service	A	В		C	A			B			B	
Approach Delay (s)		14.3		Ŭ	11.7			10.9			16.7	
Approach LOS		B			В			B			B	
Intersection Summary												
HCM Average Control D	Delav		13.5	F	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.73									
Actuated Cycle Length (48.1		Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut		1	80.6%			el of Sei			D			
Analysis Period (min)			15									

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Synchro 6 Report 3/4/2011

Barrio Logan CPU	Horizon Year Alt 2 with Improvements
11: Harbor Dr & Beardsley St	Timing Plan: PM Peak
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Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		ሳቀ	作る			7		
Sign Control		Free	Free		Stop	· ·		
Grade		0%	0%		0%			
Volume (veh/h)	0	1950	820	20	0	70		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	0	2120	891	22	0	76		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type				F	Raised			
Median storage veh)					0			
Upstream signal (ft)		661	658					
pX, platoon unblocked	0.89				0.38	0.89		
vC, conflicting volume	913				1962	457		
vC1, stage 1 conf vol					902			
vC2, stage 2 conf vol					1060			
vCu, unblocked vol	781				1049	269		
tC, single (s)	4.3				6.8	6.9		
tC, 2 stage (s)					5.8			
tF (s)	2.3				3.5	3.3		
p0 queue free %	100				100	88		
cM capacity (veh/h)	697				149	650		
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1			
Volume Total	1060	1060	594	319	76			
Volume Left	0	0	0	0	0			
Volume Right	0	0	0	22	76			
cSH	1700	1700	1700	1700	650			
Volume to Capacity	0.62	0.62	0.35	0.19	0.12			
Queue Length 95th (ft)	0	0	0	0	10			
Control Delay (s)	0.0	0.0	0.0	0.0	11.3			
Lane LOS					В			
Approach Delay (s)	0.0		0.0		11.3			
Approach LOS					В			
Intersection Summary								
Average Delay			0.3					
Intersection Capacity Ut	ilization		57.2%	IC	CU Leve	el of Service	В	
Analysis Period (min)			15					
, /								

Barrio Logan CPU 13: Logan Ave & Ce	esar E.	Chave	ez Pkv	vy		ŀ	Horizor	n Year			prover Plan: PM	
	≯	-	7	4	+	•	1	t	1	1	ţ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	₽	7*	74	t	7	45	44	٣	7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1758	1863	1539	1770	1863	1545	1530	3059	1315	1530	3018	
Flt Permitted	0.54	1.00	1.00	0.09	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	992	1863	1539	171	1863	1545	1530	3059	1315	1530	3018	
Volume (vph)	130	450	230	100	350	90	140	506	700	114	684	51
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	489	250	109	380	98	152	550	761	124	743	55
RTOR Reduction (vph)	0	0	158	0	0	56	0	0	96	0	5	0
Lane Group Flow (vph)	141	489	92	109	380	42	152	550	665	124	793	0
Confl. Peds. (#/hr)	10		13	13		10			27			27
Confl. Bikes (#/hr)			4			2			3			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Prot	(custom	Prot		
Protected Phases		4			8		5	2	3	1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)	30.5	30.5	30.5	43.6	43.6	43.6	14.0	36.1	45.2	11.0	33.1	
Effective Green, g (s)	30.5	30.5	30.5	43.6	43.6	43.6	14.0	36.1	45.2	11.0	33.1	
Actuated g/C Ratio	0.30	0.30	0.30	0.42	0.42	0.42	0.14	0.35	0.44	0.11	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	295	553	457	73	791	656	209	1075	630	164	973	
v/s Ratio Prot		0.26			0.20		c0.10	0.18	c0.09	0.08	0.26	
v/s Ratio Perm	0.14		0.06	c0.64		0.03			0.41			
v/c Ratio	0.48	0.88	0.20	1.49	0.48	0.06	0.73	0.51	1.06	0.76	0.81	
Uniform Delay, d1	29.6	34.4	27.0	29.6	21.4	17.5	42.5	26.3	28.8	44.5	32.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	15.5	0.2	280.9	0.5	0.0	11.9	0.4	51.3	17.9	5.3	
Delay (s)	30.8	49.9	27.2	310.4	21.8	17.5	54.4	26.7	80.0	62.4	37.3	
Level of Service	С	D	С	F	С	В	D	С	F	E	D	
Approach Delay (s)		40.4			74.7			57.3			40.7	
Approach LOS		D			E			E			D	
Intersection Summary												
HCM Average Control E	Delay		52.1	H	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci	ty ratio		1.26									
Actuated Cycle Length	(s)		102.7	S	Sum of I	ost time	e (s)		12.0			
Intersection Capacity Ut	ilization		86.3%	10	CU Lev	el of Se	rvice		E			
Analysis Period (min)			15									
c Critical Lane Group												

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	7	÷.	7*	76	4	7	H.	作品	٦v	÷	7"	
Volume (vph)	300	400	290	110	270	275	120	1000	120	550	410	
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		Perm	
Protected Phases		4			8			2		6		
Permitted Phases	4		4	8		8	2		6		6	
Detector Phases	4	4	4	8	8	8	2	2	6	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0	
Total Split (%)			42.5%									
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?	Non-	Non-	Non-	Non-	None	Non-	C Mi-	C Min	C Mi-	C Mi-	C Mir	
Recall Mode Act Effct Green (s)	None 30.0	None 30.0	None 30.0	None 30.0	None 30.0	None 30.0	42.0	C-Min 42.0	42.0	42.0	42.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	42.0	42.0	42.0	42.0	42.0	
v/c Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.52	0.52	1.07	0.52	0.52	
Control Delay	76.7	25.2	6.6	31.8	20.9	17.2	17.7	14.0		20.1	3.9	
Queue Delay	16.8	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	7.5	0.4	
Total Delay	93.5	25.2	6.6	31.8	20.9	17.3	17.7	14.4	129.6	27.6	4.3	
LOS	55.5 F	23.2 C	0.0 A	51.0 C	20.3 C	B	B	B	123.0 F	27.0 C	4.5 A	
Approach Delay		40.4		5	21.2	2	5	14.7		30.0		
Approach LOS		D			C			B		C		
Intersection Summary		_								Ū		
Cycle Length: 80												
Actuated Cycle Length:												
Offset: 77 (96%), Refe	renced to	o phase	2:NBTI	_ and 6	SBTL,	Start of	Green					
Natural Cycle: 80												
Control Type: Actuated		nated										
Maximum v/c Ratio: 1.	•••											
ntersection Signal Dela					ntersec							
Intersection Capacity U Analysis Period (min) 1		1 81.6%		1	CU Lev	el of Se	rvice D					

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46 s	34 s	
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46 s	34 s	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	4	*5	Ψ.	4	7	Υç	4 b		7	4	Ħ
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3179		1530	1610	1369
Flt Permitted	0.47	1.00	1.00	0.31	1.00	1.00	0.28	1.00		0.14	1.00	1.00
Satd. Flow (perm)	875	1863	1583	572	1863	1583	480	3179		231	1610	1369
Volume (vph)	300	400	290	110	270	275	120	1000	100	120	550	410
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	435	315	120	293	299	130	1087	109	130	598	446
RTOR Reduction (vph)	0	0	154	0	0	43	0	10	0	0	0	189
Lane Group Flow (vph)	326	435	161	120	293	256	130	1187	0	130	598	257
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Actuated Green, G (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0		42.0	42.0	42.0
Effective Green, g (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0		42.0	42.0	42.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.52	0.52		0.52	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	328	699	594	215	699	594	252	1669		121	845	719
v/s Ratio Prot		0.23			0.16			0.37			0.37	
v/s Ratio Perm	c0.37		0.10	0.21		0.16	0.27			c0.56		0.19
v/c Ratio	0.99	0.62	0.27	0.56	0.42	0.43	0.52	0.71		1.07	0.71	0.36
Uniform Delay, d1	24.9	20.4	17.4	19.8	18.5	18.6	12.4	14.4		19.0	14.4	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.76	0.79		1.00	1.00	1.00
Incremental Delay, d2	47.8	1.7	0.2	3.1	0.4	0.5	6.9	2.4		103.2	5.0	1.4
Delay (s)	72.7	22.1	17.6	22.9	18.9	19.1	16.4	13.9		122.2	19.3	12.5
Level of Service	E	С	В	С	В	В	В	В		F	В	В
Approach Delay (s)		36.1			19.7			14.1			28.1	
Approach LOS		D			В			В			С	
Intersection Summary												
HCM Average Control D			24.4	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci			1.04									
Actuated Cycle Length (80.0			ost time	· · /		8.0			
Intersection Capacity Ut	ilization		81.6%	10	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
Critical Lane Group												

c Critical Lane Group

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Barrio Logan CPU 15: Newton Ave &	Cesar I	E. Cha	vez Pł	wy		ł	Horizo	n Year	Alt 2 with Improvements Timing Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	7	Ţ,	٣	To	7	41.	H.	þ	
Volume (vph)	120	130	90	70	40	790	170	910	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Vinimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Fotal Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0	
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
_ead/Lag									
_ead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	14.7	14.7	14.7	14.7	57.3	57.3	57.3	57.3	
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.72	0.72	0.72	0.72	
//c Ratio	0.69	0.61	0.52	0.53	0.40	0.40	0.61	0.87	
Control Delay	48.3	31.2	37.9	16.6	17.7	4.3	16.7	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	
Fotal Delay	48.3	31.2	37.9	16.6	17.7	4.4	16.7	17.9	
LOS	D	С	D	В	В	A	В	В	
Approach Delay		37.6		23.2		5.0		17.7	
Approach LOS		D		С		A		В	
ntersection Summary									
Cycle Length: 80									
Actuated Cycle Length	n: 80								
Offset: 2 (3%), Refere		hase 2:	NBTL a	ind 6:SE	3TL, Sta	art of G	reen		
Vatural Cycle: 90					,				
Control Type: Actuated	d-Coordir	nated							
Aaximum v/c Ratio: 0									
ntersection Signal De				1	ntersec	tion LO	S: B		
ntersection Capacity I		1 86.5%			CU Lev				
Analysis Period (min)									

Splits and Phases:	15: Newton Ave & Cesar E. Chavez F	Pkwy
<↑ ₀2		♣ _{ø4}
49 s		31 s
- K		4

↑ ₀₂	- ↓ ₀4
49 s	31 s
↓ _{ø6}	* ø8
49 s	31 s

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Lane Configurations deal Flow (vphpl) 1 Fotal Lost time (s) Lane Util. Factor Frt Fit Protected Satd. Flow (prot) 1 Fit Permitted	EBL 1900 4.0 1.00 1.00 0.95	EBT 1900 4.0 1.00	EBR 1900	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
deal Flow (vphpl) 1 Fotal Lost time (s) ane Util. Factor Frt Fit Protected Satd. Flow (prot) 1 Fit Permitted	1900 4.0 1.00 1.00	1900 4.0 1.00	1900		T.							
Fotal Lost time (s) ane Util. Factor Frt Fit Protected Satd. Flow (prot) 1 Fit Permitted	4.0 1.00 1.00	1900 4.0 1.00	1900	1900			16	1		1	T.	
Lane Util. Factor Frt FIt Protected Satd. Flow (prot) FIt Permitted	1.00 1.00	4.0 1.00			1900	1900	1900	1900	1900	1900	1900	1900
Frt Flt Protected Satd. Flow (prot) 1 Flt Permitted	1.00			4.0	4.0		4.0	4.0		4.0	4.0	
Fit Protected 0 Satd. Flow (prot) 1 Fit Permitted 0				1.00	1.00		1.00	0.95		1.00	1.00	
Satd. Flow (prot) 1 Flt Permitted	0.95	0.95		1.00	0.90		1.00	0.99		1.00	0.99	
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
	1770	1765		1770	1681		1612	3189		1612	1681	
	0.41	1.00		0.41	1.00		0.15	1.00		0.29	1.00	
Satd. Flow (perm)	769	1765		769	1681		248	3189		484	1681	
/olume (vph)	120	130	70	90	70	130	40	790	60	170	910	60
	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	130	141	76	98	76	141	43	859	65	185	989	6
RTOR Reduction (vph)	0	30	0	0	103	0	0	5	0	0	2	
ane Group Flow (vph)	130	187	0	98	114	0	43	919	0	185	1052	(
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	129
	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
	14.7	14.7		14.7	14.7		57.3	57.3		57.3	57.3	
	14.7	14.7		14.7	14.7		57.3	57.3		57.3	57.3	
	0.18	0.18		0.18	0.18		0.72	0.72		0.72	0.72	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
/ehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
ane Grp Cap (vph)	141	324		141	309		178	2284		347	1204	
//s Ratio Prot		0.11			0.07			0.29			c0.63	
	0.17	0		0.13	0.01		0.17	0.20		0.38	00.00	
	0.92	0.58		0.70	0.37		0.24	0.40		0.53	0.87	
	32.1	29.8		30.6	28.6		3.9	4.5		5.2	8.6	
	1.00	1.00		1.00	1.00		0.67	0.71		0.73	0.73	
	52.6	2.5		13.8	0.7		3.0	0.5		5.1	8.0	
	84.7	32.3		44.4	29.3		5.7	3.7		8.9	14.2	
evel of Service	F	С		D	С		А	А		A	В	
Approach Delay (s)		51.9			34.0			3.8			13.4	
Approach LOS		D			С			А			В	
ntersection Summary												
HCM Average Control Del	lay		17.1	H	ICM Le	vel of Se	ervice		В			
HCM Volume to Capacity	ratio		0.88									
Actuated Cycle Length (s))		80.0	S	Sum of I	ost time	(S)		8.0			

c Critical Lane Group

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16: Main St & Cesa	ar E. Ch	navez l	Pkwy						Timing Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	7	ţ,	34	Ŷ	7	41.	14	ĥ	
Volume (vph)	120	290	70	250	85	640	250	540	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0	
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	20.3	20.3	20.3	20.3	51.7	51.7	51.7	51.7	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.65	0.65	0.65	0.65	
v/c Ratio	0.59	0.73	0.43	0.58	0.79	0.46	1.00	0.88	
Control Delay	35.9	35.4	30.5	30.0	64.3	8.4	57.9	18.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.2	0.0	6.4	
Total Delay	35.9	35.4	30.5	30.0	64.3	9.6	57.9	24.6	
LOS	D	D	С	С	E	А	E	С	
Approach Delay		35.5		30.1		14.7		32.4	
Approach LOS		D		С		В		С	
ntersection Summary									
Cycle Length: 80									
Actuated Cycle Length	: 80								
Offset: 3 (4%), Referen		hase 2:	NBTL a	ind 6:SE	3TL, Sta	art of Gr	reen		
Vatural Cycle: 90									
Control Type: Actuated	d-Coordii	nated							
/aximum v/c Ratio: 1.	00								
ntersection Signal Del	ay: 26.8			1	ntersect	tion LOS	S: C		
ntersection Capacity L		1 88.3%		1	CU Lev	el of Se	rvice E		
Analysis Period (min)									

Splits and Phases:	16: Main St & Cesar E. Chavez Pkwy	
↑ ø2		<u> _</u> ₀4
49 s		31 s
↓ _{ø6}		
49 s		31 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Movement Lane Configurations			EDK	VVDL V			INDL M		INDK	JDL	-	JDF
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1 900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	1900	4.0	4.0	1900	4.0	4.0	1900	4.0	4.0	1900
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1836		1750	1863		1556	2974		1542	1529	
Flt Permitted	0.40	1.00		0.28	1.00		0.18	1.00		0.28	1.00	
Satd. Flow (perm)	735	1836		519	1863		296	2974		458	1529	
Volume (vph)	120	290	25	70	250	270	85	640	180	250	540	280
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	315	27	76	272	293	92	696	196	272	587	304
RTOR Reduction (vph)	0	4	0	0	0	0	0	26	0	0	19	00
Lane Group Flow (vph)	130	338	0	76	272	0	92	866	0	272	872	C
Confl. Peds. (#/hr)	19	000	24	24		19	16	000	20	20	0.2	16
Confl. Bikes (#/hr)			1			2			20	20		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	20.3	20.3		20.3	20.3		51.7	51.7		51.7	51.7	
Effective Green, g (s)	20.3	20.3		20.3	20.3		51.7	51.7		51.7	51.7	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.65	0.65		0.65	0.65	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	187	466		132	473		191	1922		296	988	
v/s Ratio Prot		c0.18			0.15			0.29			0.57	
v/s Ratio Perm	0.18			0.15			0.31			c0.59		
v/c Ratio	0.70	0.72		0.58	0.58		0.48	0.45		0.92	0.88	
Uniform Delay, d1	27.0	27.3		26.1	26.1		7.3	7.1		12.3	11.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.68	0.65	
Incremental Delay, d2	10.7	5.5		6.0	1.7		8.5	0.8		22.7	6.5	
Delay (s)	37.7	32.8		32.0	27.8		15.7	7.8		31.1	14.1	
Level of Service	D	С		С	С		В	A		С	В	
Approach Delay (s)		34.2			28.7			8.6			18.1	
Approach LOS		С			С			А			В	
Intersection Summary												
HCM Average Control E		18.7	H	ICM Le	vel of S	ervice		В				
HCM Volume to Capaci		0.86										
Actuated Cycle Length (80.0	30.0 Sum of lost time (s) 8.0								
Intersection Capacity Utilization			00.00/		0111				-			
	ilization		88.3%	10	CU Lev	el of Se	rvice		E			
Intersection Capacity Ut Analysis Period (min)	ilization		88.3%	I	CU Lev	el of Se	rvice		E			

c Critical Lane Group

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Barrio Logan CPU Horizon Year Al 17: Harbor Dr & Cesar E. Chavez Pkwy	Horizon Year Alt 2 with Impro Timing Plan:					
	۲	1	ţ	~		
Movement EBL EBT EBR WBL WBT WBR NBL NBT N	NBR	SBL	SBT	SBR		
Lane Configurations	p*		4	ţ.		
	900	1900	1900	1900		
Total Lost time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0	4.0		4.0	4.0		
Lane Util. Factor 0.97 0.95 1.00 0.95 1.00 1.00 1.00 1	1.00		1.00	1.00		
Frpb, ped/bikes 1.00 1.00 1.00 1.00 0.97 1.00 1.00 (0.98		1.00	0.99		
Flpb, ped/bikes 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	1.00		1.00	1.00		
	0.85		1.00	0.85		
	1.00		0.97	1.00		
Satd. Flow (prot) 3183 3265 1421 3282 1426 1363 1439 1	109		1596	1383		
	1.00		0.84	1.00		
	109		1381	1383		
Volume (vph) 590 1500 40 30 467 43 50 63	35	33	30	314		
	0.92	0.92	0.92	0.92		
Adj. Flow (vph) 641 1630 43 33 508 47 54 68	38	36	33	341		
RTOR Reduction (vph) 0 1 0 0 0 32 0 0	33	0	0	106		
Lane Group Flow (vph) 641 1672 0 33 508 15 54 68	5	0	69	235		
Confl. Peds. (#/hr) 11 6 4	1	1		4		
Confl. Bikes (#/hr) 9 14	3					
	43%	16%	16%	16%		
	erm	Perm		om+ov		
Protected Phases 3 14 2 6 13 18 2 6 12			1 5 16	3		
Permitted Phases 18 2 6 12		1 5 16		1516		
	13.7		22.1	48.1		
	13.7		22.1	48.1		
0	0.12		0.20	0.43		
Clearance Time (s) 4.0 4.0 4.0 4.0	4.0			4.0		
Vehicle Extension (s) 3.0 3.0 3.0 3.0	3.0			3.0		
	136		273	646		
v/s Ratio Prot c0.20 c0.51 0.02 0.15 0.05				c0.08		
	0.00		0.05	0.08		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 (0.03		0.25	0.36		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.00 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 45.3	43.1		37.8	21.4		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.38 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 4 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00	43.1 1.00		37.8 1.26	21.4 0.73		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.38 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 45.1 Progression Factor 1.00	43.1 1.00 0.1		37.8 1.26 0.5	21.4 0.73 0.3		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.43 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 4 Progression Factor 1.00 <t< td=""><td>43.1 1.00 0.1 43.2</td><td></td><td>37.8 1.26 0.5 48.0</td><td>21.4 0.73 0.3 15.9</td></t<>	43.1 1.00 0.1 43.2		37.8 1.26 0.5 48.0	21.4 0.73 0.3 15.9		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.38 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 45.1 Progression Factor 1.00	43.1 1.00 0.1		37.8 1.26 0.5 48.0 D	21.4 0.73 0.3		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.38 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 45.1 Progression Factor 1.00	43.1 1.00 0.1 43.2		37.8 1.26 0.5 48.0 D 21.3	21.4 0.73 0.3 15.9		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.38 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 45.1 Progression Factor 1.00	43.1 1.00 0.1 43.2		37.8 1.26 0.5 48.0 D	21.4 0.73 0.3 15.9		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.38 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 45.1 Progression Factor 1.00	43.1 1.00 0.1 43.2		37.8 1.26 0.5 48.0 D 21.3	21.4 0.73 0.3 15.9		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.38 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 45.1 Progression Factor 1.00	43.1 1.00 0.1 43.2		37.8 1.26 0.5 48.0 D 21.3	21.4 0.73 0.3 15.9		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.38 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 45.1 Progression Factor 1.00	43.1 1.00 0.1 43.2 D		37.8 1.26 0.5 48.0 D 21.3	21.4 0.73 0.3 15.9		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.38 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 45.1 Progression Factor 1.00 1.41 1 <t< td=""><td>43.1 1.00 0.1 43.2 D</td><td></td><td>37.8 1.26 0.5 48.0 D 21.3</td><td>21.4 0.73 0.3 15.9</td></t<>	43.1 1.00 0.1 43.2 D		37.8 1.26 0.5 48.0 D 21.3	21.4 0.73 0.3 15.9		
v/c Ratio 0.86 0.98 0.80 0.49 0.03 0.43 0.38 0.38 Uniform Delay, d1 41.1 26.1 53.9 30.7 26.2 45.3 45.1 4 Progression Factor 1.00 <t< td=""><td>43.1 1.00 0.1 43.2 D</td><td></td><td>37.8 1.26 0.5 48.0 D 21.3</td><td>21.4 0.73 0.3 15.9</td></t<>	43.1 1.00 0.1 43.2 D		37.8 1.26 0.5 48.0 D 21.3	21.4 0.73 0.3 15.9		

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	EBR 1900 0.92 217 0 0	WBL 1900 4.0 1.00 0.95 1770 0.25 461 167 0.92 182 0 182 0 182 8 23.7	↓ WBT 1900 4.0 1.00 0.94 1.00 1.00 1751 1.00 1751 81 0.92 88 38 109 8 23.7 23.7	 WBR 1900 1900 54 0.92 59 0 0 	NBL 1900 4.0 1.00 1.00 0.95 1770 0.52 978 230 0.92 250 0 250 Perm 233.7	↑ NBT 1900 4.0 1.00 1.00 1.00 1802 4.00 1802 443 0.92 443 0.92 422 605 2 33.7	NBR 1900 124 0.92 135 0 0	SBL 1900 4.0 1.00 1.00 0.95 1770 0.27 504 66 0.92 72 0 0 22 72 0 0 72 Perm	↓ SBT 1900 4.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 2.75 0.92 2.99 2 3.11 6 33.7	0
Image: height of the system 1900 4.0 1.00 0.93 1.00 1739 1.00 1739 251 0.92 273 45 445 23.7 23.7 0.36	1900 200 0.92 217 0	1900 4.0 1.00 0.95 1770 0.25 461 167 0.92 182 0 182 Perm 8 23.7	1900 4.0 1.00 0.94 1.00 1751 1.00 1751 81 0.92 88 38 109 88 38 109 88	1900 54 0.92 59 0	** 1900 4.0 1.00 0.95 1770 0.52 978 230 0.92 250 0 250 Perm 220	1900 4.0 1.00 0.97 1.00 1802 1.00 1802 443 0.92 482 12 605	1900 124 0.92 135 0	1900 4.0 1.00 0.95 1770 0.27 504 66 0.92 72 0 0 72 Perm 6	1900 4.0 1.00 0.99 1.00 1850 1.00 1850 275 0.92 299 2 311 6	1900 13 0.92 14 0
1900 4.0 1.00 0.93 1.00 1739 251 0.92 273 45 445 445 445 445 23.7 23.7 0.36	200 0.92 217 0	1900 4.0 1.00 0.95 1770 0.25 461 167 0.92 182 0 182 Perm 8 23.7	1900 4.0 1.00 0.94 1.00 1751 1.00 1751 81 0.92 88 38 109 8 8 8 23.7	54 0.92 59 0	1900 4.0 1.00 0.95 1770 0.52 978 230 0.92 250 0 250 0 250 Perm	1900 4.0 1.00 0.97 1.00 1802 1.00 1802 443 0.92 482 42 605 2	124 0.92 135 0	1900 4.0 1.00 0.95 1770 0.27 504 66 0.92 72 0 72 Perm	1900 4.0 1.00 0.99 1.00 1850 1.00 1850 275 0.92 299 2 311 6	13 0.92 14 0
4.0 1.00 0.93 1.00 1739 1.00 1739 251 0.92 273 45 445 445 4 23.7 23.7 0.36	200 0.92 217 0	4.0 1.00 0.95 1770 0.25 461 167 0.92 182 0 182 0 182 Perm 8 23.7	4.0 1.00 0.94 1.00 1751 1.00 1751 81 0.92 88 38 38 109 8 8 8 23.7	54 0.92 59 0	4.0 1.00 0.95 1770 0.52 978 230 0.92 250 0 250 Perm	4.0 1.00 0.97 1.00 1802 1.00 1802 443 0.92 482 12 605	124 0.92 135 0	4.0 1.00 0.95 1770 0.27 504 66 0.92 72 0 72 Perm	4.0 1.00 0.99 1.00 1850 1.00 1850 275 0.92 299 2 311 6	13 0.92 14 0
1.00 0.93 1.00 1739 1.00 1739 251 0.92 273 45 445 445 445 4 23.7 23.7 0.36	0.92 217 0	1.00 1.00 0.95 1770 0.25 461 167 0.92 182 0 182 Perm 8 23.7	1.00 0.94 1.00 1751 1.00 1751 81 0.92 88 38 109 8 8 23.7	0.92 59 0	1.00 1.00 0.95 1770 0.52 978 230 0.92 250 0 250 Perm	1.00 0.97 1.00 1802 1.00 1802 443 0.92 482 12 605	0.92 135 0	1.00 1.00 0.95 1770 0.27 504 66 0.92 72 0 72 Perm	1.00 0.99 1.00 1850 1.00 1850 275 0.92 299 2 311 6	0.92 14
0.93 1.00 1739 1.00 1739 251 0.92 273 45 445 445 445 4 23.7 23.7 0.36	0.92 217 0	1.00 0.95 1770 0.25 461 167 0.92 182 0 182 Perm 8 23.7	0.94 1.00 1751 1.00 1751 81 0.92 88 38 109 8 8 23.7	0.92 59 0	1.00 0.95 1770 0.52 978 230 0.92 250 0 250 Perm 22	0.97 1.00 1802 1.00 1802 443 0.92 482 12 605	0.92 135 0	1.00 0.95 1770 0.27 504 66 0.92 72 0 72 Perm	0.99 1.00 1850 1.00 1850 275 0.92 299 2 311 6	0.92 14 0
1.00 1739 1.00 1739 251 0.92 273 45 445 445 445 23.7 23.7 0.36	0.92 217 0	0.95 1770 0.25 461 167 0.92 182 0 182 Perm 8 23.7	1.00 1751 1.00 1751 81 0.92 88 38 109 8 8 23.7	0.92 59 0	0.95 1770 0.52 978 230 0.92 250 250 250 Perm	1.00 1802 1.00 1802 443 0.92 482 12 605	0.92 135 0	0.95 1770 0.27 504 66 0.92 72 0 72 Perm	1.00 1850 1.00 1850 275 0.92 299 2 311 6	0.92 14 0
1739 1.00 1739 251 0.92 273 45 445 445 445 23.7 23.7 0.36	0.92 217 0	1770 0.25 461 167 0.92 182 0 182 Perm 8 23.7	1751 1.00 1751 81 0.92 88 38 109 8 8 23.7	0.92 59 0	1770 0.52 978 230 0.92 250 0 250 Perm	1802 1.00 1802 443 0.92 482 12 605 2	0.92 135 0	1770 0.27 504 66 0.92 72 0 72 Perm	1850 1.00 1850 275 0.92 299 2 311 6	0.92 14 0
1.00 1739 251 0.92 273 45 445 445 445 23.7 23.7 0.36	0.92 217 0	0.25 461 167 0.92 182 0 182 Perm 8 23.7	1.00 1751 81 0.92 88 38 109 8 8 23.7	0.92 59 0	0.52 978 230 0.92 250 0 250 Perm 2	1.00 1802 443 0.92 482 12 605 2	0.92 135 0	0.27 504 66 0.92 72 0 72 Perm 6	1.00 1850 275 0.92 299 2 311 6	0.92 14 0
1739 251 0.92 273 45 445 445 445 23.7 23.7 0.36	0.92 217 0	461 167 0.92 182 0 182 Perm 8 23.7	1751 81 0.92 88 38 109 8 8 23.7	0.92 59 0	978 230 0.92 250 0 250 Perm 2	1802 443 0.92 482 12 605 2	0.92 135 0	504 66 0.92 72 0 72 Perm 6	1850 275 0.92 299 2 311 6	0.92 14 0
251 0.92 273 45 445 445 23.7 23.7 0.36	0.92 217 0	167 0.92 182 0 182 Perm 8 23.7	81 0.92 88 38 109 8 23.7	0.92 59 0	230 0.92 250 0 250 Perm 2	443 0.92 482 12 605 2	0.92 135 0	66 0.92 72 0 72 Perm	275 0.92 299 2 311 6	0.92 14 0
0.92 273 45 445 4 23.7 23.7 0.36	0.92 217 0	0.92 182 0 182 Perm 8 23.7	0.92 88 38 109 8 23.7	0.92 59 0	0.92 250 0 250 Perm 2	0.92 482 12 605 2	0.92 135 0	0.92 72 0 72 Perm	0.92 299 2 311 6	0.92 14 0
273 45 445 4 23.7 23.7 0.36	217 0	182 0 182 Perm 8 23.7	88 38 109 8 23.7	59 0	250 0 250 Perm 2	482 12 605 2	135 0	72 0 72 Perm 6	299 2 311 6	14 0
45 445 4 23.7 23.7 0.36	0	0 182 Perm 8 23.7	38 109 8 23.7	0	0 250 Perm 2	12 605 2	0	0 72 Perm 6	2 311 6	0
445 4 23.7 23.7 0.36		182 Perm 8 23.7	109 8 23.7		250 Perm 2	605 2		72 Perm 6	311 6	
4 23.7 23.7 0.36	0	Perm 8 23.7	8 23.7	0	Perm 2	2	0	Perm 6	6	0
23.7 23.7 0.36		8 23.7	23.7		2			6		
23.7 23.7 0.36		23.7	23.7					6		
23.7 0.36		23.7				33 7			22.7	
23.7 0.36					33.7	33.7		22.7	22.7	
0.36		23.7	237					33.7	JJ.1	
					33.7	33.7		33.7	33.7	
		0.36	0.36		0.52	0.52		0.52	0.52	
4.0		4.0	4.0		4.0	4.0		4.0	4.0	
3.0		3.0	3.0		3.0	3.0		3.0	3.0	
630		167	635		504	929		260	953	
0.26			0.06			c0.34			0.17	
		c0.39			0.26			0.14		
0.71		1.09	0.17		0.50	0.65		0.28	0.33	
17.9		20.9	14.2		10.3	11.6		9.0	9.2	
1.00		1.00	1.00		1.00	1.00		1.00	1.00	
3.6		95.7	0.1		3.5	3.5		2.6	0.9	
21.5		116.5	14.3		13.8	15.1		11.6	10.1	
С		F	В		В	В		В	В	
20.3			70.9			14.7			10.4	
С			E			В			В	
	24.0	H	ICM Le	vel of S	ervice		С			
	0.83									
	65.4	S	Sum of I	ost time	(s)		8.0			
	82.5%	10	CU Lev	el of Sei	vice		E			
	4.5									
	21.5 C 20.3 C	21.5 C 20.3 C 24.0 0.83 65.4 82.5%	21.5 116.5 C F 20.3 C 24.0 H 0.83 65.4 S 82.5% I	21.5 116.5 14.3 C F B 20.3 70.9 C E 24.0 HCM Lev 0.83 65.4 Sum of 16 82.5% ICU Levo	21.5 116.5 14.3 C F B 20.3 70.9 C C E C 24.0 HCM Level of St 0.83 65.4 Sum of lost time 82.5% ICU Level of Set	21.5 116.5 14.3 13.8 C F B B 20.3 70.9 C E 20.3 PO.9 C E 24.0 HCM Level of Service 0.83 65.4 Sum of lost time (s) 82.5%	21.5 116.5 14.3 13.8 15.1 C F B B B 20.3 70.9 14.7 C E B B 24.0 HCM Level of Service 0.83 - - 65.4 Sum of lost time (s) - 82.5% ICU Level of Service -	21.5 116.5 14.3 13.8 15.1 C F B B B 20.3 70.9 14.7 C C E B B	21.5 116.5 14.3 13.8 15.1 11.6 C F B B B B 20.3 70.9 14.7 C E B B	21.5 116.5 14.3 13.8 15.1 11.6 10.1 C F B B B B B 20.3 70.9 14.7 10.4 C E B B 24.0 HCM Level of Service C 0.83 65.4 Sum of lost time (s) 8.0

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT Lane Configurations \$\$top \$\$top <th>Configurations 1 <th1< th=""> 1 1 <</th1<></th> <th></th> <th>≯</th> <th>-</th> <th>\mathbf{r}</th> <th>1</th> <th>+</th> <th>•</th> <th>1</th> <th>t.</th> <th>1</th> <th>1</th> <th>Ŧ</th> <th>~</th>	Configurations 1 <th1< th=""> 1 1 <</th1<>		≯	-	\mathbf{r}	1	+	•	1	t.	1	1	Ŧ	~
Sign Control Stop	Control Stop Stop Stop Stop Stop Stop me (vph) 0 226 17 50 87 0 9 0 262 26 11 8 Hour Factor 0.92	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Sign Control Stop	Control Stop Stop Stop Stop Stop me (vph) 0 226 17 50 87 0 9 0 262 26 11 8 i Hour Factor 0.92	Lane Configurations		Ť.		λί.	4		Υç		P ^r		st.	
Peak Hour Factor 0.92	i. Hour Factor 0.92<	Sign Control					Stop			Stop				
Hourly flow rate (vph) 0 246 18 54 95 0 10 0 285 28 12 Direction, Lane # EB 1 WB 1 WB 2 NB 1 NB 2 SB 1 Volume Total (vph) 264 54 95 10 285 49 Volume Left (vph) 0 54 0 10 0 285 9 Volume Right (vph) 18 0 0 0 285 9 Value Left (vph) 0 54 0 10 0 28 Volume Right (vph) 18 0 0 0.23 0.41 0.04 Departure Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 Degree Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 Capacity (veh/h) 819 589 718 638 1112 677 Control Delay (s) 9.3 7.7 7.3 8.3 Approach LOS A A A A Intersection Summ	Instruction 0 246 18 54 95 0 10 0 285 28 12 9 stion, Lane # EB 1 WB 1 WB 2 NB 1 NB 2 SB 1 me Total (vph) 264 54 95 10 285 49 me Left (vph) 0 54 0 10 0 28 me Right (vph) 18 0 0 0 285 9 (s) -0.01 1.09 0.03 0.23 -0.41 0.04 utrue Headway (s) 4.3 5.9 4.9 52 3.2 4.9 ee Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 acity (veh/h) 819 589 718 638 1112 677 rol Delay (s) 9.3 7.7 7.3 8.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.49 0.3 0.7	Volume (vph)	0	226	17	50	87	0	9	0	262	26	11	8
Direction, Lane # EB 1 WB 1 WB 2 NB 1 NB 2 SB 1 Volume Total (vph) 264 54 95 10 285 49 Volume Total (vph) 0 54 95 10 285 49 Volume Right (vph) 18 0 0 0 285 9 Hadj (s) -0.01 1.09 0.03 0.23 -0.41 0.04 Departure Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 Degree Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 Capacity (veh/h) 819 589 718 638 1112 677 Control Delay (s) 9.3 7.7 7.3 8.3 Approach LOS A A Approach LOS A A A A A A Delay 8.2 8.2 5.2 5.2 5.2 5.3 5.3	String Lane # EB 1 WB 1 WB 2 NB 1 NB 2 SB 1 me Total (vph) 264 54 95 10 285 49 me Loft (vph) 0 54 0 10 0 28 me Right (vph) 18 0 0 285 9 (s) -0.01 1.09 0.03 0.23 -0.41 0.04 arture Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 ee Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 acity (veh/h) 819 589 718 638 1112 677 rol Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 oach LOS A A A A A section Summary y 8.2 12 12 y 8.2 12 4 4 4	Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Volume Total (vph) 264 54 95 10 285 49 Volume Left (vph) 0 54 0 10 0 28 Volume Right (vph) 18 0 0 0 285 9 Hadj (s) -0.01 1.09 0.03 0.23 -0.41 0.04 Departure Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 Degree Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 Capacity (veh/h) 819 589 718 638 1112 677 Control Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 Approach Delay (s) 9.3 7.7 7.3 8.3 Approach LOS A A A A Delay 8.2 5.2 5.2 5.2	me Total (vph) 264 54 95 10 285 49 me Left (vph) 0 54 0 10 0 28 me Right (vph) 18 0 0 0 285 9 (s) -0.01 1.09 0.03 0.23 -0.41 0.04 ruture Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 ee Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 acity (veh/h) 819 589 718 638 1112 677 rol Delay (s) 9.3 7.7 7.3 8.3 oach Delay (s) 9.3 7.7 7.3 8.3 oach LOS A A A A section Summary 8.2 11 12 y 8.2 12 13 14	Hourly flow rate (vph)	0	246	18	54	95	0	10	0	285	28	12	9
Volume Left (vph) 0 54 0 10 0 28 Volume Right (vph) 18 0 0 0 285 9 Hadj (s) -0.01 1.09 0.03 0.23 -0.41 0.04 Departure Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 Degree Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 Capacity (veh/h) 819 589 718 638 1112 677 Control Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 Approach LOS A A A A A Intersection Summary E E E E Delay 8.2 8.2 E E E	me Left (vph) 0 54 0 10 0 28 me Right (vph) 18 0 0 0 285 9 (s) -0.01 1.09 0.03 0.23 -0.41 0.04 urture Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 ee Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 acity (veh/h) 819 589 718 638 1112 677 rol Delay (s) 9.3 7.7 7.3 8.3 0.4 A oach Delay (s) 9.3 7.7 7.3 8.3 0.4 A section Summary	Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1						
Volume Right (vph) 18 0 0 0 285 9 Hadj (s) -0.01 1.09 0.03 0.23 -0.41 0.04 Departure Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 Degree Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 Capacity (veh/h) 819 589 718 638 1112 677 Control Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 Approach LOS A A A A A Intersection Summary 8.2 8.2 4.2 4.2	me Right (vph) 18 0 0 0 285 9 (s) -0.01 1.09 0.03 0.23 -0.41 0.04 arture Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 ee Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 acity (veh/h) 819 589 718 638 1112 677 rol Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 oach Delay (s) 9.3 7.7 7.3 8.3 oach LOS A A A A y 8.2 112 677 tlevel of Service A A A	Volume Total (vph)	264	54	95	10	285	49						
Hadj (s) -0.01 1.09 0.03 0.23 -0.41 0.04 Departure Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 Degree Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 Capacity (veh/h) 819 589 718 638 1112 677 Control Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 Approach Delay (s) 9.3 7.7 7.3 8.3 Approach LOS A A A Intersection Summary 8.2 5.2	(s) -0.01 1.09 0.03 0.23 -0.41 0.04 arture Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 ee Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 acity (veh/h) 819 589 718 638 1112 677 rol Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 oach Delay (s) 9.3 7.7 7.3 8.3 oach DS A A A section Summary 8.2 Level of Service A	Volume Left (vph)	0	54	0	10	0	28						
Departure Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 Degree Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 Capacity (veh/h) 819 589 718 638 1112 677 Control Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 Approach Delay (s) 9.3 7.7 7.3 8.3 Approach LOS A A A Intersection Summary 8.2 5.2 5.2	arture Headway (s) 4.3 5.9 4.9 5.2 3.2 4.9 ee Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 acity (veh/h) 819 589 718 638 1112 677 rol Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 oach Delay (s) 9.3 7.7 7.3 8.3 oach LOS A A A section Summary 8.2 Level of Service A	Volume Right (vph)	18	0	0	0	285	9						
Degree Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 Capacity (velv/h) 819 589 718 638 1112 677 Control Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 Approach Delay (s) 9.3 7.7 7.3 8.3 Approach LOS A A A Intersection Summary 200 8.2	ee Utilization, x 0.32 0.09 0.13 0.01 0.25 0.07 acity (veh/h) 819 589 718 638 1112 677 rol Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 oach Delay (s) 9.3 7.7 7.3 8.3 oach Delay (s) 9.3 7.7 7.3 8.3 oach LOS A A A A section Summary 8.2 4 Level of Service A A A	Hadj (s)	-0.01	1.09	0.03	0.23	-0.41	0.04						
Capacity (veh/h) 819 589 718 638 1112 677 Control Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 Approach Delay (s) 9.3 7.7 7.3 8.3 Approach LOS A A A A Intersection Summary 8.2 8.2 8.2	acity (veh/h) 819 589 718 638 1112 677 rol Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 oach Delay (s) 9.3 7.7 7.3 8.3 oach LOS A A A A section Summary y 8.2 y 8.2 Level of Service A		4.3	5.9	4.9	5.2	3.2	4.9						
Control Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 Approach Delay (s) 9.3 7.7 7.3 8.3 Approach LOS A A A A Intersection Summary 8.2 8.2 8.2	rol Delay (s) 9.3 8.3 7.4 8.2 7.3 8.3 oach Delay (s) 9.3 7.7 7.3 8.3 oach LOS A A A A A section Summary y 8.2 Level of Service A	Degree Utilization, x	0.32	0.09	0.13	0.01		0.07						
Approach Delay (s) 9.3 7.7 7.3 8.3 Approach LOS A A A A Intersection Summary 8.2 8.2 8.2	oach Delay (s) 9.3 7.7 7.3 8.3 oach LOS A A A A A section Summary y 8.2 I Level of Service A	Capacity (veh/h)	819	589	718	638	1112	677						
Approach LOS A A A A A A A Intersection Summary Delay 8.2	oach LOS A A A A section Summary y 8.2 I Level of Service A	Control Delay (s)	9.3	8.3	7.4	8.2	7.3	8.3						
Intersection Summary Delay 8.2	section Summary y 8.2 Level of Service A													
Delay 8.2	y 8.2 I Level of Service A	Approach LOS	A	A		A		А						
	Level of Service A	Intersection Summary												
		Delay			8.2									
HCM Level of Service A	section Canacity Utilization 43.8% ICUL evel of Service A	HCM Level of Service			А									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	仲弘			41.							7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0							4.0
Lane Util. Factor	1.00	0.95			0.95							1.00
Frpb, ped/bikes	1.00	1.00			1.00							1.00
Flpb, ped/bikes	1.00	1.00			1.00							1.00
Frt	1.00	1.00			0.99							0.86
Flt Protected	0.95	1.00			1.00							1.00
Satd. Flow (prot)	1543	3539			3507							1454
Flt Permitted	0.95	1.00			1.00							1.00
Satd. Flow (perm)	1543	3539			3507							1454
Volume (vph)	108	1500	0	0	598	39	0	0	0	0	0	56
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	1630	0	0	650	42	0	0	0	0	0	61
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	54
Lane Group Flow (vph)	117	1630	0	0	688	0	0	0	0	0	0	7
Confl. Peds. (#/hr)			8	8					2	2		
Confl. Bikes (#/hr)									4			ç
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot											Ove
Protected Phases	13	1826			1426							13
Permitted Phases												
Actuated Green, G (s)	10.9	64.9			46.0							10.9
Effective Green, q (s)	10.9	64.9			46.0							10.9
Actuated g/C Ratio	0.11	0.65			0.46							0.11
Clearance Time (s)	4.0											4.0
Vehicle Extension (s)	3.0											3.0
Lane Grp Cap (vph)	168	2297			1613							158
v/s Ratio Prot	0.08	c0.46			0.20							0.00
v/s Ratio Perm												
v/c Ratio	0.70	0.71			0.43							0.04
Uniform Delay, d1	43.0	11.4			18.1							39.9
Progression Factor	1.00	1.00			1.00							1.00
Incremental Delay, d2	11.9	1.0			0.2							0.1
Delay (s)	54.8	12.4			18.3							40.0
Level of Service	D	В			В							C
Approach Delay (s)		15.3			18.3			0.0			40.0	
Approach LOS		В			В			A			D	
Intersection Summary												
HCM Average Control E)elav		16.7		ICM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.71				011100		5			
Actuated Cycle Length			100.0	, c	Sum of L	ost time	e (s)		35.1			
Intersection Capacity Ut		1	44.8%			el of Sei			A			
Analysis Period (min)			15		00 2000				~			

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Synchro 6 Report 3/4/2011

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Synchro 6 Report 3/4/2011

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	44	1	1	Ta			4	ľ	002	4	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.94			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1597	1759			1762	1509		1734	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.84	1.00		0.76	1.00
Satd. Flow (perm)	1770	3539	1583	1597	1759			1489	1509		1343	1509
Volume (vph)	94	588	85	448	406	241	18	98	163	195	210	102
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	639	92	487	441	262	20	107	177	212	228	111
RTOR Reduction (vph)	0	0	70	0	20	0	0	0	117	0	0	73
Lane Group Flow (vph)	102	639	22	487	683	0	0	127	60	0	440	38
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		6
Actuated Green, G (s)	8.6	24.4	24.4	32.1	47.9			35.1	35.1		35.1	35.1
Effective Green, g (s)	8.6	24.4	24.4	32.1	47.9			35.1	35.1		35.1	35.1
Actuated g/C Ratio	0.08	0.24	0.24	0.31	0.46			0.34	0.34		0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.(
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	147	834	373	495	813			504	511		455	511
v/s Ratio Prot	0.06	0.18		c0.30	c0.39							
v/s Ratio Perm			0.01					0.09	0.04		c0.33	0.02
v/c Ratio	0.69	0.77	0.06	0.98	0.84			0.25	0.12		0.97	0.07
Uniform Delay, d1	46.2	36.9	30.7	35.5	24.5			24.8	23.6		33.7	23.2
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	13.3	4.2	0.1	36.0	7.6			0.3	0.1		33.4	0.1
Delay (s)	59.5	41.2	30.8	71.5	32.1			25.0	23.7		67.1	23.3
Level of Service	E	D	С	E	С			С	С		E	C
Approach Delay (s)		42.3			48.2			24.2			58.3	
Approach LOS		D			D			С			E	
Intersection Summary												
HCM Average Control D	elay		45.9	F	ICM Le	vel of S	ervice		D			
HCM Volume to Capacit	y ratio		0.92									
Actuated Cycle Length (s)		103.6	S	Sum of I	ost time	e (S)		8.0			
Intersection Capacity Uti			79.8%	10	CU Lev	el of Se	rvice		D			

Barrio Logan CPU 34: Boston Ave & 28	8th St					F	lorizor	n Year		vith Im Timing F		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ň	4	74	J.	To		Υç	† Ъ		7	441.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.92		1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1776	1509	1687	1634		1770	3495		1770	4798	
Flt Permitted	0.61	1.00	1.00	0.24	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1088	1776	1509	419	1634		1770	3495		1770	4798	
Volume (vph)	350	420	170	70	70	80	50	1100	100	270	580	350
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	457	185	76	76	87	54	1196	109	293	630	380
RTOR Reduction (vph)	0	0	122	0	46	0	0	8	0	0	116	0
Lane Group Flow (vph)	380	457	63	76	117	0	54	1297	0	293	894	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	31.0	31.0	31.0	31.0	31.0		5.6	33.8		14.0	42.2	
Effective Green, g (s)	31.0	31.0	31.0	31.0	31.0		5.6	33.8		14.0	42.2	
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34		0.06	0.37		0.15	0.46	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	371	606	515	143	558		109	1301		273	2230	
v/s Ratio Prot		0.26			0.07		0.03	c0.37		c0.17	0.19	
v/s Ratio Perm	c0.35		0.04	0.18								
v/c Ratio	1.02	0.75	0.12	0.53	0.21		0.50	1.00		1.07	0.40	
Uniform Delay, d1	29.9	26.5	20.6	24.1	21.2		41.2	28.5		38.4	16.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	53.1	5.3	0.1	3.8	0.2		3.5	24.3		75.3	0.5	
Delay (s)	83.0	31.8	20.7	27.8	21.4		44.7	52.8		113.7	16.5	
Level of Service	F	С	С	С	С		D	D		F	В	
Approach Delay (s)		48.8			23.4			52.4			38.4	
Approach LOS		D			С			D			D	
Intersection Summary												
HCM Average Control E			45.1	H	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci			1.02									
Actuated Cycle Length			90.8	S	Sum of I	ost time	(S)		12.0			
Intersection Capacity Ut	tilization		89.9%	10	CU Lev	el of Sei	rvice		E			
Analysis Period (min)			15									
c Critical Lane Group												

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Synchro 6 Report 3/4/2011

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Barrio Logan CPU <u>36: Harbor Dr & 28t</u>	h St					F	lorizor	n Year			prover Plan: PN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	ተቀ	7*	36	44	7		de.		77	4	ţ#
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.87	1.00	1.00	0.92		1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	3303	3406	1329	1719	3438	1422		1821		3367	1827	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (perm)	3303	3406	1329	1719	3438	1422		1821		3367	1827	1531
Volume (vph)	170	1350	2	18	531	255	10	133	0	480	12	13
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	1467	2	20	577	277	11	145	0.52	522	13	14
RTOR Reduction (vph)	0	0	1	0	0	165	0	0	0	0	0	11
Lane Group Flow (vph)	185	1467	1	20	577	112	0	156	0	522	13	3
Confl. Peds. (#/hr)	100	1407	69	20	511	80	0	100	0	522	10	0
Confl. Bikes (#/hr)			2			00			4			2
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		ustom	Prot		custom	Split	770	770	Split	770	Perm
Protected Phases		1626	usion		1226	13	3piit 14	14		1 13 5	1215	Feim
Permitted Phases		1020	16	15	1220	12	14	14		1133		1513
Actuated Green, G (s)	11.8	49.6	43.1	3.8	41.6	54.7		21.1		28.4	28.4	28.4
Effective Green, g (s)	11.8	49.6	43.1	3.8	41.6	54.7		21.1		28.4	28.4	28.4
Actuated g/C Ratio	0.09	0.37	0.32	0.03	0.31	0.41		0.16		0.21	0.21	0.21
Clearance Time (s)	4.0	0.37	4.0	4.0	0.31	4.0		4.0		0.21	0.21	0.21
Vehicle Extension (s)	3.0		3.0	3.0		3.0		3.0				
	289	1252	425	48	1060	577		285		709	385	322
Lane Grp Cap (vph)	289 c0.06		425	48 0.01		0.03						322
v/s Ratio Prot	CU.U6	c0.43	0.00	0.01	0.17			c0.09		c0.16	0.01	0.00
v/s Ratio Perm	0.04	4.47	0.00	0.40	0.54	0.05		0.55		0.74	0.00	0.00
v/c Ratio	0.64	1.17	0.00	0.42	0.54	0.19		0.55		0.74	0.03	0.01
Uniform Delay, d1	59.5	42.7	31.3	64.5	38.8	25.9		52.5		49.8	42.3	42.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.94	0.95	1.37
Incremental Delay, d2	4.8	86.1	0.0	5.8	0.6	0.2		2.1		4.0	0.0	0.0
Delay (s)	64.3	128.7	31.3	70.2	39.3	26.0		54.6		50.6	40.1	57.8
Level of Service	E	F	С	E	D	С		D		D	D	E
Approach Delay (s)		121.4			35.8			54.6			50.6	_
Approach LOS		F			D			D			D	
Intersection Summary												
HCM Average Control E	Delay		83.0	H	ICM Le	vel of Se	ervice		F			
HCM Volume to Capaci	ty ratio		0.91									
Actuated Cycle Length ((s)		134.9	S	Sum of I	ost time	(S)		32.0			
Intersection Capacity Ut	ilizatior	า	75.2%	10	CU Lev	el of Sei	vice		D			
Analysis Period (min)			15									

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 37: Boston Ave & I-5	5 SB C	n-ram	р			F	lorizor	Year		vith Im Timing P		
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			10				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			1.00				
Frt		0.99			0.93			0.98				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1705			1636			1651				
Flt Permitted		0.97			1.00			1.00				
Satd. Flow (perm)		1705			1636			1651				
Volume (vph)	398	151	29	20	86	132	10	348	45	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	433	164	32	22	93	143	11	378	49	0	0	0
RTOR Reduction (vph)	0	2	0	0	50	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	627	0	0	208	0	0	433	Ő	0	0	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	15%	2%	2%	2%	2%
Turn Type	Split	. /0	. /0	Split	. ,0	. /0	Perm	1070	270	270	270	
Protected Phases	4	4		8	8		1 Chin	2				
Permitted Phases	-	-		0	0		2	2				
Actuated Green, G (s)		32.5			13.6		2	23.8				
Effective Green, g (s)		32.5			13.6			23.8				
Actuated g/C Ratio		0.40			0.17			0.29				
Clearance Time (s)		4.0			4.0			4.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		677			272			480				
v/s Ratio Prot		c0.37			c0.13			400				
v/s Ratio Perm		0.57			00.15			0.26				
v/c Ratio		0.93			0.76			0.90				
Uniform Delay, d1		23.5			32.6			27.9				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		18.5			12.0			20.0				
Delay (s)		42.1			44.7			47.9				
Level of Service		42.1 D			44.7 D			47.5 D				
Approach Delay (s)		42.1			44.7			47.9			0.0	
Approach LOS		D			7 D			-17.5 D			0.0 A	
		U			U			U			~	
Intersection Summary												
HCM Average Control D			44.5	F	ICM Le	vel of S	ervice		D			
HCM Volume to Capacit			0.89				()		10.5			_
Actuated Cycle Length (81.9			ost time			12.0			
Intersection Capacity Ut	ilization		77.1%	10	JU Lev	el of Sei	vice		D			_
Analysis Period (min)			15									

c Critical Lane Group

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 39: 32nd St & Waba	ash St						101120	n Year		Fiming F		
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Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations		ž	To.			4	ру.		ž	÷	10	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00	1.00	0.88	
Frt		1.00	0.91			1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00			0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1752	1690			1796	1568		1719	1810	2707	
Flt Permitted		0.50	1.00			0.48	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		916	1690			899	1568		1719	1810	2707	
Volume (vph)	115	115	80	130	140	50	210	205	140	360	560	240
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	125	87	141	152	54	228	223	152	391	609	261
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	250	180	0	0	206	451	0	152	391	870	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot	C	ustom	
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4		4				23	
Actuated Green, G (s)		32.1	32.1			32.1	32.1		14.8	24.1	46.1	
Effective Green, g (s)		32.1	32.1			32.1	32.1		14.8	24.1	46.1	
Actuated g/C Ratio		0.28	0.28			0.28	0.28		0.13	0.21	0.40	
Clearance Time (s)		4.0	4.0			4.0	4.0		4.0	4.0		
Vehicle Extension (s)		3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		255	471			251	437		221	379	1083	
v/s Ratio Prot			0.11						0.09	c0.22		
v/s Ratio Perm		0.27				0.23	c0.29				c0.32	
v/c Ratio		0.98	0.38			0.82	1.03		0.69	1.03	0.80	
Uniform Delay, d1		41.2	33.6			38.9	41.6		48.0	45.6	30.5	
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		50.7	0.5			18.9	51.5		8.6	54.6	4.4	
Delay (s)		91.9	34.1			57.8	93.1		56.6	100.2	34.9	
Level of Service		F	С			E	F		E	F	С	
Approach Delay (s)			64.3			82.0				55.3		
Approach LOS			E			F				E		
Intersection Summary												
HCM Average Control D			75.4	F	ICM Le	vel of S	ervice		E			
HCM Volume to Capaci			1.03									
Actuated Cycle Length (115.2			ost time			12.0			
Intersection Capacity Ut	ilization	1	04.7%	10	CU Leve	el of Se	rvice		G			
Analysis Period (min)			15									
c Critical Lane Group												

С	Critical	Lane	Group	
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Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2	
Lane Configurations		h	介わ			2.44			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			4.0			
Lane Util. Factor		1.00	0.95			0.97			
Frt		1.00	0.99			0.95			
Flt Protected		0.95	1.00			0.97			
Satd. Flow (prot)		1767	3407			3269			
Flt Permitted		0.95	1.00			0.89			
Satd. Flow (perm)		1767	3407			3022			
Volume (vph)	35	415	380	30	10	140	55	10	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	38	451	413	33	11	152	60	11	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	489	446	0	0	234	0	0	
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%	
Turn Type	Prot	Prot			Perm				
Protected Phases	1	1	6			3			
Permitted Phases					3				
Actuated Green, G (s)		25.0	34.3			18.0			
Effective Green, g (s)		25.0	34.3			18.0			
Actuated g/C Ratio		0.22	0.30			0.16			
Clearance Time (s)		4.0	4.0			4.0			
Vehicle Extension (s)		3.0	3.0			3.0			
Lane Grp Cap (vph)		383	1014			472			
v/s Ratio Prot		c0.28	0.13						
v/s Ratio Perm						0.08			
v/c Ratio		1.28	0.44			0.50			
Uniform Delay, d1		45.1	32.7			44.4			
Progression Factor		1.00	1.00			1.00			
Incremental Delay, d2		143.4	0.3			0.8			
Delay (s)		188.5	33.0			45.3			
Level of Service		F	С			D			
Approach Delay (s)			114.3			45.3			
Approach LOS			F			D			

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 40: Harbor Dr & 32nd	d St					F	lorizor	n Year			prover Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ሳቀ	1	γ	44	7	Υr	44	۴	7	44	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
	1719	3438	1538	1687	3374	1477	1719	3438	1500	1719	3438	1524
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
	1719	3438	1538	1687	3374	1477	1719	3438	1500	1719	3438	1524
Volume (vph)	160	1160	100	40	434	460	70	690	140	310	280	210
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1261	109	43	472	500	76	750	152	337	304	228
RTOR Reduction (vph)	0	0	34	0	0	393	0	0	61	0	0	102
Lane Group Flow (vph)	174	1261	75	43	472	107	76	750	91	337	304	126
Confl. Bikes (#/hr)	50/	50/	50/	70/	70/	7	50/	50/	12	50/	50/	10
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		ustom	Prot		custom	Prot	10	Perm	Prot		ustom
Protected Phases	3	1426	15	13	1826	40	15	12	40	11 1 5	1615	315
Permitted Phases	40.7	20.2	14	4.0	05.0	18	07	00.4	12	22.1	40 5	16
Actuated Green, G (s)	16.7 16.7	38.3 38.3	42.0 42.0	4.0 4.0	25.6 25.6	20.6 20.6	8.7 8.7	26.1 26.1	26.1 26.1	22.1	43.5 43.5	56.2
Effective Green, g (s) Actuated g/C Ratio	0.14	0.31	0.34	0.03	0.21	0.17	0.07	0.21	0.21	0.18	43.5	56.2 0.46
Clearance Time (s)	4.0	0.31	4.0	4.0	0.21	4.0	4.0	4.0	4.0	0.10	0.30	0.40
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	234	1075	527	55	705	248	122	733	320	310	1221	749
	c0.10	c0.37	0.01	0.03	0.14	240	0.04	c0.22	320	c0.20	0.09	0.03
v/s Ratio Perm	0.10	0.37	0.01	0.03	0.14	0.07	0.04	0.22	0.06	0.20	0.09	0.05
v/c Ratio	0.74	1.17	0.04	0.78	0.67	0.43	0.62	1.02	0.28	1.09	0.25	0.03
Uniform Delay, d1	50.8	42.1	27.8	58.8	44.6	45.7	55.3	48.2	40.4	50.2	27.9	19.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	1.06
Incremental Delay, d2	12.0	87.9	0.1	50.5	2.4	1.2	9.5	39.2	0.5	76.3	0.1	0.1
Delay (s)	62.9	130.0	27.9	109.3	47.0	46.9	64.8	87.4	40.9	123.4	26.3	20.7
Level of Service	E	F	C	F	D	D	E	F	D	F	C	C
Approach Delay (s)	_	115.2	Ŭ		49.6	_	_	78.4	_		62.5	Ŭ
Approach LOS		F			D			E			E	
Intersection Summary												
HCM Average Control De	elav		81.5	H	ICM Le	vel of Se	ervice		F			
HCM Volume to Capacity			1.10									
Actuated Cycle Length (s			122.5	S	um of I	ost time	(s)		32.0			
Intersection Capacity Util		1	85.0%			el of Ser			E			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		pr.		44	444		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0		
Lane Util. Factor		1.00		0.95	0.91		
Frt		0.86		1.00	1.00		
Flt Protected		1.00		1.00	1.00		
Satd. Flow (prot)		1611		3539	5085		
Flt Permitted		1.00		1.00	1.00		
Satd. Flow (perm)		1611		3539	5085		
Volume (vph)	0	457	0	1530	743	0	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	497	0	1663	808	0	
RTOR Reduction (vph)	0	45	0	0	0	0	
Lane Group Flow (vph)	0	452	0	1663	808	0	
Turn Type	c	ustom					
Protected Phases				246	6		
Permitted Phases		4					
Actuated Green, G (s)		15.6		40.0	16.4		
Effective Green, g (s)		15.6		40.0	16.4		
Actuated g/C Ratio		0.39		1.00	0.41		
Clearance Time (s)		4.0			4.0		
Vehicle Extension (s)		3.0			3.0		
Lane Grp Cap (vph)		628		3539	2085		
v/s Ratio Prot				c0.47	0.16		
v/s Ratio Perm		c0.28					
v/c Ratio		0.72		0.47	0.39		
Uniform Delay, d1		10.3		0.0	8.3		
Progression Factor		1.00		1.00	1.00		
Incremental Delay, d2		3.9		0.1	0.5		
Delay (s)		14.3		0.1	8.8		
Level of Service		В		A	A		
Approach Delay (s)	14.3			0.1	8.8		
Approach LOS	В			А	А		
Intersection Summary							
HCM Average Control D	elay		4.9	F	ICM Lev	el of Service	A
HCM Volume to Capacit	y ratio		0.58				
Actuated Cycle Length (s)		40.0	S	Sum of lo	ost time (s)	4.0
Intersection Capacity Uti	ilization		49.3%	10	CU Leve	el of Service	А
Analysis Period (min)			15				

Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al2 PM with Improvements.sy7

Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

APPENDIX E

Parking Occupancy Data

					Zone 1		Pa	rking Dema	ind
				Available Curb	Total Parking				
Segment	From	То	Side	Length (ft)	Spaces	Notes	9:00 AM	12:00 PM	7:00 PM
Sigsbee Sigsbee	Logan	National National	East West		3 11	Construction	3 10	3	2
Sigsbee	Logan National	Newton	East		9	(2) 15 min Loading	8	9	2
Sigsbee	National	Newton	West		8		8	8	1
Sigsbee	Newton	Main	East		0		0	0	0
Sigsbee	Newton	Main	West		10		3	10	3
Beardsley	Newton	National	East	166	13		13	11	0
Beardsley	Newton	National	West	201	10	15 min. (1)	9	9	3
Beardsley	National	Logan	East	174	10		10	10	10
Beardsley	National	Logan	West	174	4	Construction	4	3	3
Beardsley	Harbor	Main	East		7		5	7	0
Beardsley	Harbor	Main	West		6		6	6	0
Beardsley	Main	Newton	East		12		8	5	1
Beardsley	Main	Newton	West						
Cocar Cha	Main	Newton	Fact	267	8	2 hr. (All)	-	4	0
Cesar Chav		Newton	East			15 min. (3)	5		
Cesar Chav			West	255	10		9	2	1
Cesar Chav		National	East	270	0		0	0	0
Cesar Chav		National	West	217	8		6	8	4
Harbor	Sigsbee	Beardsley	North	599	0		0	0	0
Harbor	Sigsbee	,	South	610	0		0	0	0
Harbor	Beardsley	Cesar Chav		576	0		0	0	0
Harbor	Beardsley	Cesar Chav		579	0		0	0	0
Harbor	Cesar Chav	Dewey	North	539	0		0	0	0
Harbor	Cesar Chav	Dewey	South	518	0	Common and (2) (0	0	0
Main	Sigsbee	Beardsley	North	562	29	Commercial (2) / Diagnal	13	29	4
Main	Sigsbee	Beardsley		530	23	Diagnol	7	23	4
Wall	Signee	Dearasicy	South	330	23	15 min. (2)	,	25	
						Commercial (3)			
Main		Cesar Chav		452	18	Handicap (1)	17	16	4
Main	Beardsley	Cesar Chav	South	438	14	Commercial (2)	12	13	6
Main	Cesar Chav	Dewey	North	506	31	Diagnal	29	29	2
Main	Cesar Chav	Dewey	South	312	18		12	16	2
						20 min. loading (3)/			
Newton	16th	Sigsbee	North	440	25	Diagnol	23	23	24
Newton	16th	Sigsbee	South	482	20	Handicap (1)	19	19	19
Newton	Sigsbee	Beardsley		541	42	(3) 30 min. /diagnol	32	26	11
Newton	Sigsbee	Beardsley	South	553	40	Diagnol Handicap (1)	20	27	10
Newton	Beardsley	Cesar Chav	North	520	22	Some Diagnal	20	22	10
Newton	Beardsley	Cesar Chav	South	544	29	Commercial (1)	28	26	19
Newton	Cesar Chav	Dewey	North	416	30	Diagnal	25	17	0
Newton	Cesar Chav		South	406	31	Diagnal	16	17	2
National	16th	Sigsbee	North	431	17	30 min. (3)	12	23	7
National	16th	Sigsbee	South	483	12	Commercial (5)	7	28	7
						(1) 15			
National	Sigsbee	Beardsley	North	531	16	min./construction	15	16	14
National	Sigsbee	Beardsley	South	427	18	Handicap (1)	12	14	14
National	Beardsley	Cesar Chav	North	426	15		15	12	5
						30 min. (1)			
National	Beardslev	Cesar Chav	South	494	25	Commercial (3) Diagnol	24	23	14
National	Cesar Chav		North	381	31	20080101	24	9	12
National	Cesar Chav		South	428	18	Diagnol	16	14	18
Logan	17th	18th	North	720	4		0	2	4
-	17th	18th	South						7
Logan					10		5	5	
Logan	Sigsbee	Beardsley	North	I	15	1	6	10	9

Zone 1

						Construction on			
Logan	Sigsbee	Beardsley	South		4	South side	3	3	2
Logan	Beardsley	Cesar Chav	North		23	Handicapped (2)	13	16	22
Logan	Beardsley	Cesar Chav	South		16		10	13	16
Logan	Cesar Chav	Dewey	North		19		1	1	6
Logan	Cesar Chav	Dewey	South		18		3	3	9
Commercia	16th	17th	North	188	9		8	6	9
Commercia	16th	17th	South	144	9		1	8	7
Commercia	17th	18th	North	213	0	Red Curb	0	0	0
Commercia	17th	18th	South	214	3	Lots of Red Curb	2	1	1
Logan	16th	17th	North	207	5		4	5	2
Logan	16th	17th	South	178	12		5	12	9
					800	-	563	628	348

70.4%	78.5%	43.5%
70.470	/0.5/0	43.370

Handicap	6
Loading	21
15 min.	7
30 min	7
2 hr.	5

Diagnol Newton between Cesar Chavez and Dewey Newton between Beardsley and Cesar Chavez (partial) Newton between Sigsbee and Beardsley Newton between 16th and Sigsbee (North) Main between Dewey and Cesar Chavez (North) Main between Sigsbee and Beardsley National between Cesar Chavez and Dewey (South) National between Beardsley and Cesar Chavez (South)

320

Construction The block between Logan and National and between Sigsbee and Beardsley is under construction and most of the parking surrounding this block was not available during the study

					Zone 2		Ра	rking Dema	nd
Segment	From	То	Side	Available Curb Length (ft)	Total Parking Spaces	Notes	9:00 AM	12:00 PM	7:00 PM
Evans	Main	Newton	East	246	12	D Permit (1/2)	10	12	4
Evans	Main	Newton	West	263	13		13	10	4
Evans	Newton	National	lational East 286		10	D Permit Handicap (1)	2	2	3
Evans	Newton	National	West	289	12	D Permit Loading (1)	3	4	6
Evans	National	Logan	East	288	9	30 min. (1)	6	9	8
Evans	National	Logan	West	282	14		9	11	6
Sampson	E. Harbor	Main	East	316	0		0	0	0
Sampson	E. Harbor	Main	West	285	3	Loading (3)	0	1	0
Sampson	Main	Newton	East	266	11		11	11	0
Sampson	Main	Newton	West	288	11		11	9	3
Sampson	Newton	National	East	262	10	Handicap (1)	10	8	5
Sampson	Newton	National	West	267	12		12	11	1
Sampson	National	Logan	East	262	12		12	11	10
		Ť	West	267	12		12		
Sampson	National	Logan	west	207	15	30 min. prkg. Northside	10	12	13
Logan	Dewey	Evans	North		12	(2)	10	7	8
Logan	Dewey	Evans	South		20	D Permit (2)	4	7	7
Logan Evans Sampson North		North		19	15 min. (2) 20 min. loading (1) Handicap (1) (1) 30 min (1) 20 min loading	10	8	19	
Logan	Evans	Sampson	South		25	(most) 2 hr	18	13	24
Logan	Sampson	Sicard	North		20	15 min. (2)	6	20	17
Logan	Sampson	Sicard	South		16	30 min. (2) Handicap (1)	10	16	15
National	Dewey	Evans	North	384	20	D Permit (All)	11	11	8
National	Dewey	Evans	South	530	21	D Permit (Most) 15 min. (2)	10	8	12
National	Evans	Sampson	North	489	22	15 min. (3) D Permit (Rest)	15	10	13
National	Evans	Sampson	South	468	19	30 min. (1) D Permit (Rest)	14	10	11
National	Sampson	Sicard	North	452	22	30 min. (1)	22	17	18
National	Sampson	Sicard	South	444	16	2 hour (2)	14	16	11
National	Sicard	26th	North	32	2		2	2	2
National	Sicard	26th	South	79	3	2 hour (1)	2	2	2
						Diagnal			
Newton	Dewey	Evans	North	489	28	(1) handicap	10	14	21
Newton	Dewey	Evans	South	555	25		21	21	25
Newton	Evans	Sampson	North	485	33	Diagnol/ D Permit D Permit (rest) (4) loading	9	14	16
Newton	Evans	Sampson	South	528	16	(4) loading (2) 15 min	14	13	6
Newton	Sampson	Sicard	North	480	21	30 min. (2) Handicap (1)	16	12	13
Newton	Sampson	Sicard	South	458	22	Commercial (2)	18	17	10

		1	1						
Newton	Sicard	26th	North	305	13		11	13	6
Newton	Sicard	26th	South	358	15		14	14	4
Harbor	Dewey	Sampson	North	1213	0		0	0	0
Harbor	Dewey	Sampson	South	1150	0		0	0	0
Harbor	Sampson	Shley	North	1114	36		34	36	7
Harbor	Sampson	Shley	South	1110	39		36	39	13
Main	Dewey	Evans	North	592	42	Diagnal (All)	42	42	27
Main	Dewey	Evans	South	382	12	(5) loading	9	11	3
						(4) commercial			
Main	Evans	Sampson	North	305	13	(1) handicap	11	8	2
Main	Evans	Sampson	South	592	25		25	21	5
						Commercial (5)			
Main	Sampson	Sicard	North	498	16	2 hr. (Rest)	12	12	3
Main	Sampson	Sicard	South	596	21		21	18	9
Main	Sicard	26th	North	496	17		17	16	1
Main	Sicard	26th	South	569	24		23	24	6
					797		600	603	407

75.7%

51.1%

75.3%

Meter	0
Handicap	7
Loading	26
15 min.	11
30 min	10
2 hr.	37
"D" Permit	146

Diagnol Main between Dewey and Evans (North) Newton between Dewey and Sampson (North)

103

							Ра	rking Dema	ind
Segment	From	То	Side	Available Curb Length (ft)	Total Parking Spaces	Notes	9:00 AM	12:00 PM	7:00 PM
26th	Boston	Newton	East	264	8		6	5	0
26th	Boston	Newton	West	176	5		5	4	0
26th	Newton	National	East	212	5	D Permit (8-6)	4	3	1
26th	Newton	National	West	230	12	D Permit (8-6)	6	7	7
26th	National	Logan	East	274	13		10	5	7
26th	National	Logan	West	268	11		8	11	6
27th	Main	Boston	East	176	9	(2) loading (2) 15 min (1) handicap	5	6	3
27th	Main	Boston	West	211	9	(3) 2 hr	8	9	0
27th	Boston	Newton	East	234	9	Loading (2) 15 min (3)	4	9	4
27th	Boston	Newton	West	195	9	(1) handicap	8	7	8
Main	26th	27th	North	397	7	Commercial (2)	5	6	2
Main	26th	27th	South	577	0	Red Curb	0	0	0
Main	27th	28th	North	467	13	30 min. (1)	12	11	9
Main	27th	28th	South	232	11	Commercial (1)	11	11	5
Newton	26th	27th	North	483	20	D Permit (All)	3	4	10
Newton	26th	27th	South	356	18	D Permit (All) Handicap (1)	2	6	13
Newton	26th	27th	Mid		17	D Permit (All)	10	8	7
Newton	27th	28th	North	479	17	(13) 2 hr	15	14	5
Newton	27th	28th	South	458	16		16	15	8
Boston	26th	27th	North	417	24		23	23	7
Boston	26th	27th	South	489	21	(3) commercial (1) 30 min	17	17	2
Boston	27th	28th	North	487	17	(10) commercial	14	9	4
Boston	27th	28th	South	443	14		12	13	5
Harbor	Shley	28th	North	1507	20		20	19	9
Harbor	Shley	28th	South	1723	17	Metered 2 hr.	16	17	14
National	26th	27th	North	420	13	30 min. (2) Commercial (2)	8	13	5
National	26th	27th	South	482	21	30 min. (3)	17	20	8
		-		•	356		265		149
								70 40/	

74.4% 76.4

76.4% 41.9%

Meter (2hr)	17
Handicap	3
Loading	22
15 min.	5
30 min	7
2 hr.	16
"D" Permit	71

Diagnol

Zone 4

			1	-			Pa	rking Dema	nd
Segment	From	То	Side	Available Curb Length (ft)	Total Parking Spaces	Notes	9:00 AM	12:00 PM	7:00 PM
28th	Main	Boston	East		0		0	0	0
28th	Main	Boston	West		0		0	0	0
29th	Main	Boston	East	257	13	(1) handicap	11	13	11
29th	Main	Boston	West	257	14		14	14	11
30th	Main	Boston	East	260	7		4	4	2
30th	Main	Boston	West	262	13	"D"permit	0	0	0
31st	Main	Boston	East	248	13	(2) commercial	7	8	7
31st	Main	Boston	West	254	10	(2) handicap (2) 30 min	7	6	7
32nd	Main	Boston	East	365	14		13	12	4
32nd	Main	Boston	West	283	8	(1) handicap	7	5	7
Boston	28th	29th	North	454	18	D Permit (10)	12	7	5
Boston	28th	29th	South	434	18	D Permit (All)	5	6	8
Boston	29th	30th	North	696	29		23	28	19
Boston	29th	30th	South	314	20		10	8	18
Boston	30th	31st	North	595	28		22	23	8
Boston	30th	31st	South	496	24		17	17	18
Boston	31st	32nd	North	564	27		12	14	10
Boston	31st	32nd	South	365	18	Handicap (1)	14	13	12
Main	28th	29th	North	425	10	Metered	4	7	1
Main	28th	29th	South	581	0		0	0	0
Main	29th	30th	North	316	11	Commercial (2)	9	8	5
Main	29th	30th	South	604	9		9	9	3
Main	30th	31st	North	471	17	30 min. (2)	15	16	14
Main	30th	31st	South	554	15		14	15	5
Main	31st	32nd	North	323	13	Loading (6)	5	9	3
Main	31st	32nd	South	542	0		0	0	0
					349		234 67.0%		178 51.0%

Meter

Handicap

Loading

10 5 10

4

41

15 min. 30 min

2 hr. "D" Permit

Diagnol

							Ра	rking Dema	nd
Segment	From	То	Side	Available Curb Length (ft)	Total Parking Spaces	Notes	9:00 AM	12:00 PM	7:00 PM
Main	32nd	Rigel	North	958	6		6	5	2
Main	32nd	Rigel	South	1153	46		0	0	0
Main	Rigel	Siva	North	389	18		1	2	0
Main	Rigel	Siva	South	604	16		7	5	0
Main	Siva	Thor	North	362	18	Loading (1)	15	15	0
Main	Siva	Thor	South	624	19		14	12	2
Main	Thor	Una	North	460	16	Loading (2) Handicap (1)	4	12	6
Main	Thor	Una	South	565	20		11	13	6
Main	Una	Vesta	North	347	15	(2) 15 min (3) commercial	8	10	9
Main	Una	Vesta	South	598	23		16	17	11
Main	Vesta	Woden	North	390	9	30 min. (3)	9	9	4
Main	Vesta	Yama	South	595	35		33	27	7
Dalbergia	Thor	Woden	North		120	Loading (3)	110	83	21
Dalbergia	Thor	Woden	South		83	(1) 15 min. (2) 30min (2)Loading	73	79	23
Rigel	Main	I-5	East		8		5	5	1
Rigel	Main	I-5	West		8		6	7	1
Una	Main	Dalbergia	East		15	Handicap (1)	13	15	6
Una	Main	Dalbergia	West		16	Loading (3)	15	16	4
Vesta	Main	Dalbergia	East		16		7	10	4
Vesta	Main	Dalbergia	West		11		9	7	4
Woden	Main	Dalbergia	East		10		10	9	0
Woden	Main	Dalbergia	West		12		12	9	0
					540		384	367	11:

71.1% 68.0%

20.6%

Handicap	2
Loading	14
15 min.	3
30 min	5
2 hr.	0

Diagnol Both sides, the length of Dalbergia 203

APPENDIX F

Truck Counts Data

2-Axle Trucks Total Count









		Main												W			
		wan	ո St .			Mair	n St.			Schle	ey St.			Schl	ey St.		INTERVAL TOTALS
	Left	Thru	Right	ΗV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	ΗV	TOTALO
06:00 AM		1													1		
06:15 AM														1			
06:30 AM						1											
06:45 AM																	
07:00 AM		1									1						
07:15 AM		1															
07:30 AM		1			1				1					1			
07:45 AM			1			1											
08:00 AM		1				1											
08:15 AM		2															
08:30 AM		1											1	1			
08:45 AM																	
09:00 AM		2															
09:15 AM																	
09:30 AM					1		1										
09:45 AM	1	1				2	1								1		
Sum	1	11	1	0	2	5	2	0	1	0	1	0	1	3	2	0	0
02:00 PM																	
02:15 PM						3											
02:30 PM						1											
02:45 PM																	
03:00 PM		1															
03:15 PM															1		
03:30 PM		1													-		
03:45 PM		-															
04:00 PM					1	1				1							
04:15 PM					1												
04:30 PM													1				
04:45 PM																	
05:00 PM																	
05:15 PM																1	
05:30 PM																	
05:45 PM																	
Sum	0	2	0	0	2	5	0	0	0	1	0	0	1	0	1	0	0
Juin	0	2	0	0	2	5	0	0	0	1	0	0	1	0	1	0	0
	1	40		-		10	2			4		0	2	2	2		
	1	13	1 5	0	4	10		0	1	1	1	0	2	3	3 8	0	

		N	В			S	В			E	В			N	/B		
		Harb	or Dr			Harb	or Dr			Schl	ey St.			INTERVAL			
															ey St.		TOTALS
00-00 414	Left	Thru	Right	HV	Left	1	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	
06:00 AM 06:15 AM						1											
						-					1						
06:30 AM 06:45 AM		1				2											
07:00 AM						1								-			
07:15 AM		2				1								-			
07:30 AM		3				-									1		
07:45 AM		3				1								-	1		
07:45 AM 08:00 AM		3				2											
08:15 AM		3				5											
08:30 AM		3				2											
08:45 AM		3	1			2											
09:00 AM		2	-			2											
09:15 AM		3				2											
09:30 AM		3											1				
09:45 AM		3				1					2						
Sum	0	-		0	0	-	0	0	0	0		0	1	0	1	(1
						15					5				_		
02:00 PM		1				1											
02:15 PM						1											1
02:30 PM						1											
02:45 PM																	
03:00 PM						2											1
03:15 PM																	
03:30 PM																	
03:45 PM						2											1
04:00 PM			1			2											
04:15 PM																	
04:30 PM																	
04:45 PM							1										
05:00 PM																	
05:15 PM					Ī				Ī								
05:30 PM																	
05:45 PM																	
Sum																	

		N	B		SB				EB				WB				
	Harbor Dr				Harbor Dr				Sicard St.				None				INTERVAL TOTALS
	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	TUTALS
06:00 AM																	
06:15 AM		1															
06:30 AM		3				1											
06:45 AM		2				3											
07:00 AM		4															
07:15 AM		1				2											
07:30 AM		2				1											
07:45 AM		2				4											
08:00 AM		3				5											
08:15 AM		1				3											
08:30 AM		8				2											
08:45 AM		2				2											
09:00 AM		4				3											
09:15 AM		2															
09:30 AM		5				2											
09:45 AM		4				2											
Sum	0	44	0	0	0	30		0	0	0	0	0	0	0	0	0	
02:00 PM		4				2					1						
02:15 PM						2											
02:30 PM		2				1											
02:45 PM																	
03:00 PM																	
03:15 PM		1				2											
03:30 PM						2											
03:45 PM						1											
04:00 PM						1									1		
04:15 PM						2											
04:30 PM						1											
04:45 PM						2											
05:00 PM						1											
05:15 PM						•									1		
05:30 PM															1		
05:45 PM															1		
Sum	0	7	0	0	0	17	0	0	0	0	1	0	0	0	0	0	
Culli	0	/	0	0	0	1/	0	0	0	0	1	0	0	0			
	0	51	0	0	0	47	0	0	0	0	1	0	0	0	0	0	
	0		51	0	0		7	0	0		1	0	0		0	0	1
3-Axle Trucks Total Count









3-Axle Trucks AM Count









4-Axle Trucks Total Count



A





4-Axle Trucks PM Count PM Peak 4:30



















APPENDIX G

Forecast Model Plots

REVISED - BARRIO LOGAN 2030-ADOPTED COMM. ADT PLOT (KSF)





BARRIO LOGAN

SANDAG Series 11

2030 NETWORK

Legend

A Rural Light Collector

Ønadjusted Volumes (1000s)

- Ν

November 1, 2010



REVISED - BARRIO LOGAN 2030-ALT(1) ADT PLOT (KSF)



BARRIO LOGAN

SANDAG Series 11

2030 NETWORK

Legend

Freeway
Prime
Major
Collector
Local Collector
Rural Collector
Rural Light Collector
Local
Ramp

Ønadjusted Volumes (1000s)

#

- Feet 0 500 1,000 0 60 180 300 Meters
- A N



July 30, 2010

The information contained on this map pertains to this project. Interpretation of the information shou be made by someone appropriately qualified. The use of the City traffic model should not be interpret as an approval of the project. This map may also contain information from SANDAG and/or SanGIS.



REVISED - BARRIO LOGAN 2030-ALT(2) ADT PLOT (KSF)



BARRIO LOGAN

SANDAG Series 11

2030 NETWORK

Legend

Freeway
Prime
Major
Collector
Collector
Local Collector
Rural Collector
Rural Light Collector
Local
Ramp

Ønadjusted Volumes (1000s)

#

- Feet 0 500 1,000 0 60 180 300 Meters
- A N



August 2, 2010

The information contained on this map pertains to this project. Interpretation of the information shou be made by someone appropriately qualified. The use of the City traffic model should not be interpret as an approval of the project. This map may also contain information from SANDAG and/or SanGIS.



APPENDIX H

NCHRP 255 Report and Turning Movement Forecast Worksheets

Int 1 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







Int 2 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







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Int 3 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 4 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







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Int 5 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 6 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







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Int 7 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 8 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







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Int 9 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 10 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







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Int 11 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 12 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





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Int 13 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 14 AM Peak Volumes









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Int 15 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 16 AM Peak Volumes







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Int 17 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 18 AM Peak Volumes



2030 Conditions Scenario N/S Street: I-5 SB On-Ramp / Park Dwy E/W Street: Logan Ave 583 6.4% 閿 0 0 0 ∿ 84 ⇔ 127 127 209 497 12 182 685 84 6.0% 25 6.79 2 3 1.9%



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Int 19 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 20 AM Peak Volumes



 Scenario:
 2030 Conditions

 N/S Street:
 Evans St

 E/W Street:
 National Ave





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx

Int 21 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 22 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.

Scenario:	2030 Conditions	
N/S Street:	Evans St	
E/W Street:	Main St	





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Int 23 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 24 AM Peak Volumes



Scenaric: 2030 Conditions
N/S Street: Sampson St
E/W Street: National Ave





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Int 25 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



78

2.6%

130

Int 26 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.









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Int 27 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 28 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND TPTO\095707000\Excel\Turn32-Alt1.xlsx

Int 29 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 30 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx

Int 31 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







Int 32 AM Peak Volumes









K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx

Int 33 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 34 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND TPTO\095707000\Excel\Turn32-Alt1.xlsx

Int 35 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







Int 36 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx

Int 37 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 38 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.

Scenario:	2030 Conditions	
N/S Street:	32nd St	
E/W Street:	Main St	





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx

Int 39 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 40 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx

Int 41 AM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





Int 1 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 1 PM

Int 2 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 2 PM

Int 3 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







Int 4 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 4 PM

Int 5 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.

 Scenario:
 2030 Conditions

 N/S Street:
 Sigsbee St

 E/W Street:
 Main St




Int 6 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 6 PM

Int 7 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 7 PM

Int 8 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 8 PM

Int 9 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 9 PM

Int 10 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 10 PM

Int 11 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 11 PM

Int 12 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 12 PM

Int 13 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 13 PM

Int 14 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 14 PM

Int 15 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 15 PM

Int 16 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 16 PM

Int 17 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 17 PM

Int 18 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 18 PM

Int 19 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 19 PM

Int 20 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 20 PM

Int 21 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 21 PM

Int 22 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 22 PM

Int 23 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 23 PM

Int 24 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



 LEGEND

 Existing K-Factor
 xx%

 ADT Volume
 xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 24 PM

Int 25 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 25 PM

Int 26 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 26 PM

Int 27 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 27 PM

Int 28 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 28 PM

Int 29 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 29 PM

Int 30 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 30 PM

Int 31 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.

 Scenario:
 2030 Conditions

 N/S Street:
 26th St

 E/W Street:
 Main St





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 31 PM

Int 32 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 32 PM

Int 33 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.

 Scenario:
 2030 Conditions

 N/S Street:
 28th St

 E/W Street:
 National Ave





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 33 PM

Int 34 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 34 PM

Int 35 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.

Scenario:	2030 Conditions	
N/S Street:	28th St	
E/W Street:	Main St	





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 35 PM

Int 36 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



 LEGEND

 Existing K-Factor
 xx%

 ADT Volume
 xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 36 PM

Int 37 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.

 Scenario:
 2030 Conditions

 N/S Street:
 29th St

 E/W Street:
 Boston Ave





K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 37 PM

Int 38 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 38 PM

Int 39 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 39 PM

Int 40 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.



LEGEND Existing K-Factor xx% ADT Volume xx

K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 40 PM

Int 41 PM Peak Volumes



Note: Traffic volumes were collected by Traffic Data Services Southwest during February 2005.







K:\SND_TPTO\095707000\Excel\Turn32-Alt1.xlsx Int 41 PM

APPENDIX I

Signal Warrants Worksheets

Figure 4C-101 (CA). Traffic Signal Warrants W	Vorksheet (Sheet	2 of 4)	
Major Street: Boston Ave	Date: 2010-09	-22	
Minor Street: 29th St-i-5 SB On ramp 5	Scenario: Year 20	30	
WARRANT 2 - Four Hour Vehicular Volume	SATISFIED*	YES 🗌	NO 🗆
Record hourly vehicular volumes for any four hours of an average da	y.		
APPROACH LANES One More	Hour		
Both Approaches - Major Street			
Higher Approach - Minor Street			
*All plotted points fall above the curves in Figure 4C-1. (URBAN AR	(EAS)	Yes 🗌	No 🗌
<u>OR</u> , All plotted points fall above the curves in Figure 4C-2. (RURAL	AREAS)	Yes 🗆	No 🗌
WARRANT 3 - Peak Hour (Part A or Part B must be satisfied)	SATISFIED	YES 🛛	NO 🗌
PART A (All parts 1, 2, and 3 below must be satisfied for the same	SATISFIED	YES 🛛	NO 🗌
one hour, for any four consecutive 15-minute periods)			
 The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for approach, or five vehicle-hours for a two-lane approach; <u>AND</u> 	h (one direction only) or a one-lane	Yes 🗵	No 🗌
 The volume on the same minor street approach (one direction only 100 vph for one moving lane of traffic or 150 vph for two moving lane 	 equals or exceeds nes; <u>AND</u> 	Yes 🗵	No 🔲
 The total entering volume serviced during the hour equals or exceed for intersections with four or more approaches or 650 vph for interse three approaches. 	eds 800 vph sections with	Yes 🛛	No 🗍
PART B	SATISFIED	YES 🗌	NO 🗵
APPROACH LANES One More AM HOL	ir		
Both Approaches - Major Street x 623 1076			
Higher Approach - Minor Street x 61 143			
The plotted point falls above the curve in Figure 4C-3.		Yes 🗌	No 🗵
OR, The plotted point falls above the curve in Figure 4C-4.		Yes 🗌	No 🗌

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Chapter 4C – Traffic Control Signal Needs Studies Part 4 – Highway Traffic Signals

September 26, 2006

Fig	ure 4C-101 (CA). Trai	ffic Signal	Warra	ants Wo	rksheet	(Sheet	2 of -	4)		
Major Street:	Harbor Dr			D	ate :	2010-09	-22			
Minor Street:	Sigsbee St			S	Scenario:	Year 20	30			
WARRANT 2 -	Four Hour Vehicular	Volume			SATI	SFIED*	YES		NO	
Record hourly v	vehicular volumes for any f	our hours of	an ave	rage day.	, ,					
APPRC	ACH LANES	2 or One More		/ /		Hour				
Both Approa	iches - Major Street]				
Hígher Appr	oach - Minor Street	1								
*All plotted po	ints fall above the curves ir	n Figure 4C-1	. (URE	BAN AREA	NS)		Yes		No	
OR, All plotted	points fall above the curve	es in Figure 4	C-2. (I	RURAL AF	REAS)		Yes		No	
	· · · · · · · · · · · · · · · · · · ·									·····
WARRANT 3 -	Peak Hour B must be satisfied)				SATIS	FIED	YES	$\overline{\mathbb{X}}$	NO	
·	D must be satisfied)									
PART A (All parts 1, 2, ar	nd 3 below must be satis	sfied for the	same		SATIS	SFIED	YES	X	NO	
one hour, for an	y four consecutive 15-	minute per	iods)							
Controlled by	ay experienced for traffic o / a STOP sign equals or ex r five vehicle-hours for a tw	iceeds four ve	hicle.	าดมาร โดยล	one direct one-lane	ion only)	Yes	\boxtimes	No	
2. The volume 100 vph for c	on the same minor street a one moving lane of traffic o	approach (one r 150 vph for	e direct two mo	ion only) e oving lanes	equals or e	exceeds	Yes	\mathbf{X}	No	
3. The total ent for intersecti three approa	ering volume serviced duri ons with four or more appr aches.	ng the hour e oaches or 65	quals (0 vph f	or exceeds or intersec	s 800 vph tions with	~ ~ ~ ~ ~ ~	Yes		No	
PART B					SATIS	FIFD	YES	اکا	NO	
		<i>.</i>		/		· · · · · ·	1	لتشت		J
APPF	ROACH LANES	2 or One More	AM	Hour						
Both Approa	iches - Major Street	×	2190	2955						
Higher Appro	oach - Minor Street	x	200	160						
The plotted poi	int falls above the curve in	Figure 4C-3.		· · · · · · · · · · · · · · · · · · ·	······		Yes	\mathbf{X}	No	
OR, The plotte	d point falls above the curv	e in Figure 4	C-4.				Yes		No	
		-						السبية		

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Chapter 4C – Traffic Control Signal Needs Studies Part 4 – Highway Traffic Signals

September 26, 2006

I	Figure 4C-101 (CA). Tra	ffic S	ignal	Warra	ants Wor	rksheet	(Sheet	2 of 4	1)		
Major Street:	Logan Ave				Date):	2010-09	-22			
Minor Street:	Beardsley St / I-5 SB Ram	nario:	Year 20	30							
WARRANT	2 - Four Hour Vehicula	r Volu	me			SATI	SFIED*	YES		NO	
Record hou	urly vehicular volumes for any	four ho	urs of a	an ave	age day.	, ,					
API	PROACH LANES	One	2 or More		/ /		Hour				
Both App	proaches - Major Street		1								
Higher A	pproach - Minor Street				1						
*All plotted	d points fall above the curves i	n Figur	re 4C-1	. (URI	BAN AREA	S)		Yes		No	
OR, All plo	otted points fall above the curv	es in F	igure 4	C-2. (RURAL AR	EAS)		Yes		No	
·								I			·
	3 - Peak Hour					SATIS	FIED	YES	X	NO	
(Part A or P	art B must be satisfied)									
PART A) and 2 halaw much have a		C			SATIS	FIED	YES	\mathbf{X}	NO	
one hour, for	2, and 3 below must be sat r any four consecutive 15	-mínu	te per	iods)	•						
1. The total	delay experienced for traffic of	on one	minor s	street a	pproach (c	one direct	on only)				
controlle	d by a STOP sign equals or e h, or five vehicle-hours for a t	xceeds	s four ve	ehicle-l	hours for a	one-lane		Yes	\mathbb{X}	No	
2. The volu	Ime on the same minor street	approa	ch (one	e direct	ion only) e	quals or e	exceeds	 		 	·
100 vph	for one moving lane of traffic of	or 150 v	vph for	two m	oving lanes	, <u>AND</u>	~~~~	Yes	× .	No	[]
for inters	I entering volume serviced dur sections with four or more app proaches.							Yes		No	
		<u> </u>									<u></u>
PART B						SATIS	FIED	YES		NO	
•		0	2 or	AM	Hour						
[PPROACH LANES	1	More	Π	РМ 802						
····	proaches - Major Street	×		498							
Higher A	Approach - Minor Street	×	1	544	420						
The plotted	d point falls above the curve ir	ı Figure	e 4C-3.					Yes	[X]	No	
OR, The pl	lotted point falls above the cur	ve in F	igure 4	C-4.				Yes		No	$\overline{\mathbf{n}}$

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Chapter 4C – Traffic Control Signal Needs Studies Part 4 – Highway Traffic Signals

September 26, 2006

Major Street: Logan Ave Date: 2010-09-2		
	22	
Minor Street: Sampson St Scenario: Year 203	30	
WARRANT 2 - Four Hour Vehicular Volume SATISFIED*	YES 🗌	NO 🗌
Record hourly vehicular volumes for any four hours of an average day.		
APPROACH LANES One More Hour		
Both Approaches - Major Street		
Higher Approach - Minor Street		
*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)	Yes 🗌	No 🗌
<u>OR</u> , All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)	Yes 🗌	No 🔲
WARRANT 3 - Peak Hour SATISFIED (Part A or Part B must be satisfied)	YES 🛛	NO 🗌
DADY A	YES 🗵	NO 🗌
 The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u> 	Yes 🗵	No 🛛
 The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u> 	Yes 🗵	No 🔲
 The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. 	Yes 🖾	No 🗖
PART B SATISFIED	YES 🛛	NO 🗌
APPROACH LANES One More AM Hour		
Both Approaches - Major Street x 725 854		
Higher Approach - Minor Street x 312 354		
The plotted point falls above the curve in Figure 4C-3.	Yes 🛛	No 🔲
<u>OR</u> , The plotted point falls above the curve in Figure 4C-4.	Yes 🗵	No 🔲

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



'Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Chapter 4C – Traffic Control Signal Needs Studies Part 4 – Highway Traffic Signals September 26, 2006

Figure 4C-101 (CA). Traffic Signal Warrants Workshe	et (Sheet	2 of 4)	
Major Street: National Ave Date:	2010-09	9-22	
Minor Street: 16th St Scenario:	Year 20)30	
WARRANT 2 - Four Hour Vehicular Volume SA	TISFIED*	YES [] NO 🗌
Record hourly vehicular volumes for any four hours of an average day.	/		
APPROACH LANES One More	, Hour		
Both Approaches - Major Street			
Higher Approach - Minor Street			
*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS)		Yes [] No 🗌
QR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS)		Yes [] No 🗌
	ISFIED	YES 🛛	NO 🗌
(Part A or Part B must be satisfied) PART A SA		VEO M	
(All parts 1, 2, and 3 below must be satisfied for the same	risfied	YES 🛛	
one hour, for any four consecutive 15-minute periods)		1	
 The total delay experienced for traffic on one minor street approach (one dim controlled by a STOP sign equals or exceeds four vehicle-hours for a one-la approach, or five vehicle-hours for a two-lane approach; <u>AND</u> 	ection only) ne	Yes 🗵) No 🗌
 The volume on the same minor street approach (one direction only) equals 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u> 	or exceeds	Yes 🛛] No 🗌
 The total entering volume serviced during the hour equals or exceeds 800 v for intersections with four or more approaches or 650 vph for intersections w three approaches. 	ph /ith	Yes 🛛] No 🗆
·			
PART B SAT	risfied	YES 🛛	
APPROACH LANES One More AM Hour			
Both Approaches - Major Street x 806 955			
Higher Approach - Minor Street x 192 220			
The plotted point falls above the curve in Figure 4C-3.		Yes 🛛	No 🗌
OR, The plotted point falls above the curve in Figure 4C-4.		Yes 🛛	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



'Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Chapter 4C – Traffic Control Signal Needs Studies Part 4 – Highway Traffic Signals September 26, 2006

APPROACH LANES One Am More Hour PM Both Approaches - Major Street x 996 1204 Higher Approach - Minor Street x 374 282	Figure 4C-101 (CA). Traffic Signal Warran	its Worksheet (Sheet 2 of 4)
WARRANT 2 - Four Hour Vehicular Volume SATISFIED* YES NO Record hourly vehicular volumes for any four hours of an average day. APPROACH LANES One Aor Both Approaches - Major Street Hour Hour Hour Both Approaches - Major Street Hour Hour *All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS) Yes No QR, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS) Yes No WARRANT 3 - Peak Hour SATISFIED YES NO WARRANT 3 - Peak Hour SATISFIED YES NO WARRANT 3 - Peak Hour SATISFIED YES NO (Part A or Part B must be satisfied) SATISFIED YES NO PARTA SATISFIED YES NO Part A (All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) Yes NO Part A 1 The total delay experienced for traffic or none minor street approach (one direction only) controlled by a SIOP sign equals or exceeds four vehicle-hours for a two-lane approach, AND Yes No 2. The volume on the same minor street approach (one direction only) equals or exceeds 800 vph for intersections w	Major Street: National Ave	Date: 2010-09-22
Record hourly vehicular volumes for any four hours of an average day. APPROACH LANES One More Hour Both Approaches - Major Street Hour Hour Higher Approach - Minor Street Hour Hour 'All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS) Yes No QR. All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS) Yes No WARRANT 3 - Peak Hour SATISFIED YES NO (Part A or Part B must be satisfied) SATISFIED YES NO PARTA SATISFIED YES NO (All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) Yes NO 1 The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-mours for a two-lane approach, AND Yes No 2. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes No PART E SATISFIED YES No Hour 3. The total entening volume serviced during the hour equals or	Minor Street: Beardsley St	Scenario: Year 2030
APPROACH LANES One More Hour Both Approaches - Major Street Higher Approach - Minor Street Hour 'All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS) Yes No QE, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS) Yes No WARRANT 3 - Peak Hour SATISFIED YES NO (Part A or Part B must be satisfied) SATISFIED YES NO PART A SATISFIED YES NO (All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) SATISFIED YES NO 1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-tane approach, AND Yes No 2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND Yes No 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with Yes No Marres One More Hour Hour APPROACH LANES One More No	WARRANT 2 - Four Hour Vehicular Volume	SATISFIED* YES 🗌 NO 🗌
APPROACH LANES One More Hour Both Approaches - Major Street Image: Construct the street Image: Construct the street Image: Construct the street *All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS) Yes No QB, All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS) Yes No WARRANT 3 - Peak Hour SATISFIED YES NO (Part A or Part B must be satisfied) SATISFIED YES NO PART A SATISFIED YES NO (All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) Yes NO 1 The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or a two-lane approach, AND Yes No 2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for intersections with four or more approaches or 650 vph for intersections with four or more approaches or 650 vph for intersections with four or more approaches or 650 vph for intersections with thour or more approaches or 650 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes No PART B SATISFIED YES No Image: No APPROACH LANES	Record hourly vehicular volumes for any four hours of an average	ge day.
Higher Approach - Minor Street		Hour
*All plotted points fall above the curves in Figure 4C-1. (URBAN AREAS) Yes No ②R. All plotted points fall above the curves in Figure 4C-2. (RURAL AREAS) Yes No WARRANT 3 - Peak Hour (Part A or Part B must be satisfied) SATISFIED YES NO PART A (All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) SATISFIED YES NO 1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach (AND Yes No 2. The volume on the same minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a two-lane approach, AND Yes No 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes No PART B SATISFIED YES No Intersections with three approaches - Major Street x 1996 Ident Approaches - Major Street x 1996 1204 282 The plotted point falls above the curve in Figure 4C-3. Yes No Intersection falls above the curve in Figure 4C-3.	Both Approaches - Major Street	
QR, All plotted points fall above the curves in Figure 4C-2. (RURALAREAS) Yes No WARRANT 3 - Peak Hour (Part A or Part B must be satisfied) SATISFIED YES NO PART A (All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) SATISFIED YES NO 1. The total delay experienced for traffic on one minor street approach, or five vehicle-hours for a two-lane approach, AND Yes No 2. The volume on the same minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach, AND Yes No 2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND Yes No 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes No PART B SATISFIED YES No Image: And three approach is a four or more approaches or 650 vph for intersections with three approaches. Yes No PART B SATISFIED YES No Image: And three approaches is a service and three approaches is a service and three approaches is a service and three approaches. Yes No	Higher Approach - Minor Street	
WARRANT 3 - Peak Hour (Part A or Part B must be satisfied) SATISFIED YES NO PART A (All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) SATISFIED YES NO 1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach (AND) Yes NO 2. The volume on the same minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND Yes No 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes No PART B SATISFIED YES No APPROACH LANES One More More Hour PM Both Approaches - Major Street x 996 1204 1204 282 Yes No Index The plotted point falls above the curve in Figure 4C-3. Yes No Index	*All plotted points fall above the curves in Figure 4C-1. (URBA	N AREAS) Yes 🗌 No 🗌
(Part A or Part B must be satisfied) SATISFIED YES NO PART A SATISFIED YES NO (All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) SATISFIED YES NO 1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach. (AND Yes No 2. The volume on the same minor street approach (one direction only) approach, or five vehicle-hours for a two-lane approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND Yes No 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes No PART B SATISFIED YES No APPROACH LANES One More Hour Hour PM 1204 282 282 The plotted point falls above the curve in Figure 4C-3. Yes No Inc.	<u>QR</u> , All plotted points fall above the curves in Figure 4C-2. (RL	JRALAREAS) Yes 🗌 No 🗍
(Part A or Part B must be satisfied) SATISFIED YES NO PART A SATISFIED YES NO (All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) SATISFIED YES NO 1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach. (AND Yes No 2. The volume on the same minor street approach (one direction only) approach, or five vehicle-hours for a two-lane approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND Yes No 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes No PART B SATISFIED YES No APPROACH LANES One More Hour Hour PM 1204 282 282 The plotted point falls above the curve in Figure 4C-3. Yes No Inc.		
PART A (All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) SATISFIED YES NO 1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-tane approach, or five vehicle-hours for a two-lane approach; AND Yes No 2. The volume on the same minor street approach (one direction only) to vph for one moving lane of traffic or 150 vph for two moving lanes; AND Yes No 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes No APPROACH LANES One More More Migher Approach - Minor Street x 996 Higher Approach - Minor Street x 1204 282 The plotted point falls above the curve in Figure 4C-3. Yes No		SATISFIED YES 🖾 NO 🗌
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods) Item to be the same one hour, for any four consecutive 15-minute periods) 1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u> Yes ⊠ No □ 2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u> Yes ⊠ No □ 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes ⊠ No □ PART B APPROACH LANES One 2 or More AM Both Approaches - Major Street x 996 1204 282 The plotted point falls above the curve in Figure 4C-3. Yes ⊠ No □ Yes ⊠ No □		
1. The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND Yes ⊠ No □ 2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND Yes ⊠ No □ 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes ⊠ No □ PART B APPROACH LANES One More AM 0 More AM 4 Hour PM Both Approach - Minor Street x 996 1204 1204 282 The plotted point falls above the curve in Figure 4C-3. Yes ⊠ No □	(All parts 1, 2, and 3 below must be satisfied for the same	SANSFIED FES MINU
controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND Yes ⊠ No □ 2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND Yes ⊠ No □ 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes ⊠ No □ PART B APPROACH LANES One One More AM Higher Approach - Minor Street x 996 Higher Approach - Minor Street x 374 Z82 The plotted point falls above the curve in Figure 4C-3. Yes ⊠ No □	one hour, for any four consecutive 15-minute periods)	
100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND Yes ☑ NO □ 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with Yes ☑ No □ PART B SATISFIED YES ☑ NO □ APPROACH LANES One AM Both Approaches - Major Street x 996 Higher Approach - Minor Street x 374 The plotted point falls above the curve in Figure 4C-3. Yes ☑ No □	controlled by a STOP sign equals or exceeds four vehicle-hold	urs for a one-lane Yes X No
for intersections with four or more approaches or 650 vph for intersections with Yes No PART B SATISFIED YES NO APPROACH LANES One AM Hour Both Approaches - Major Street x 996 1204 Higher Approach - Minor Street x 374 282	The volume on the same minor street approach (one direction 100 vph for one moving lane of traffic or 150 vph for two moving	n only) equals or exceeds ing lanes; <u>AND</u> Yes X No
APPROACH LANES One Am More Hour PM Both Approaches - Major Street x 996 1204 Higher Approach - Minor Street x 374 282	for intersections with four or more approaches or 650 vph for	
APPROACH LANES One More AM Hour Both Approaches - Major Street x 996 1204 Higher Approach - Minor Street x 374 282	PART B	SATISFIED YES 🖾 NO 🗌
Both Approaches - Major Street x 996 1204 Higher Approach - Minor Street x 374 282		
The plotted point falls above the curve in Figure 4C-3. Yes X No I	Both Approaches - Major Street x 996 1	
	Higher Approach - Minor Street x 374	282
OR. The plotted point fails above the curve in Figure 4C-4	The plotted point falls above the curve in Figure 4C-3.	Yes 🛛 No 🗖
	<u>QR</u> , The plotted point falls above the curve in Figure 4C-4.	Yes 🗵 No 🗌

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



'Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Chapter 4C – Traffic Control Signal Needs Studies Part 4 – Highway Traffic Signals September 26, 2006

APPENDIX J

Queuing Analysis Worksheets

Barrio Logan CPU 1: Commercial St & 1	16th S	Existing Conditions w LRT Timing Plan: AM Peak				
	-	•	Ť	ţ	*	
Lane Group	EBT	WBT	NBT	SBT	SWR	
Lane Group Flow (vph)	127	175	40	111	22	
v/c Ratio	0.33	0.47	0.02	0.06	0.14	
Control Delay	16.9	21.2	7.2	5.9	27.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.9	21.2	7.2	5.9	27.9	
Queue Length 50th (ft)	25	41	1	3	5	
Queue Length 95th (ft)	65	104	13	20	29	
Internal Link Dist (ft)	166	452	369	79		
Turn Bay Length (ft)						
Base Capacity (vph)	703	687	1988	2016	370	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.25	0.02	0.06	0.06	
Intersection Summary						

Barrio Logan CPU 3: National Ave & Sig	Existing Conditions w LR Timing Plan: AM Peal						
	≯	-	4	+	t	ţ	
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	3	61	13	114	133	83	
v/c Ratio	0.01	0.15	0.04	0.27	0.13	0.07	
Control Delay	8.0	5.6	8.0	7.9	4.7	4.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.0	5.6	8.0	7.9	4.7	4.9	
Queue Length 50th (ft)	0	3	1	9	6	4	
Queue Length 95th (ft)	4	18	10	38	29	22	
Internal Link Dist (ft)		588		570	296	200	
Turn Bay Length (ft)							
Base Capacity (vph)	612	837	636	902	1195	1352	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.00	0.07	0.02	0.13	0.11	0.06	
Intersection Summary							

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Barrio Logan CPU 12: Kearney St & Ce	sar E	Existing Conditions w LRT Timing Plan: AM Peak				
	4	+	•	1	ţ	
Lane Group	WBL	WBT	NBL	NBT	SBT	
Lane Group Flow (vph)	433	443	117	114	237	
v/c Ratio	0.77	0.78	0.36	0.33	0.35	
Control Delay	33.1	32.7	26.6	26.0	23.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	33.1	32.7	26.6	26.0	23.3	
Queue Length 50th (ft)	110	110	36	35	37	
Queue Length 95th (ft)	#351	#353	94	91	77	
Internal Link Dist (ft)		251		313	132	
Turn Bay Length (ft)						
Base Capacity (vph)	632	641	538	567	1075	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.69	0.69	0.22	0.20	0.22	
Intersection Summary						
# 95th percentile volur		ich shae	nacity c		av he l	onger

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

	۶	→	4	+	•	•	1	1	1	ŧ
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	61	200	17	23	40	12	154	159	80	677
v/c Ratio	0.25	0.57	0.09	0.07	0.13	0.10	0.09	0.19	0.44	0.32
Control Delay	27.4	27.5	23.5	23.2	7.8	29.5	8.4	2.9	39.7	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	27.5	23.5	23.2	7.8	29.5	8.4	2.9	39.7	7.9
Queue Length 50th (ft)	28	72	8	10	0	6	7	0	38	41
Queue Length 95th (ft)	44	98	17	20	16	m17	46	9	73	176
Internal Link Dist (ft)		618		587			299			313
Turn Bay Length (ft)										
Base Capacity (vph)	546	724	438	745	642	119	1768	835	236	2090
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.28	0.04	0.03	0.06	0.10	0.09	0.19	0.34	0.32

Synchro 6 Report Page 3

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Barrio Logan CPU Existing Conditions w LRT 14: National Ave & Cesar E. Chavez Pkwy Timing Plan: AM Peak										
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Group Flow (vph)	57	63	99	138	16	347	46	542	138	
v/c Ratio	0.35	0.25	0.57	0.50	0.04	0.14	0.07	0.44	0.13	
Control Delay	36.3	22.9	44.4	25.5	2.0	1.8	2.6	5.4	1.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	
Total Delay	36.3	22.9	44.4	25.5	2.0	1.8	2.6	5.8	1.4	
Queue Length 50th (ft)	26	18	47	39	1	10	6	109	0	
Queue Length 95th (ft)	46	38	90	86	m3	15	m5	38	1	
Internal Link Dist (ft)		608		356		301		299		
Turn Bay Length (ft)										
Base Capacity (vph)	481	696	517	709	414	2469	666	1238	1085	
Starvation Cap Reductn	0	0	0	0	0	0	0	293	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.09	0.19	0.19	0.04	0.14	0.07	0.57	0.13	
Intersection Summary M Volume for 95th percentile queue is metered by upstream signal.										

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	40	50	28	75	11	285	33	573	
v/c Ratio	0.32	0.27	0.22	0.38	0.03	0.11	0.04	0.41	
Control Delay	39.9	24.6	36.6	25.8	0.9	0.9	1.3	3.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay	39.9	24.6	36.6	25.8	0.9	0.9	1.3	3.5	
Queue Length 50th (ft)	19	13	13	18	0	3	1	99	
Queue Length 95th (ft)	36	31	29	41	1	6	m3	51	
Internal Link Dist (ft)		598		178		305		301	
Turn Bay Length (ft)									
Base Capacity (vph)	495	665	506	671	430	2692	821	1398	
Starvation Cap Reductn	0	0	0	0	0	0	0	263	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.08	0.08	0.06	0.11	0.03	0.11	0.04	0.50	

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Barrio Logan CPU 16: Main St & Cesar	kisting Conditions w LRT Timing Plan: AM Peak									
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT		
Lane Group Flow (vph)	65	51	27	101	8	187	28	498		
v/c Ratio	0.22	0.12	0.09	0.23	0.02	0.09	0.04	0.45		
Control Delay	22.6	20.1	19.7	12.7	8.1	6.6	4.3	5.4		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1		
Total Delay	22.6	20.1	19.7	12.7	8.1	6.6	4.3	5.5		
Queue Length 50th (ft)	22	17	9	18	2	20	5	102		
Queue Length 95th (ft)	48	39	26	51	7	33	m7	69		
Internal Link Dist (ft)		588		983		201		305		
Turn Bay Length (ft)										
Base Capacity (vph)	485	720	515	685	397	2166	721	1106		
Starvation Cap Reductn	0	0	0	0	0	0	0	93		
Spillback Cap Reductn	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.13	0.07	0.05	0.15	0.02	0.09	0.04	0.49		
Intersection Summary m Volume for 95th per										

	•	-	1	+	1	Ť	Ŧ	-	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR	
Lane Group Flow (vph)	127	201	68	615	5	52	144	359	
v/c Ratio	0.73	0.21	0.53	0.68	0.04	0.23	0.26	0.51	
Control Delay	63.8	12.4	55.5	20.7	29.8	17.9	17.9	12.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	63.8	12.4	55.5	20.8	29.8	17.9	17.9	12.6	
Queue Length 50th (ft)	44	26	23	97	2	6	40	41	
Queue Length 95th (ft)	#228	46	#127	134	11	34	97	124	
Internal Link Dist (ft)		578		501		308	11		
Turn Bay Length (ft)	140		100		150				
Base Capacity (vph)	173	1484	128	1428	435	642	907	974	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	64	0	3	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.73	0.14	0.53	0.45	0.01	0.08	0.16	0.37	

Queue shown is maximum after two cycles.

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Barrio Logan CPU 24: National Ave & S	Samps	on St					Existing Conditions w LRT Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	17	83	51	126	76	100	
v/c Ratio	0.06	0.18	0.16	0.27	0.07	0.10	
Control Delay	7.9	7.0	8.6	7.6	5.3	5.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.9	7.0	8.6	7.6	5.3	5.0	
Queue Length 50th (ft)	1	4	3	6	4	4	
Queue Length 95th (ft)	10	27	26	46	24	27	
Internal Link Dist (ft)		581		561	314	281	
Turn Bay Length (ft)							
Base Capacity (vph)	628	929	667	925	1371	1306	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.09	0.08	0.14	0.06	0.08	
Intersection Summary							

Barrio Logan CPU 27: Harbor Dr & Sam	npson	St					Existing Conditions w LR Timing Plan: AM Peal
	۶	-	4	+	t	ţ	
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	11	301	85	602	120	116	
v/c Ratio	0.07	0.22	0.41	0.34	0.42	0.19	
Control Delay	41.1	12.0	41.4	11.7	29.2	14.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	41.1	12.0	41.4	11.7	29.2	14.3	
Queue Length 50th (ft)	3	44	25	70	30	22	
Queue Length 95th (ft)	26	67	109	141	107	75	
Internal Link Dist (ft)		413		428	186	3	
Turn Bay Length (ft)	230		250				
Base Capacity (vph)	309	1742	309	1910	799	1003	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	71	1	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.17	0.28	0.33	0.15	0.12	
Intersection Summary							

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Barrio Logan CPU 32: Harbor Dr & Sch	ley St				Existing Conditions w LRT Timing Plan: AM Peak	
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Lane Group	EBL	EBT	WBT	SBT		Lai
Lane Group Flow (vph)	63	217	603	120		Lai
v/c Ratio	0.35	0.11	0.39	0.23		v/c
Control Delay	35.4	6.1	10.7	9.4		Co
Queue Delay	0.0	0.0	0.0	0.0		Qu
Total Delay	35.4	6.1	10.7	9.4		Tot
Queue Length 50th (ft)	20	20	95	13		Qu
Queue Length 95th (ft)	68	24	66	42		Qu
Internal Link Dist (ft)		378	228	1		Inte
Turn Bay Length (ft)	75					Tur
Base Capacity (vph)	212	2909	2213	958		Bas
Starvation Cap Reductn	0	0	0	0		Sta
Spillback Cap Reductn	0	0	95	0		Spi
Storage Cap Reductn	0	0	0	0		Sto
Reduced v/c Ratio	0.30	0.07	0.28	0.13		Re
Intersection Summary						Inte

33: National Ave & 2	8th St	t							Timing Plan: AM Peak
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	
Lane Group Flow (vph)	132	230	22	92	612	138	30	551	
v/c Ratio	0.59	0.17	0.04	0.55	0.86	0.28	0.05	0.88	
Control Delay	66.0	25.0	10.6	66.5	45.0	28.7	8.9	45.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	66.0	25.0	10.6	66.5	45.0	28.7	8.9	45.8	
Queue Length 50th (ft)	87	52	0	60	373	66	0	315	
Queue Length 95th (ft)	177	97	16	124	547	133	19	597	
Internal Link Dist (ft)		590			82	302		221	
Turn Bay Length (ft)									
Base Capacity (vph)	335	1818	824	278	966	685	805	860	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.39	0.13	0.03	0.33	0.63	0.20	0.04	0.64	
Intersection Summary									

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Barrio Logan CPU 34: Boston Ave & 28	th St							E	0	Conditions w LRT iming Plan: AM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	28	77	11	106	10	424	101	139	743	
v/c Ratio	0.17	0.31	0.06	0.37	0.08	0.21	0.11	0.67	0.28	
Control Delay	19.9	18.7	18.0	10.8	24.6	7.0	2.5	39.0	4.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.9	18.7	18.0	10.8	24.6	7.0	2.5	39.0	4.2	
Queue Length 50th (ft)	7	16	3	5	3	33	0	38	31	
Queue Length 95th (ft)	21	37	11	27	14	61	19	#105	99	
Internal Link Dist (ft)		207		577		298			139	
Turn Bay Length (ft)										
Base Capacity (vph)	481	689	493	666	123	1997	954	208	2680	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	28	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.11	0.02	0.16	0.08	0.21	0.11	0.67	0.28	
Intersection Summary										
# 95th percentile volum	ne exce	eds ca	pacity, o	ueue m	nav be l	onger.				

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	70	135	59	472	25	263	243	716	
v/c Ratio	0.42	0.16	0.19	0.49	0.12	0.23	1.01	0.40	
Control Delay	25.4	13.2	17.6	12.2	31.0	10.7	96.3	10.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
Total Delay	25.4	13.2	17.6	12.2	31.0	10.7	96.3	10.3	
Queue Length 50th (ft)	19	14	15	43	7	20	~94	41	
Queue Length 95th (ft)	50	31	40	76	29	51	#313	195	
Internal Link Dist (ft)		327		314		279		298	
Turn Bay Length (ft)									
Base Capacity (vph)	314	1527	584	1658	276	1810	240	2017	
Starvation Cap Reductn	0	0	0	0	0	0	0	358	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.22	0.09	0.10	0.28	0.09	0.15	1.01	0.43	
Intersection Summary									

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Queue shown is maximum after two cycles.

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Barrio Logan CPU 36: Harbor Dr & 28th	n St							Ex	0		ions w LRT lan: AM Peak
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR	
Lane Group Flow (vph)	64	259	2	15	433	134	8	197	207	26	
v/c Ratio	0.45	0.21	0.01	0.15	0.51	0.22	0.03	0.37	0.38	0.05	
Control Delay	75.0	22.4	32.5	75.2	30.1	4.0	45.7	27.9	28.8	9.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	
Total Delay	75.0	22.4	32.5	75.2	30.1	4.0	45.7	28.1	28.9	9.3	
Queue Length 50th (ft)	63	76	0	15	135	0	6	100	107	4	
Queue Length 95th (ft)	#149	103	7	40	166	28	18	155	166	17	
Internal Link Dist (ft)		247			310		22		134		
Turn Bay Length (ft)	150			75						210	
Base Capacity (vph)	142	1535	480	102	1408	733	662	746	751	514	
Starvation Cap Reductn	0	0	0	0	0	0	0	138	137	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.45	0.17	0.00	0.15	0.31	0.18	0.01	0.32	0.34	0.05	
Intersection Summary											

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	10	297	345	429	124	56	29	46	113	
v/c Ratio	0.08	0.46	0.66	0.28	0.50	0.12	0.07	0.24	0.32	
Control Delay	38.4	13.7	29.2	10.1	39.3	22.4	9.9	35.7	25.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	38.4	13.7	29.2	10.1	39.3	22.4	9.9	35.7	25.7	
Queue Length 50th (ft)	3	20	103	36	41	17	0	15	34	
Queue Length 95th (ft)	21	60	#324	107	#159	51	20	56	83	
Internal Link Dist (ft)		151		932		1629			377	
Turn Bay Length (ft)										
Base Capacity (vph)	123	1055	655	1905	263	757	649	194	676	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.08	0.28	0.53	0.23	0.47	0.07	0.04	0.24	0.17	

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

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39: 32nd St & Wabas											ons w LRT an: AM Peak
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Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SWL	
Lane Group Flow (vph)	68	59	158	364	107	225	449	263	208	501	
v/c Ratio	0.25	0.12	0.45	0.85	0.55	0.68	0.39	0.80	0.24	0.78	
Control Delay	36.1	20.9	39.0	57.6	58.7	52.6	22.5	62.7	33.6	50.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	
Total Delay	36.1	20.9	39.0	57.6	58.7	52.6	22.5	62.7	33.6	50.6	
Queue Length 50th (ft)	39	17	95	251	77	159	129	188	64	180	
Queue Length 95th (ft)	86	54	148	334	110	189	135	#303	94	261	
Internal Link Dist (ft)		174	440			319			1629	472	
Turn Bay Length (ft)											
Base Capacity (vph)	319	562	410	495	370	546	1409	380	1053	764	
Starvation Cap Reductn	0	0	0	0	0	20	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.21	0.10	0.39	0.74	0.29	0.43	0.32	0.69	0.20	0.66	
Intersection Summary											

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	119	178	125	241	367	321	23	119	22	110	912	168
v/c Ratio	0.62	0.46	0.51	0.68	0.51	0.64	0.15	0.25	0.10	0.27	0.65	0.18
Control Delay	51.6	23.2	12.1	42.3	20.2	11.2	39.4	33.5	16.4	16.6	21.5	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3
Total Delay	51.6	23.2	12.1	42.3	20.2	11.2	39.4	33.5	16.4	16.6	22.1	3.9
Queue Length 50th (ft)	45	37	0	84	71	0	8	22	0	21	116	7
Queue Length 95th (ft)	#131	32	24	#253	68	64	36	58	21	52	#303	38
Internal Link Dist (ft)		710			294			151			215	
Turn Bay Length (ft)	230		200	200		200				200		
Base Capacity (vph)	193	391	246	356	716	505	169	542	249	477	1395	931
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	179	364
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.46	0.51	0.68	0.51	0.64	0.14	0.22	0.09	0.23	0.75	0.30

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Barrio Logan CPU 41: Main St & I-15 R	amps					Existing Conditions w LRT Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBT	WBR	SBL	
Lane Group Flow (vph)	42	162	419	115	459	
v/c Ratio	0.15	0.12	0.41	0.21	0.62	
Control Delay	21.4	7.5	13.3	5.2	10.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	21.4	7.5	13.3	5.2	10.2	
Queue Length 50th (ft)	4	6	19	0	20	
Queue Length 95th (ft)	38	28	100	31	113	
Internal Link Dist (ft)		932	312		271	
Turn Bay Length (ft)						
Base Capacity (vph)	304	2169	1710	824	1041	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.07	0.25	0.14	0.44	
Intersection Summary						

Barrio Logan CPU 1: Commercial St & 1	16th S	St				Existing Conditions w LR Timing Plan: PM Peal
	→	+	1	ţ	~	
Lane Group	EBT	WBT	NBT	SBT	SWR	
Lane Group Flow (vph)	226	249	58	56	22	
v/c Ratio	0.52	0.56	0.03	0.03	0.16	
Control Delay	20.5	21.8	6.9	5.8	30.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.5	21.8	6.9	5.8	30.3	
Queue Length 50th (ft)	52	60	2	1	6	
Queue Length 95th (ft)	88	129	13	10	30	
Internal Link Dist (ft)	166	452	369	79		
Turn Bay Length (ft)						
Base Capacity (vph)	693	711	1753	1740	135	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.33	0.35	0.03	0.03	0.16	
Intersection Summary						

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Barrio Logan CPU 3: National Ave & Sig	gsbee	Existing Conditions w LRT Timing Plan: PM Peak					
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	8	165	9	87	120	44	
v/c Ratio	0.02	0.34	0.03	0.18	0.12	0.04	
Control Delay	7.8	7.9	7.9	7.3	5.9	5.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.8	7.9	7.9	7.3	5.9	5.7	
Queue Length 50th (ft)	1	8	1	5	7	2	
Queue Length 95th (ft)	5	34	7	28	38	15	
Internal Link Dist (ft)		588		570	296	200	
Turn Bay Length (ft)							
Base Capacity (vph)	663	937	622	950	1295	1373	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.01	0.18	0.01	0.09	0.09	0.03	
Intersection Summary							

Barrio Logan CPU 12: Kearney St & Ce	sar E	Chave	Existing Conditions w LR Timing Plan: PM Pea			
12. Reamey St & Ce	€	4	<u> </u>	• <u>•</u>	ţ	
Lane Group	WBL	WBT	NBL	NBT	SBT	
Lane Group Flow (vph)	354	356	205	285	344	
v/c Ratio	0.74	0.73	0.50	0.67	0.53	
Control Delay	29.6	26.4	25.5	29.8	26.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.6	26.4	25.5	29.8	26.1	
Queue Length 50th (ft)	108	95	61	89	56	
Queue Length 95th (ft)	227	209	143	197	97	
Internal Link Dist (ft)		251		313	132	
Turn Bay Length (ft)						
Base Capacity (vph)	623	627	585	616	1118	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.57	0.57	0.35	0.46	0.31	
Intersection Summary						

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Barrio Logan CPU 13: Logan Ave & Ces	E>	•		ions w LRT Ian: PM Peak							
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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	113	289	11	23	34	10	289	385	120	456	
v/c Ratio	0.29	0.55	0.04	0.04	0.07	0.06	0.27	0.54	0.63	0.27	
Control Delay	13.8	15.8	11.6	11.3	5.3	26.2	13.8	5.4	43.1	9.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.8	15.8	11.6	11.3	5.3	26.2	13.8	5.4	43.1	9.7	
Queue Length 50th (ft)	18	45	2	3	0	2	25	0	24	24	
Queue Length 95th (ft)	59	126	10	16	13	17	74	50	#158	120	
Internal Link Dist (ft)		618		587			299			313	
Turn Bay Length (ft)											
Base Capacity (vph)	671	893	464	911	776	183	1429	820	189	1778	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.32	0.02	0.03	0.04	0.05	0.20	0.47	0.63	0.26	
Intersection Summary											

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
ane Group Flow (vph)	97	122	55	144	18	569	83	355	70	
/c Ratio	0.60	0.46	0.33	0.49	0.03	0.22	0.17	0.27	0.06	
Control Delay	46.8	26.6	35.6	20.4	2.2	2.1	4.2	3.7	1.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	
Total Delay	46.8	26.6	35.6	20.4	2.2	2.1	4.2	4.2	1.1	
Queue Length 50th (ft)	46	38	25	28	1	22	8	40	0	
Queue Length 95th (ft)	89	82	56	75	m4	31	28	89	10	
Internal Link Dist (ft)		608		780		301		299		
Turn Bay Length (ft)										
Base Capacity (vph)	589	862	601	852	587	2567	479	1293	1113	
Starvation Cap Reductn	0	0	0	0	0	0	0	532	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.14	0.09	0.17	0.03	0.22	0.17	0.47	0.06	

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Barrio Logan CPU 15: Newton Ave & Co	E>	kisting Conditions w LRT Timing Plan: PM Peak							
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	70	102	17	82	9	554	50	384	
v/c Ratio	0.48	0.45	0.12	0.35	0.02	0.21	0.09	0.28	
Control Delay	43.4	30.6	32.2	18.4	0.9	1.3	2.7	3.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay	43.4	30.6	32.2	18.4	0.9	1.3	2.7	3.4	
Queue Length 50th (ft)	34	35	8	12	1	37	1	20	
Queue Length 95th (ft)	56	60	21	38	m1	9	m8	93	
Internal Link Dist (ft)		598		178		305		301	
Turn Bay Length (ft)									
Base Capacity (vph)	590	819	579	784	581	2633	543	1381	
Starvation Cap Reductn	0	0	0	0	0	0	0	424	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.12	0.03	0.10	0.02	0.21	0.09	0.40	
Intersection Summary m Volume for 95th per	centile	queue i	s meter	ed by u	ostream	n signal.			

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	56	43	24	108	4	521	29	333	
v/c Ratio	0.24	0.13	0.10	0.30	0.01	0.23	0.06	0.28	
Control Delay	26.0	20.0	22.4	10.2	7.2	5.7	5.2	4.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	
Total Delay	26.0	20.0	22.4	10.2	7.2	6.1	5.2	4.6	
Queue Length 50th (ft)	27	17	11	13	0	23	2	20	
Queue Length 95th (ft)	45	34	20	31	5	94	m12	91	
Internal Link Dist (ft)		588		983		201		305	
Turn Bay Length (ft)									
Base Capacity (vph)	583	840	616	793	555	2312	490	1201	
Starvation Cap Reductn	0	0	0	0	0	1224	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.05	0.04	0.14	0.01	0.48	0.06	0.28	

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Barrio Logan CPU 17: Harbor Dr & Ces	EX	Existing Conditions w LRT Timing Plan: PM Peak							
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR	
Lane Group Flow (vph)	391	755	21	229	13	115	67	266	
v/c Ratio	0.77	0.47	0.18	0.40	0.08	0.54	0.16	0.43	
Control Delay	44.5	13.3	52.2	20.4	38.0	42.0	23.5	12.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.5	13.3	52.2	20.4	38.0	42.0	23.5	12.1	
Queue Length 50th (ft)	154	103	9	47	5	43	24	22	
Queue Length 95th (ft)	#644	195	47	43	26	123	68	96	
Internal Link Dist (ft)		578		501		308	11		
Turn Bay Length (ft)	140		100		150				
Base Capacity (vph)	509	1751	204	1144	410	544	668	810	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	57	0	7	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.77	0.43	0.10	0.21	0.03	0.21	0.10	0.33	
Intersection Summary									

Barrio Logan CPU 24: National Ave & S	amps	Existing Conditions w LRT Timing Plan: PM Peak					
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	28	136	25	115	132	96	
v/c Ratio	0.09	0.28	0.08	0.24	0.12	0.10	
Control Delay	8.2	8.4	8.2	6.8	5.2	5.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.2	8.4	8.2	6.8	5.2	5.5	
Queue Length 50th (ft)	2	8	2	5	6	5	
Queue Length 95th (ft)	17	52	15	37	41	33	
Internal Link Dist (ft)		581		561	314	281	
Turn Bay Length (ft)							
Base Capacity (vph)	655	956	639	934	1362	1220	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.14	0.04	0.12	0.10	0.08	
Intersection Summary							

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27: Harbor Dr & Sam	nosan	St					Existing Conditions w LRT Timing Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	64	866	23	254	246	125	
v/c Ratio	0.43	0.54	0.13	0.22	0.64	0.19	
Control Delay	51.4	18.0	42.5	14.5	34.0	12.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	51.4	18.0	42.5	14.5	34.0	12.9	
Queue Length 50th (ft)	20	129	7	38	68	20	
Queue Length 95th (ft)	#119	213	38	54	159	69	
Internal Link Dist (ft)		413		428	186	3	
Turn Bay Length (ft)	230		250				
Base Capacity (vph)	149	1597	238	1473	921	1075	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	73	1	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.43	0.54	0.10	0.18	0.27	0.12	
Intersection Summary # 95th percentile volum							

Barrio Logan CPU 32: Harbor Dr & Schl	ley St		Existing Conditions w LR Timing Plan: PM Pea		
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Lane Group	EBL	EBT	WBT	SBT	
Lane Group Flow (vph)	79	749	273	68	
v/c Ratio	0.42	0.36	0.19	0.15	
Control Delay	38.8	7.2	9.5	10.6	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	38.8	7.2	9.5	10.6	
Queue Length 50th (ft)	21	82	36	8	
Queue Length 95th (ft)	#99	79	23	29	
Internal Link Dist (ft)		378	228	1	
Turn Bay Length (ft)	75				
Base Capacity (vph)	202	2800	2092	944	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	82	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.39	0.27	0.14	0.07	
Intersection Summary					
# 95th percentile volun	ne exce	eeds ca	pacity, o	queue n	nay be longer.
Queue shown is maxi	imum a	after two	cycles		

Queue shown is maximum after two cycles.

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Barrio Logan CPU 33: National Ave & 2	8th St	t						Ex	kisting Conditions w LRT Timing Plan: PM Peak
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	
Lane Group Flow (vph)	108	499	98	228	641	127	50	415	
v/c Ratio	0.48	0.41	0.16	0.71	0.86	0.24	0.10	0.81	
Control Delay	55.7	27.3	7.1	52.4	37.8	28.5	8.5	43.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	55.7	27.3	7.1	52.4	37.8	28.5	8.5	43.5	
Queue Length 50th (ft)	55	107	0	115	295	50	0	198	
Queue Length 95th (ft)	164	243	39	225	463	139	30	474	
Internal Link Dist (ft)		590			82	302		221	
Turn Bay Length (ft)									
Base Capacity (vph)	356	1773	842	568	1076	833	799	810	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.30	0.28	0.12	0.40	0.60	0.15	0.06	0.51	
ntersection Summary									

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	50	174	10	79	8	580	228	263	775	
v/c Ratio	0.22	0.53	0.05	0.23	0.07	0.35	0.27	0.90	0.32	
Control Delay	20.4	24.6	17.7	9.4	28.1	11.7	3.0	60.0	6.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.4	24.6	17.7	9.4	28.1	11.7	3.0	60.0	6.0	
Queue Length 50th (ft)	14	48	3	5	3	64	0	85	44	
Queue Length 95th (ft)	34	88	10	20	14	112	34	#222	131	
Internal Link Dist (ft)		207		577		298			139	
Turn Bay Length (ft)										
Base Capacity (vph)	505	709	454	669	116	1644	858	293	2438	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	3	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.25	0.02	0.12	0.07	0.35	0.27	0.90	0.32	

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	218	474	94	433	27	890	342	658	
v/c Ratio	0.89	0.43	0.41	0.37	0.20	0.88	0.86	0.38	
Control Delay	64.3	23.0	28.9	8.4	44.0	38.7	55.2	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	
Total Delay	64.3	23.0	28.9	8.4	44.0	38.7	55.2	13.9	
Queue Length 50th (ft)	112	104	40	29	15	243	189	95	
Queue Length 95th (ft)	#196	127	77	53	38	292	#318	163	
Internal Link Dist (ft)		327		314		290		298	
Turn Bay Length (ft)									
Base Capacity (vph)	286	1292	269	1325	144	1115	436	1785	
Starvation Cap Reductn	0	0	0	0	0	0	0	648	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.76	0.37	0.35	0.33	0.19	0.80	0.78	0.58	

Queue s	hown is	maximum	after	two	cycles.
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	162	566	1	10	249	273	210	283	296	15
v/c Ratio	0.83	0.47	0.00	0.15	0.34	0.42	0.66	0.66	0.69	0.04
Control Delay	90.7	27.7	34.0	80.2	28.0	4.4	61.5	41.3	42.8	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.0
Total Delay	90.7	27.7	34.0	80.2	28.0	4.4	61.5	41.9	43.4	11.8
Queue Length 50th (ft)	~201	186	0	10	73	0	194	180	194	3
Queue Length 95th (ft)	#366	232	6	29	91	26	196	276	293	13
nternal Link Dist (ft)		247			310		22		129	
Turn Bay Length (ft)	150			75						210
Base Capacity (vph)	196	1465	469	66	1162	727	543	611	614	406
Starvation Cap Reductn	0	0	0	0	0	0	0	106	103	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.39	0.00	0.15	0.21	0.38	0.39	0.56	0.58	0.04

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

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Barrio Logan CPU 38: Main St & 32nd S	St							Ex		Conditions w LRT iming Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	28	704	233	381	206	126	345	138	99	
v/c Ratio	0.25	0.82	0.74	0.25	0.72	0.29	0.55	0.58	0.31	
Control Delay	44.8	34.9	47.6	12.8	48.2	28.5	6.9	42.9	23.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.8	34.9	47.6	12.8	48.2	28.5	6.9	42.9	23.9	
Queue Length 50th (ft)	12	142	98	34	88	53	0	59	32	
Queue Length 95th (ft)	40	#254	#240	97	#219	101	61	129	71	
Internal Link Dist (ft)		151		932		1629			377	
Turn Bay Length (ft)										
Base Capacity (vph)	111	962	352	1546	320	590	728	300	542	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.25	0.73	0.66	0.25	0.64	0.21	0.47	0.46	0.18	
Intersection Summary										
# 95th percentile volun	ne exce	eeds ca	pacity, o	queue n	hay be l	onger.				

Barrio Logan CPU 39: 32nd St & Wabas	sh St							Ex	0		ions w LRT lan: PM Peał
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Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SWL	
Lane Group Flow (vph)	167	125	142	365	105	284	521	199	318	253	
v/c Ratio	0.54	0.24	0.41	0.84	0.50	0.65	0.43	0.70	0.39	0.55	
Control Delay	39.4	14.4	34.9	52.0	53.3	45.6	21.8	53.7	32.2	43.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	39.4	14.4	34.9	52.0	53.3	45.6	21.8	53.7	32.2	43.9	
Queue Length 50th (ft)	87	20	71	209	64	166	132	120	84	77	
Queue Length 95th (ft)	176	70	136	340	134	#340	214	196	132	132	
Internal Link Dist (ft)		174	440			351			1629	472	
Turn Bay Length (ft)											
Base Capacity (vph)	394	651	444	559	310	502	1404	419	1109	706	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.42	0.19	0.32	0.65	0.34	0.57	0.37	0.47	0.29	0.36	
Intersection Summary											

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

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Barrio Logan CPU 40: Harbor Dr & 32n	d St							Ex		Condit iming P		
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	299	995	80	37	381	459	60	609	121	270	247	222
v/c Ratio	0.82	0.83	0.13	0.33	0.69	0.79	0.48	0.84	0.29	0.79	0.19	0.23
Control Delay	63.8	36.9	10.0	62.3	40.9	15.7	66.2	55.8	9.9	46.9	18.4	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.2	0.1
Total Delay	63.8	36.9	10.0	62.3	40.9	15.7	66.2	55.8	9.9	52.3	18.6	2.0
Queue Length 50th (ft)	191	~363	12	24	135	0	39	205	1	118	44	16
Queue Length 95th (ft)	#345	263	36	52	80	0	85	#307	38	#247	71	43
Internal Link Dist (ft)		710			294			45			182	
Turn Bay Length (ft)	230		200	200		200				200		
Base Capacity (vph)	364	1196	594	134	562	583	151	728	411	342	1293	962
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	36	505	201
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.83	0.13	0.28	0.68	0.79	0.40	0.84	0.29	0.88	0.31	0.29
Intersection Summary												
 Volume exceeds cap 	oacity, o	queue is	theore	tically ir	nfinite.							
Queue shown is max	imum a	after two	cycles									

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Barrio Logan CPU 41: Main St & I-15 Ra	amps					Existing Conditions w LR Timing Plan: PM Pea
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Lane Group	EBL	EBT	WBT	WBR	SBL	
Lane Group Flow (vph)	279	636	309	173	262	
v/c Ratio	0.61	0.32	0.41	0.37	0.55	
Control Delay	24.7	6.6	18.9	6.5	15.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.7	6.6	18.9	6.5	15.2	
Queue Length 50th (ft)	58	34	35	0	39	
Queue Length 95th (ft)	#206	106	86	41	102	
Internal Link Dist (ft)		932	312		271	
Turn Bay Length (ft)						
Base Capacity (vph)	536	2343	1297	690	754	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.52	0.27	0.24	0.25	0.35	
Intersection Summary # 95th percentile volun						

Queue shown is maximum after two cycles.

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Barrio Logan CPU						Horizon Year Alt 1 with Improvements
1: Commercial St & 1	16th S	St				Timing Plan: AM Peak
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Lane Group	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	290	26	445	401	471	
v/c Ratio	0.47	0.09	0.75	0.24	0.32	
Control Delay	15.5	11.5	23.7	9.8	8.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.5	11.5	23.7	9.8	8.5	
Queue Length 50th (ft)	68	5	128	35	34	
Queue Length 95th (ft)	120	18	215	82	84	
Internal Link Dist (ft)	166		452	369	79	
Turn Bay Length (ft)						
Base Capacity (vph)	796	381	776	1637	1469	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.36	0.07	0.57	0.24	0.32	

Barrio Logan CPU Horizon Year Alt 1 with Improvements Timing Plan: AM Peak 2: National Ave & 16th St ٭ < ← t ŧ -Lane Group EBL EBT WBL WBT NBT SBT Lane Group Flow (vph) 43 254 575 93 199 3 v/c Ratio 0.17 0.35 0.01 0.77 0.14 0.28 Control Delay 10.6 10.2 7.7 20.4 10.9 9.2 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 10.6 10.2 7.7 20.4 10.9 9.2 Queue Length 50th (ft) 8 44 137 13 21 1 Queue Length 95th (ft) Internal Link Dist (ft) 23 81 4 227 49 78 588 202 369 711 Turn Bay Length (ft) Base Capacity (vph) 354 1038 610 1055 663 707 Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.12 0.24 0.00 0.55 0.14 0.28 Intersection Summary

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Intersection Summary

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Barrio Logan CPU 3: National Ave & Sig	asbee	St				I	Horizon Year Alt 1 with Improvements Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	11	207	17	438	159	122	
v/c Ratio	0.04	0.29	0.04	0.61	0.29	0.20	
Control Delay	9.1	8.3	8.8	13.4	7.8	6.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.1	8.3	8.8	13.4	7.8	6.0	
Queue Length 50th (ft)	1	12	1	36	10	6	
Queue Length 95th (ft)	9	69	12	169	52	37	
Internal Link Dist (ft)		588		570	296	200	
Turn Bay Length (ft)							
Base Capacity (vph)	439	1101	684	1136	866	963	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.19	0.02	0.39	0.18	0.13	
Intersection Summary							

Barrio Logan CPU 6: Harbor Dr & Sigst	bee St					Horizon Year Alt 1 with Improvements Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBT	SBL	SBR	
Lane Group Flow (vph)	41	522	1837	120	120	
v/c Ratio	0.28	0.21	0.82	0.42	0.34	
Control Delay	34.0	3.6	14.2	27.6	8.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.0	3.6	14.2	27.6	8.3	
Queue Length 50th (ft)	13	24	152	35	0	
Queue Length 95th (ft)	44	51	#537	87	38	
Internal Link Dist (ft)		158	581	318		
Turn Bay Length (ft)	250					
Base Capacity (vph)	145	2575	2289	455	496	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.28	0.20	0.80	0.26	0.24	
Intersection Summary						
# 95th percentile volur				queue m	nay be l	onger.

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Barrio Logan CPU 7: Logan Ave & Bear	rdsley	St				Horizon Year Alt 1 with Improvements Timing Plan: AM Peak
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Lane Group	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	211	95	220	108	590	
v/c Ratio	0.63	0.47	0.37	0.41	0.80	
Control Delay	33.7	38.1	18.4	17.6	32.9	
Queue Delay	0.2	0.0	0.0	0.0	0.0	
Total Delay	33.9	38.1	18.4	17.6	32.9	
Queue Length 50th (ft)	77	37	64	13	225	
Queue Length 95th (ft)	149	88	123	56	#488	
Internal Link Dist (ft)	154		618	298	247	
Turn Bay Length (ft)						
Base Capacity (vph)	434	221	730	444	734	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	19	1	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.51	0.43	0.30	0.24	0.80	
Intersection Summary						

Timing Plan: AM Peak 8: National Ave & Beardsley St ٦ < ← ŧ t • Lane Group EBL EBT WBL WBT NBT SBT Lane Group Flow (vph) 268 262 531 91 410 9 v/c Ratio 0.04 0.36 0.69 0.72 0.14 0.75 Control Delay 11.0 12.0 23.7 18.5 6.2 22.6 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 11.0 12.0 23.7 18.5 6.2 22.6 42 Queue Length 50th (ft) 49 97 5 79 1 Queue Length 95th (ft) Internal Link Dist (ft) 10 122 166 270 32 229 299 298 570 608 Turn Bay Length (ft) Base Capacity (vph) 281 1013 514 994 755 902 Starvation Cap Reductn 0 0 0 0 0 9 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.03 0.26 0.51 0.53 0.10 0.55 Intersection Summary

Horizon Year Alt 1 with Improvements

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

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Barrio Logan CPU

Barrio Logan CPU	Horizon Year Alt 1 with Improvements
12: Kearney St & Cesar E. Chavez Pkwy	Timing Plan: AM Peak

Lane Group	WBL	WBT	NBL	NBT	SBT	
Lane Group Flow (vph)	568	589	279	285	414	
v/c Ratio	1.00	1.01	0.74	0.72	0.59	
Control Delay	66.6	67.1	39.3	37.4	28.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	66.6	67.1	39.3	37.4	28.7	
Queue Length 50th (ft)	248	~251	110	111	84	
Queue Length 95th (ft)	#600	#610	215	216	138	
Internal Link Dist (ft)		251		313	132	
Turn Bay Length (ft)						
Base Capacity (vph)	567	582	482	507	946	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	1.00	1.01	0.58	0.56	0.44	
Intersection Summary						
 Volume exceeds cap 	pacity, o	queue is	theore	tically in	finite.	
Oursus shows is made			au cal a a			

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
ane Group Flow (vph)	152	304	130	109	353	83	109	326	304	76	1077	_
/c Ratio	0.64	0.70	0.28	0.49	0.57	0.15	1.14	0.25	0.38	0.46	0.78	
Control Delay	38.6	35.8	5.5	27.2	24.6	4.0	165.5	14.3	2.8	45.9	26.1	
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	
Total Delay	38.6	35.8	5.5	27.3	24.6	4.0	165.5	14.3	2.9	45.9	26.5	
Queue Length 50th (ft)	71	144	0	44	148	0	~64	36	0	35	218	
Queue Length 95th (ft)	106	179	33	72	173	22 ו	m#150	m96	m25	#113	#458	
nternal Link Dist (ft)		618			587			299			313	
urn Bay Length (ft)												
Base Capacity (vph)	381	699	661	318	885	777	96	1329	802	166	1373	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	25	0	0	
Spillback Cap Reductn	0	0	38	15	0	0	0	0	0	0	52	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.43	0.21	0.36	0.40	0.11	1.14	0.25	0.39	0.46	0.82	
ntersection Summary												

Queue shown is maximum after two cycles. M Volume for 95th percentile queue is metered by upstream signal.

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Barrio Logan CPU 14: National Ave & C	Cesar	lorizor	Year			proven Plan: AM						
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Group Flow (vph)	207	272	196	130	380	130	98	684	76	810	337	
v/c Ratio	0.91	0.44	0.32	0.43	0.62	0.21	0.80	0.38	0.24	0.88	0.37	
Control Delay	67.3	22.5	7.2	24.4	26.5	4.3	62.4	9.8	3.9	19.6	0.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	
Total Delay	67.3	22.5	7.2	24.4	26.5	4.3	62.4	9.8	3.9	19.9	1.1	
Queue Length 50th (ft)	91	97	17	46	146	0	39	100	6	380	0	
Queue Length 95th (ft)	#211	160	59	94	230	33	#136	158	m8	#588	m0	
Internal Link Dist (ft)		608			780			301		299		
Turn Bay Length (ft)												
Base Capacity (vph)	258	699	683	346	699	675	123	1820	311	916	906	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	8	152	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.80	0.39	0.29	0.38	0.54	0.19	0.80	0.38	0.24	0.89	0.45	
Intersection Summary												
# 95th percentile volur	ne exce	eds ca	bacity, o	queue n	nay be l	onger.						
Queue shown is max	imum a	fter two	cycles									

m Volume for 95th percentile queue is metered by upstream signal.

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	82	108	43	125	43	479	103	1032	
v/c Ratio	0.52	0.40	0.27	0.46	0.35	0.19	0.16	0.77	
Control Delay	43.7	19.0	34.4	20.6	11.8	1.9	2.5	6.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	
Total Delay	43.7	19.0	34.4	20.6	11.8	1.9	2.5	7.3	
Queue Length 50th (ft)	39	20	20	25	4	17	8	92	
Queue Length 95th (ft)	78	61	47	69	m19	25	m14	m161	
Internal Link Dist (ft)		598		178		305		301	
Turn Bay Length (ft)									
Base Capacity (vph)	426	615	432	622	122	2585	631	1346	
Starvation Cap Reductn	0	0	0	0	0	0	0	65	
Spillback Cap Reductn	0	3	0	0	0	0	0	81	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.18	0.10	0.20	0.35	0.19	0.16	0.82	

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Barrio Logan CPU 16: Main St & Cesar	E. Ch	avez I	F	Horizon Year Alt 1 with Improvements Timing Plan: AM Peak						
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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	163	223	76	359	207	76	468	163	826	
v/c Ratio	0.72	0.42	0.25	0.67	0.36	0.72	0.25	0.36	0.86	
Control Delay	42.4	23.1	21.0	30.3	4.5	59.0	7.9	8.1	18.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	2.8	
Total Delay	42.4	23.1	21.0	30.3	4.5	59.0	8.2	8.1	21.7	
Queue Length 50th (ft)	67	80	27	145	0	28	50	26	180	
Queue Length 95th (ft)	122	122	52	203	38	#119	91	m55	#666	
Internal Link Dist (ft)		588		983			201		305	
Turn Bay Length (ft)										
Base Capacity (vph)	332	785	448	792	761	105	1856	449	961	
Starvation Cap Reductn	0	0	0	0	0	0	741	0	65	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.49	0.28	0.17	0.45	0.27	0.72	0.42	0.36	0.92	
Intersection Summary										
# 95th percentile volun	ne exce	eds ca	pacity, o	queue n	nay be l	onger.				
Queue shown is maxi	mum a	fter two	cycles			-				
m Volume for 95th per	centile	queue i	is meter	ed by u	pstream	n signal.				

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT	SBR	
ane Group Flow (vph)	128	476	87	1241	11	15	29	168	438	
v/c Ratio	0.53	0.38	0.81	0.99	0.09	0.07	0.15	0.35	0.74	
Control Delay	50.8	14.4	90.9	44.9	33.5	32.1	13.4	23.7	26.2	
Queue Delay	0.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.8	14.4	90.9	56.9	33.5	32.1	13.4	23.7	26.2	
Queue Length 50th (ft)	27	72	37	263	4	6	0	57	101	
Queue Length 95th (ft)	#102	118	#187	#607	21	25	23	108	256	
nternal Link Dist (ft)		578		501		308		11		
Turn Bay Length (ft)	140		100		150					
Base Capacity (vph)	242	1274	108	1279	342	621	497	748	776	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	66	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.53	0.37	0.81	1.02	0.03	0.02	0.06	0.22	0.56	

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Barrio Logan CPU 23: Logan Ave & Sar	mpsor	St	F	lorizor	n Year	Alt 1 with Improvements Timing Plan: AM Peak			
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	120	420	99	147	238	521	67	252	
v/c Ratio	0.28	0.65	0.42	0.23	0.51	0.64	0.26	0.31	
Control Delay	13.0	15.7	18.2	8.0	14.4	13.6	12.2	9.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	
Total Delay	13.0	15.7	18.2	8.0	14.4	13.7	12.2	9.6	
Queue Length 50th (ft)	16	54	14	11	31	66	8	29	
Queue Length 95th (ft)	67	193	66	55	125	233	42	105	
Internal Link Dist (ft)		167		249		281		225	
Turn Bay Length (ft)									
Base Capacity (vph)	653	953	361	953	630	1080	349	1106	
Starvation Cap Reductn	0	0	0	0	0	54	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.44	0.27	0.15	0.38	0.51	0.19	0.23	
Intersection Summary									

24: National Ave & S		0 0.					0
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	82	70	52	222	128	310	
v/c Ratio	0.28	0.14	0.15	0.43	0.14	0.36	
Control Delay	11.1	7.4	9.1	8.1	6.2	6.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.1	7.4	9.1	8.1	6.2	6.8	
Queue Length 50th (ft)	7	4	4	11	8	18	
Queue Length 95th (ft)	39	29	26	64	43	91	
Internal Link Dist (ft)		581		561	314	281	
Turn Bay Length (ft)							
Base Capacity (vph)	556	944	690	929	1293	1174	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	6	0	0	11	14	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.15	0.07	0.08	0.24	0.10	0.26	

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Barrio Logan CPU						I	Horizon Year Alt 1 with Improvements
27: Harbor Dr & Sam	npson	St					Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	11	808	82	1444	122	187	
v/c Ratio	0.08	0.56	0.41	0.81	0.45	0.37	
Control Delay	45.1	17.9	43.8	21.1	31.9	21.0	
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	
Total Delay	45.1	17.9	43.8	21.5	31.9	21.0	
Queue Length 50th (ft)	4	153	31	245	40	54	
Queue Length 95th (ft)	27	225	109	#735	113	121	
Internal Link Dist (ft)		413		428	186	3	
Turn Bay Length (ft)	230		250				
Base Capacity (vph)	261	1467	332	1790	733	821	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	69	1	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.55	0.25	0.84	0.17	0.23	
Intersection Summary							
# 95th percentile volun	ne exce	eds ca	pacity, o	queue m	ay be lo	onger.	

Barrio Logan CPU 32: Harbor Dr & Schl	ey St			Horizon Year Alt 1 with Improvements Timing Plan: AM Peak	
	۶	-	+	~	
Lane Group	EBL	EBT	WBT	SBR	
Lane Group Flow (vph)	80	548	1694	88	
v/c Ratio	0.54	0.23	0.90	0.27	
Control Delay	49.5	4.7	28.5	3.9	
Queue Delay	0.0	0.0	2.2	0.0	
Total Delay	49.5	4.7	30.7	3.9	
Queue Length 50th (ft)	30	52	~457	0	
Queue Length 95th (ft)	#99	45	#517	0	
Internal Link Dist (ft)		378	228		
Turn Bay Length (ft)	75				
Base Capacity (vph)	154	2402	1873	328	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	90	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.52	0.23	0.95	0.27	
Intersection Summary					
 Volume exceeds cap 	acity, d	queue is	s theore	tically in	nfinite.
Queue shown is maxi	mum a	after two	cycles.		
# 95th percentile volum	ne exce	eds ca	pacity, c	queue n	nay be longer.

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR	
Lane Group Flow (vph)	115	280	20	209	817	143	93	348	334	
v/c Ratio	0.61	0.20	0.03	0.80	0.91	0.36	0.18	0.85	0.49	
Control Delay	74.3	28.1	12.3	71.5	43.9	39.2	7.8	61.1	7.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	74.3	28.1	12.3	71.5	43.9	39.2	7.8	61.1	7.0	
Queue Length 50th (ft)	94	80	0	168	602	93	0	272	5	
Queue Length 95th (ft)	#212	142	20	279	#968	171	42	#467	81	
Internal Link Dist (ft)		590			82	395		221		
Turn Bay Length (ft)										
Base Capacity (vph)	241	1662	754	421	1087	543	694	565	828	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.48	0.17	0.03	0.50	0.75	0.26	0.13	0.62	0.40	

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	250	348	49	206	98	804	174	1272	
v/c Ratio	0.75	0.62	0.20	0.35	0.57	0.60	0.97	0.59	
Control Delay	32.8	18.4	16.0	7.6	44.7	18.7	96.9	15.7	
Queue Delay	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.5	
Total Delay	32.8	18.7	16.0	7.6	44.7	18.7	96.9	16.1	
Queue Length 50th (ft)	79	83	13	19	34	116	64	118	
Queue Length 95th (ft)	150	151	33	57	#112	225	#208	217	
Internal Link Dist (ft)		207		577		298		198	
Turn Bay Length (ft)									
Base Capacity (vph)	460	753	343	766	171	1337	179	2143	
Starvation Cap Reductn	0	0	0	0	0	0	0	406	
Spillback Cap Reductn	0	82	38	0	0	0	0	128	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.54	0.52	0.16	0.27	0.57	0.60	0.97	0.73	

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

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35: Main St & 28th S	t								Timing Plan: AM Pea
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	207	489	98	729	49	315	196	1087	
v/c Ratio	0.95	0.32	0.27	0.44	0.68	0.34	0.88	0.91	
Control Delay	78.8	16.7	19.6	17.0	90.0	16.2	79.7	39.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.2	
Total Delay	78.8	16.7	19.6	17.0	90.0	16.2	79.7	75.2	
Queue Length 50th (ft)	128	99	38	149	32	45	126	318	
Queue Length 95th (ft)	#281	137	78	200	#95	80	#263	#444	
Internal Link Dist (ft)		327		314		279		298	
Turn Bay Length (ft)									
Base Capacity (vph)	220	1548	371	1651	72	1060	224	1272	
Starvation Cap Reductn	0	0	0	0	0	0	0	257	
Spillback Cap Reductn	0	0	0	2	0	2	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.94	0.32	0.26	0.44	0.68	0.30	0.88	1.07	
Intersection Summary									
# 95th percentile volum	ne exce	eds ca	pacity, o	queue m	ay be l	onger.			

Ane Group Flow (vph) 54 728 4 18 1024 126 /c Ratio 0.20 0.66 0.01 0.15 0.96 0.19 0 Control Delay 66.9 32.3 33.0 75.0 53.1 8.9 4 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 otal Delay 66.9 32.3 33.0 75.0 53.1 8.9 4 Queue Length 50th (ft) 26 254 1 18 ~442 20 Queue Length 95th (ft) 52 309 12 48 #591 56	NBT SBL 9 408 0.03 0.36 44.1 25.3 0.0 0.1 44.1 25.4 6 103	16 0.03 17.4 0.0	SBR 27 0.05 9.4 0.0 9.4	
v/c Ratio 0.20 0.66 0.01 0.15 0.96 0.19 0 Control Delay 66.9 32.3 33.0 75.0 53.1 8.9 4 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 66.9 32.3 33.0 75.0 53.1 8.9 4 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 66.9 32.3 33.0 75.0 53.1 8.9 4 Queue Length 50th (ft) 26 254 1 18 ~442 20 Queue Length 95th (ft) 52 309 12 48 #591 56	0.03 0.36 44.1 25.3 0.0 0.1 44.1 25.4	0.03 17.4 0.0	0.05 9.4 0.0	
Control Delay 66.9 32.3 33.0 75.0 53.1 8.9 4 Queue Delay 0.0	44.125.30.00.144.125.4	17.4 0.0	9.4 0.0	
Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 66.9 32.3 33.0 75.0 53.1 8.9 4 Queue Length 50th (ft) 26 254 1 18 ~442 20 Queue Length 95th (ft) 52 309 12 48 #591 56	0.0 0.1 44.1 25.4	0.0	0.0	
Total Delay 66.9 32.3 33.0 75.0 53.1 8.9 4 Queue Length 50th (ft) 26 254 1 18 -442 20 Queue Length 95th (ft) 52 309 12 48 #591 56	44.1 25.4			
Queue Length 50th (ft) 26 254 1 18 ~442 20 Queue Length 95th (ft) 52 309 12 48 #591 56		17.4	94	
Queue Length 95th (ft) 52 309 12 48 #591 56	6 103		5.4	
		6	4	
	23 149	19	18	
Internal Link Dist (ft) 247 310	22	134		
Turn Bay Length (ft) 150 75			210	
Base Capacity (vph) 413 1491 466 129 1348 747 (685 1598	867	533	
Starvation Cap Reductn 0 0 0 0 0 0	0 290	0	0	
Spillback Cap Reductn 0 0 0 0 0 0	0 0	0	0	
Storage Cap Reductn 0 0 0 0 0 0	0 0	0	0	
Reduced v/c Ratio 0.13 0.49 0.01 0.14 0.76 0.17 0	0.01 0.31	0.02	0.05	

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU	ŀ
37: Boston Ave & I-5 SB On-ram	D

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Horizon Year Alt 1 with Improvements Timing Plan: AM Peak

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Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	220	227	222
v/c Ratio	0.57	0.59	0.37
Control Delay	24.1	22.2	19.1
Queue Delay	0.0	0.0	0.0
Total Delay	24.1	22.2	19.1
Queue Length 50th (ft)	51	46	50
Queue Length 95th (ft)	139	129	146
Internal Link Dist (ft)	577	323	73
Turn Bay Length (ft)			
Base Capacity (vph)	860	699	666
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.26	0.32	0.33
Intersection Summary			
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	41	378	341	623	120	54	28	42	136	
v/c Ratio	0.22	0.54	0.71	0.41	0.50	0.11	0.06	0.22	0.41	
Control Delay	35.5	13.8	32.7	14.9	39.2	22.2	10.6	35.3	25.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	35.5	13.8	32.7	14.9	39.2	22.2	10.6	35.3	25.1	
Queue Length 50th (ft)	14	25	108	64	41	13	0	14	37	
Queue Length 95th (ft)	54	74	#325	188	#146	53	21	54	98	
Internal Link Dist (ft)		151		932		1629			377	
Turn Bay Length (ft)										
Base Capacity (vph)	236	1081	601	1720	267	672	579	245	599	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.35	0.57	0.36	0.45	0.08	0.05	0.17	0.23	

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU						F	lorizor	n Year			provements
39: 32nd St & Waba	sh St									Iming P	lan: AM Peak
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Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SWL	
Lane Group Flow (vph)	98	272	321	184	76	234	375	229	555	946	
v/c Ratio	0.49	0.46	1.34	0.36	0.54	0.78	0.32	0.85	0.69	1.30	
Control Delay	50.8	39.7	214.0	40.3	76.7	73.3	26.7	84.7	53.2	185.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	
Total Delay	50.8	39.7	214.0	40.3	76.7	73.9	26.7	84.7	53.2	185.1	
Queue Length 50th (ft)	74	191	~393	132	69	209	128	205	241	~586	
Queue Length 95th (ft)	149	302	#625	218	125	304	171	#355	320	#772	
Internal Link Dist (ft)		174	440			319			1629	472	
Turn Bay Length (ft)											
Base Capacity (vph)	199	588	240	512	264	393	1268	300	860	730	
Starvation Cap Reductn	0	0	0	0	0	29	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.49	0.46	1.34	0.36	0.29	0.64	0.30	0.76	0.65	1.30	
Intersection Summary											
 Volume exceeds cap 	acity, d	queue i	s theore	tically ir	finite.						
Queue shown is maxi	mum a	fter two	o cycles								
# 95th percentile volun		ch shad	nacity (av he li	onger					

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Lane Group Flow (vph)	76	714	152	326	799	424	33	174	33	141	1130	4
v/c Ratio	0.63	1.82	0.58	0.86	0.88	0.72	0.21	0.38	0.15	0.36	0.85	0.0
Control Delay	63.7	399.9	15.7	55.7	32.9	16.0	39.0	35.2	14.7	20.5	30.5	5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.
Total Delay	63.7	399.9	15.7	55.7	32.9	16.0	39.0	35.2	14.7	20.5	33.0	5
Queue Length 50th (ft)	31	~278	7	125	~190	27	13	34	0	29	150	
Queue Length 95th (ft)	#122	#220	44	#377	157	#188	47	82	27	93	#603	2
Internal Link Dist (ft)		710			294			151			215	
Turn Bay Length (ft)	230		200	200		200				200		
Base Capacity (vph)	120	393	261	378	905	588	193	530	253	403	1332	- 77
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	107	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.63	1.82	0.58	0.86	0.88	0.72	0.17	0.33	0.13	0.35	0.92	0.0
Intersection Summary												

95th percentile volume exceeds capacity, queue may be

Queue shown is maximum after two cycles.

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU	Horizon Year Alt 1 with Improvements
41: Main St & I-15 Ramps	Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBT	WBR	SBL	
Lane Group Flow (vph)	51	197	540	116	453	
v/c Ratio	0.19	0.14	0.46	0.19	0.65	
Control Delay	22.9	7.1	12.7	4.6	10.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.9	7.1	12.7	4.6	10.9	
Queue Length 50th (ft)	6	8	26	0	21	
Queue Length 95th (ft)	47	35	124	30	133	
Internal Link Dist (ft)		932	312		271	
Turn Bay Length (ft)						
Base Capacity (vph)	271	2274	1888	899	1007	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.09	0.29	0.13	0.45	
Intersection Summary						

Barrio Logan CPU 42: I-5 SB off-ramp &	& 28th	St		Horizon Year Alt 1 with Improvements Timing Plan: AM Peak					
i	\mathbf{i}	Ť	ţ						
Lane Group	EBR	NBT	SBT						
Lane Group Flow (vph)	995	1141	451						
v/c Ratio	0.95	0.32	0.36						
Control Delay	31.1	0.2	21.0						
Queue Delay	2.3	0.0	0.0						
Total Delay	33.4	0.2	21.1						
Queue Length 50th (ft)	284	0	54						
Queue Length 95th (ft)	#597	0	80						
Internal Link Dist (ft)		198	395						
Turn Bay Length (ft)									
Base Capacity (vph)	1052	3539	1267						
Starvation Cap Reductn	0	0	0						
Spillback Cap Reductn	22	0	58						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.97	0.32	0.37						
Intersection Summary									
				queue may be longer.					
Queue shown is maximum after two cycles									

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Barrio Logan CPU	Horizon Year Alt 1 with Improvements
170: Cesar E. Chavez Pkwy &	Timing Plan: AM Peak
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	214	503	
v/c Ratio	0.06	0.06	0.07	0.23	
Control Delay	21.6	21.6	0.5	4.4	
Queue Delay	0.0	0.0	0.0	0.1	
Total Delay	21.6	21.6	0.5	4.5	
Queue Length 50th (ft)	2	2	0	13	
Queue Length 95th (ft)	11	11	m4	48	
Internal Link Dist (ft)	167	457	11	201	
Turn Bay Length (ft)					
Base Capacity (vph)	386	386	3216	2725	
Starvation Cap Reductn	0	0	0	920	
Spillback Cap Reductn	0	0	0	922	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.02	0.02	0.07	0.28	
Intersection Summary					
m Volume for 95th per	centile	queue i	s meter	ed by u	ipstream signal.

Barrio Logan CPU 270: Sampson St &					Horizon Year Alt 1 with Improvemen Timing Plan: AM Pea
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	90	120	
v/c Ratio	0.06	0.06	0.05	0.10	
Control Delay	21.1	21.1	0.6	4.4	
Queue Delay	0.0	0.0	0.0	0.2	
Total Delay	21.1	21.1	0.6	4.6	
Queue Length 50th (ft)	2	2	0	5	
Queue Length 95th (ft)	11	11	m4	26	
Internal Link Dist (ft)	1363	1025	3	196	
Turn Bay Length (ft)					
Base Capacity (vph)	385	385	1698	1537	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	925	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.02	0.02	0.05	0.20	
Intersection Summary m Volume for 95th per	centile	queue i	s meter	ed by u	pstream signal.

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Barrio Logan CPU 320: Schley St &					Horizon Year Alt 1 with Improvements Timing Plan: AM Peak
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	82	102	
v/c Ratio	0.07	0.07	0.05	0.09	
Control Delay	19.8	19.8	0.3	4.9	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	19.8	19.8	0.3	4.9	
Queue Length 50th (ft)	2	2	0	5	
Queue Length 95th (ft)	13	13	m2	25	
Internal Link Dist (ft)	109	790	1	178	
Turn Bay Length (ft)					
Base Capacity (vph)	355	355	1593	1201	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	30	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.03	0.05	0.09	
Intersection Summary					
m Volume for 95th per	centile	queue i	s meter	ed by u	pstream signal.

Barrio Logan CPU 360: 28th St &					Horizon Year Alt 1 with Improvement Timing Plan: AM Pea
	-	+	Ť	ŧ	
Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	191	402	
v/c Ratio	0.07	0.07	0.06	0.13	
Control Delay	34.4	34.4	0.5	3.6	
Queue Delay	0.0	0.0	0.1	0.0	
Total Delay	34.4	34.4	0.6	3.6	
Queue Length 50th (ft)	5	5	2	17	
Queue Length 95th (ft)	16	16	3	25	
Internal Link Dist (ft)	726	567	134	10	
Turn Bay Length (ft)					
Base Capacity (vph)	392	392	3135	4185	
Starvation Cap Reductn	0	0	2130	0	
Spillback Cap Reductn	0	0	0	143	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.02	0.02	0.19	0.10	
Intersection Summary					

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Barrio Logan CPU 401: 32nd St &					Horizon Year Alt 1 with Improvements Timing Plan: AM Peak
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	516	1048	
v/c Ratio	0.06	0.06	0.12	0.36	
Control Delay	16.8	16.8	0.6	5.4	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	16.8	16.8	0.6	5.4	
Queue Length 50th (ft)	2	2	0	20	
Queue Length 95th (ft)	9	9	6	71	
Internal Link Dist (ft)	2402	727	215	319	

439 4395 3203

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0.02 0.02 0.12 0.34

Barrio Logan CPU 1: Commercial St &	16th S	St			Horizon Year Alt 1 with Improvements Alt Timing Plan: PM Peal				
	-	-	t	Ļ					
Lane Group	EBT	WBT	NBT	SBT					
Lane Group Flow (vph)	464	663	779	660					
v/c Ratio	1.51	0.84	0.55	0.50					
Control Delay	267.8	28.3	14.8	13.7					
Queue Delay	0.0	0.0	0.0	0.0					
Total Delay	267.8	28.3	14.8	13.7					
Queue Length 50th (ft)	~254	212	108	85					
Queue Length 95th (ft)	#418	#398	156	128					
Internal Link Dist (ft)	166	452	369	79					
Turn Bay Length (ft)									
Base Capacity (vph)	307	786	1421	1312					
Starvation Cap Reductn		0	0	0					
Spillback Cap Reductn	0	0	0	0					
Storage Cap Reductn	0	0	0	0					
Reduced v/c Ratio	1.51	0.84	0.55	0.50					
Intersection Summary									
 Volume exceeds cap 	oacity,	queue is	theore	tically ir	nfinite.				
Queue shown is maximum after two cycles.									
# 95th percentile volume exceeds capacity, queue may be longer.									

95th percentile volume exceeds capacity, queue may be longer

Queue shown is maximum after two cycles.

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Turn Bay Length (ft) Base Capacity (vph)

Starvation Cap Reductn 0

Spillback Cap Reductn

Storage Cap Reductn

Intersection Summary

Reduced v/c Ratio

439

0

0

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Barrio Logan CPU						Horizo	on Year Alt 1 with Improvements Alt 1
2: National Ave & 16	th St						Timing Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	99	411	3	525	119	241	
v/c Ratio	0.34	0.51	0.01	0.65	0.27	0.53	
Control Delay	11.0	9.9	6.7	12.4	11.9	14.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.0	9.9	6.7	12.4	11.9	14.7	
Queue Length 50th (ft)	10	43	0	60	13	26	
Queue Length 95th (ft)	46	136	4	188	57	106	
Internal Link Dist (ft)		711		588	202	369	
Turn Bay Length (ft)							
Base Capacity (vph)	451	1232	544	1243	720	705	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.22	0.33	0.01	0.42	0.17	0.34	
Intersection Summary							

Barrio Logan CPU 3: National Ave & Sig	gsbee	St				Horizo	on Year Alt 1 with Improvements Alt 7 Timing Plan: PM Peal
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	37	409	10	296	162	74	
v/c Ratio	0.10	0.57	0.03	0.41	0.33	0.13	
Control Delay	7.9	11.2	7.6	9.1	10.4	5.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.9	11.2	7.6	9.1	10.4	5.6	
Queue Length 50th (ft)	3	34	1	23	15	3	
Queue Length 95th (ft)	21	154	9	108	64	25	
Internal Link Dist (ft)		588		570	296	200	
Turn Bay Length (ft)							
Base Capacity (vph)	627	1184	506	1197	889	977	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.35	0.02	0.25	0.18	0.08	
Intersection Summary							

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Barrio Logan CPU	
6: Harbor Dr & Sigsbee St	

Horizon Year Alt 1 with Improvements Alt 1 Timing Plan: PM Peak

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Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	71	2114	957	109	87
v/c Ratio	0.19	0.83	0.38	0.42	0.29
Control Delay	4.4	9.7	3.7	36.3	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.4	9.7	3.7	36.3	10.8
Queue Length 50th (ft)	7	223	52	43	0
Queue Length 95th (ft)	23	425	101	104	40
Internal Link Dist (ft)		158	581	318	
Turn Bay Length (ft)	250				
Base Capacity (vph)	403	2788	2750	407	431
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.76	0.35	0.27	0.20
Intersection Summarv					

Barrio Logan CPU 7: Logan Ave & Bear	rdslev	St		Horizon Year Alt 1 with Improvements Alt 1 Timing Plan: PM Peak		
<u></u>	→	<u>√</u>	+	1	ţ	
Lane Group	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	635	45	167	194	457	
v/c Ratio	0.88	0.32	0.19	0.64	0.99	
Control Delay	40.9	44.5	13.5	26.8	74.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	40.9	44.5	13.5	26.8	74.5	
Queue Length 50th (ft)	313	23	46	44	~269	
Queue Length 95th (ft)	#586	59	93	110	#495	
Internal Link Dist (ft)	154		618	298	247	
Turn Bay Length (ft)						
Base Capacity (vph)	726	149	931	400	460	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.87	0.30	0.18	0.49	0.99	
Intersection Summary						
 Volume exceeds cap 	acity, o	queue is	s theore	tically ir	nfinite.	
Queue shown is maxi	imum a	after two	cycles.			
# 95th percentile volum	ne exce	eeds ca	pacity, c	queue m	nay be	longer.

Queue shown is maximum after two cycles.

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Barrio Logan CPU						Horizo	on Year Alt 1 with Improvements Alt 1
8: National Ave & Be	ardsle	ey St					Timing Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	21	681	123	461	203	307	
v/c Ratio	0.06	0.79	0.59	0.54	0.31	0.74	
Control Delay	8.3	18.8	23.8	11.7	6.8	29.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.3	18.8	23.8	11.7	6.8	29.0	
Queue Length 50th (ft)	3	153	24	82	11	73	
Queue Length 95th (ft)	14	308	85	172	59	#238	
Internal Link Dist (ft)		570		608	299	298	
Turn Bay Length (ft)							
Base Capacity (vph)	452	1128	272	1097	803	531	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.05	0.60	0.45	0.42	0.25	0.58	
Intersection Summary							
# 95th percentile volun	ne exce	eds ca	pacity, o	queue m	nay be l	onger.	

Barrio Logan CPU						Horizon Year Alt 1 with Improvements Alt				
12: Kearney St & Ce	esar E	. Chav	ez Pkv	Timing Plan: PM Pea						
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Lane Group	WBL	WBT	NBL	NBT	SBT					
Lane Group Flow (vph)	444	456	415	375	402					
v/c Ratio	0.87	0.87	0.86	0.74	0.65					
Control Delay	43.5	41.1	45.4	35.0	32.0					
Queue Delay	0.0	0.0	0.0	0.0	0.0					
Total Delay	43.5	41.1	45.4	35.0	32.0					
Queue Length 50th (ft)	202	192	184	158	90					
Queue Length 95th (ft)	#409	#404	#369	#306	134					
Internal Link Dist (ft)		251		313	132					
Turn Bay Length (ft)										
Base Capacity (vph)	537	550	507	533	914					
Starvation Cap Reductn	0	0	0	0	0					
Spillback Cap Reductn	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0					
Reduced v/c Ratio	0.83	0.83	0.82	0.70	0.44					
Intersection Summary										
# 95th percentile volur	ne exc	eeds ca	pacity, o	queue m	nay be	longer.				
Oueue shown is may	Queue shown is maximum after two cycles									

Queue shown is maximum after two cycles.

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Barrio Logan CPU 13: Logan Ave & Ces	sar E.	Chave	ez Pkw	N		Horizo	n Yea	r Alt 1	with In T		ements Plan: PM	
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	141	457	250	130	304	98	152	550	728	124	811	
v/c Ratio	0.43	0.80	0.39	0.75	0.38	0.14	0.71	0.58	1.10	0.60	0.95	
Control Delay	25.1	36.1	4.4	46.3	16.3	3.1	41.7	27.7	76.6	45.1	52.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	
Total Delay	25.1	36.1	4.4	46.3	16.3	3.1	41.7	27.7	78.0	45.1	52.8	
Queue Length 50th (ft)	55	205	0	53	100	0	72	106	~296	58	210	
Queue Length 95th (ft)	97	287	44	#139	143	23	m99 r	n#202 ı	m#613	112	#386	
Internal Link Dist (ft)		618			587			299			313	
Turn Bay Length (ft)												
Base Capacity (vph)	399	699	736	197	908	805	230	953	664	230	855	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	2	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.35	0.65	0.34	0.66	0.33	0.12	0.66	0.58	1.10	0.54	0.95	
Intersection Summary												
 Volume exceeds cap 	acity, d	queue is	theore	tically ir	nfinite.							
Queue shown is maxi												
# 95th percentile volum	ne exce	eds cap	bacity, o	queue n	nay be l	onger.						
Queue shown is maxi												

m Volume for 95th percentile queue is metered by upstream signal.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Group Flow (vph)	326	435	315	120	293	299	130	1196	130	598	446	_
v/c Ratio	0.99	0.62	0.42	0.56	0.42	0.47	0.52	0.71	1.07	0.71	0.49	
Control Delay	76.7	25.2	6.6	31.8	20.9	17.2	16.5	13.4	106.2	10.1	2.3	
Queue Delay	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	4.8	0.9	
Total Delay	79.8	25.2	6.6	31.8	20.9	17.2	16.5	13.7	106.2	14.9	3.2	
Queue Length 50th (ft)	159	174	22	46	106	83	26	228	~76	74	0	
Queue Length 95th (ft)	#326	270	77	#109	173	154	m47	152 i	m#115	m92	m27	
Internal Link Dist (ft)		608			780			301		299		
Turn Bay Length (ft)												
Base Capacity (vph)	328	699	748	215	699	637	252	1678	121	845	908	
Starvation Cap Reductn	0	0	0	0	0	0	0	119	0	180	219	
Spillback Cap Reductn	4	0	7	0	0	7	0	11	0	50	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.01	0.62	0.43	0.56	0.42	0.47	0.52	0.77	1.07	0.90	0.65	
Intersection Summary												
 Volume exceeds cap 	acity, c	queue is	theore	tically ir	finite.							
Queue shown is maxi	mum a	fter two	cycles.									

m Volume for 95th percentile queue is metered by upstream signal.

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Barrio Logan CPU	_					Horizo	n Yea	r Alt 1	with Improvements Alt 1
15: Newton Ave & Ce	esar E	. Cha	vez Pk	wy					Timing Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	147	217	98	206	43	929	179	1027	
v/c Ratio	0.72	0.58	0.49	0.49	0.41	0.41	0.61	0.87	
Control Delay	48.7	29.3	35.6	15.9	20.4	5.6	16.7	17.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	
Total Delay	48.7	29.3	35.6	15.9	20.4	5.7	16.7	17.1	
Queue Length 50th (ft)	69	82	44	39	8	87	25	162	
Queue Length 95th (ft)	118	132	81	87	m42	124 r	n#152	#763	
Internal Link Dist (ft)		598		178		305		301	
Turn Bay Length (ft)									
Base Capacity (vph)	353	620	344	646	106	2255	294	1187	
Starvation Cap Reductn	0	0	0	0	0	437	0	5	
Spillback Cap Reductn	0	0	0	1	0	25	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.42	0.35	0.28	0.32	0.41	0.51	0.61	0.87	
Intersection Summary									
# 95th percentile volum	ne exce	eds ca	pacity, o	queue m	ay be l	onger.			
Queue shown is maxi	mum a	fter two	cycles						
m Volume for 95th per	centile	queue i	s meter	ed by u	ostream	signal.			

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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	130	342	76	250	293	76	892	272	870	
v/c Ratio	0.53	0.74	0.38	0.54	0.58	0.72	0.46	1.08	0.86	
Control Delay	32.3	35.9	28.4	29.0	15.6	55.9	8.4	85.0	16.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	4.3	
Total Delay	32.3	35.9	28.4	29.0	15.6	55.9	9.6	85.0	21.3	
Queue Length 50th (ft)	58	159	32	111	57	20	86	~148	111	
Queue Length 95th (ft)	98	216	63	157	116	#115	172 r	n#230 r	n#263	
Internal Link Dist (ft)		588		279			201		305	
Turn Bay Length (ft)										
Base Capacity (vph)	393	738	316	745	709	106	1954	251	1011	
Starvation Cap Reductn	0	0	0	0	0	0	786	0	88	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.33	0.46	0.24	0.34	0.41	0.72	0.76	1.08	0.94	
Intersection Summary										
 Volume exceeds cap 	acity.	ueue is	theore	ticallv ir	nfinite.					
Queue shown is maxi										

Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal.

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Barrio Logan CPU 17: Harbor Dr & Ces	ar E. (Chave	z Pkwy	/		Horizo	n Yea	r Alt 1		nprovements Alt 1 iming Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT	SBR	
Lane Group Flow (vph)	509	1673	54	552	54	68	38	69	352	
v/c Ratio	0.70	1.00	0.64	0.50	0.42	0.37	0.22	0.19	0.45	
Control Delay	45.1	46.7	85.3	21.9	53.1	48.2	15.8	28.8	5.9	
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.1	46.7	85.3	22.0	53.1	48.2	15.8	28.8	5.9	
Queue Length 50th (ft)	131	479	31	135	30	37	0	32	37	
Queue Length 95th (ft)	#326	#968	#136	156	79	91	30	67	65	
nternal Link Dist (ft)		578		501		308		11		
Turn Bay Length (ft)	140		100		150					
Base Capacity (vph)	789	1665	85	1103	339	485	400	566	796	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	58	0	7	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.65	1.00	0.64	0.53	0.16	0.14	0.10	0.12	0.44	
ntersection Summary										

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

23: Logan Ave & Sar	npoor	01							Timing Plan: PM Pea
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	117	498	155	154	255	545	72	292	
v/c Ratio	0.29	0.80	0.80	0.25	0.49	0.54	0.26	0.28	
Control Delay	18.9	29.2	51.1	12.5	17.5	15.2	15.8	12.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	
Total Delay	18.9	29.2	51.1	12.5	17.5	16.9	15.8	12.0	
Queue Length 50th (ft)	39	180	63	34	65	139	16	63	
Queue Length 95th (ft)	75	284	139	71	190	338	61	162	
Internal Link Dist (ft)		167		249		281		225	
Turn Bay Length (ft)									
Base Capacity (vph)	552	824	261	825	520	1011	275	1028	
Starvation Cap Reductn	0	0	0	0	0	294	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.21	0.60	0.59	0.19	0.49	0.76	0.26	0.28	

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Barrio Logan CPU						Horizo	on Year Alt 1 with Improvements Alt 1
24: National Ave & S	Samps	on St					Timing Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	176	134	23	185	248	343	
v/c Ratio	0.52	0.25	0.06	0.33	0.26	0.46	
Control Delay	15.3	9.2	9.2	6.0	7.3	9.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.4	9.2	9.2	6.0	7.3	9.1	
Queue Length 50th (ft)	19	12	2	7	21	30	
Queue Length 95th (ft)	79	52	15	46	80	120	
Internal Link Dist (ft)		581		561	314	281	
Turn Bay Length (ft)							
Base Capacity (vph)	624	975	653	942	1213	956	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	26	0	0	39	38	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.29	0.14	0.04	0.20	0.21	0.36	
Intersection Summary							

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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	61	1635	21	597	191	163	
v/c Ratio	0.39	0.92	0.26	0.38	0.65	0.36	
Control Delay	57.9	30.2	65.7	14.2	50.0	31.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	57.9	30.2	65.7	14.2	50.0	31.0	
Queue Length 50th (ft)	33	369	12	116	97	67	
Queue Length 95th (ft)	101	#743	#52	137	218	146	
Internal Link Dist (ft)		413		428	186	3	
Turn Bay Length (ft)	230		250				
Base Capacity (vph)	221	2112	80	1820	623	607	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	60	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.28	0.77	0.26	0.34	0.31	0.27	

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU	
32: Harbor Dr & Schlev St	

Horizon Year Alt 1 with Improvements Alt 1 Timing Plan: PM Peak

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Lane Group	EBL	EBT	WBT	SBR	
Lane Group Flow (vph)	90	1652	681	55	
v/c Ratio	0.53	0.69	0.37	0.10	
Control Delay	51.2	12.0	11.5	0.8	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	51.2	12.0	11.5	0.8	
Queue Length 50th (ft)	41	308	125	0	
Queue Length 95th (ft)	110	332	92	0	
Internal Link Dist (ft)		378	228		
Turn Bay Length (ft)	75				
Base Capacity (vph)	318	2687	1891	628	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	73	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.28	0.61	0.37	0.09	
Intersection Summary					

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR	
Lane Group Flow (vph)	102	665	92	503	725	127	183	444	111	-
v/c Ratio	0.70	0.78	0.20	1.03	0.86	0.28	0.29	1.00	0.19	
Control Delay	73.0	43.6	7.4	85.0	35.5	28.8	5.4	80.0	6.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	73.0	43.6	7.4	85.0	35.5	28.8	5.4	80.0	6.0	
Queue Length 50th (ft)	67	218	0	~360	405	62	0	~295	0	
Queue Length 95th (ft)	#154	283	38	#605	583	119	49	#542	39	
Internal Link Dist (ft)		590			82	454		221		
Turn Bay Length (ft)										
Base Capacity (vph)	152	997	512	490	886	457	628	443	580	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.67	0.67	0.18	1.03	0.82	0.28	0.29	1.00	0.19	

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	348	283	65	152	54	1250	272	1445	
v/c Ratio	0.96	0.48	0.25	0.26	0.42	0.92	0.95	0.58	
Control Delay	71.3	20.7	27.0	16.4	54.0	41.7	84.3	18.7	
Queue Delay	0.0	0.6	0.4	0.0	0.0	97.8	143.9	57.8	
Total Delay	71.3	21.3	27.4	16.4	54.0	139.5	228.2	76.5	
Queue Length 50th (ft)	212	95	30	43	33	394	174	233	
Queue Length 95th (ft)	#389	172	66	92	73	#540	#334	282	
Internal Link Dist (ft)		207		577		298		139	
Turn Bay Length (ft)									
Base Capacity (vph)	374	606	268	595	140	1353	287	2478	
Starvation Cap Reductn	0	0	0	0	0	329	84	1189	
Spillback Cap Reductn	0	104	48	0	0	0	0	163	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.93	0.56	0.30	0.26	0.39	1.22	1.34	1.12	

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	239	836	163	619	71	739	391	1141	
v/c Ratio	0.94	0.57	0.94	0.41	0.86	0.95	0.95	0.98dr	
Control Delay	75.5	24.9	86.2	11.9	117.2	59.1	74.0	31.7	
Queue Delay	88.9	0.0	0.0	0.2	0.0	16.3	15.1	21.1	
Total Delay	164.4	24.9	86.2	12.0	117.2	75.3	89.1	52.8	
Queue Length 50th (ft)	153	223	104	78	51	251	274	307	
Queue Length 95th (ft)	#314	283	#242	123	#141	#384	#462	#461	
Internal Link Dist (ft)		327		314		290		298	
Turn Bay Length (ft)									
Base Capacity (vph)	268	1548	184	1572	83	782	428	1290	
Starvation Cap Reductn	0	0	0	0	0	0	38	185	
Spillback Cap Reductn	68	0	0	280	0	61	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.20	0.54	0.89	0.48	0.86	1.02	1.00	1.03	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR	
Lane Group Flow (vph)	152	1511	2	15	570	302	157	549	13	14	
v/c Ratio	0.54	1.08	0.00	0.27	0.54	0.40	0.54	0.69	0.03	0.04	
Control Delay	71.4	80.4	37.0	88.1	33.7	3.8	60.9	38.6	19.6	11.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	
Total Delay	71.4	80.4	37.0	88.1	33.7	3.8	60.9	39.3	19.6	11.8	
Queue Length 50th (ft)	77	~842	1	15	187	0	141	165	6	2	
Queue Length 95th (ft)	121	#1100	9	45	232	47	229	250	18	14	
Internal Link Dist (ft)		247			310		22		129		
Turn Bay Length (ft)	150			75						210	
Base Capacity (vph)	380	1405	456	56	1103	763	464	1078	585	374	
Starvation Cap Reductn	0	0	0	0	0	0	0	229	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.40	1.08	0.00	0.27	0.52	0.40	0.34	0.65	0.02	0.04	

Queue shown is maximum after two cycles.
 Queue shown is maximum after two cycles.

Barrio Logan CPU 37: Boston Ave & I-5	5 SB C)n-ram	Ø	Horizon Year Alt 1 with Improvements Alt 1 Timing Plan: PM Peal
	-	+	1	
Lane Group	EBT	WBT	NBT	
Lane Group Flow (vph)	520	240	420	
v/c Ratio	0.84	0.70	0.81	
Control Delay	36.5	33.3	38.4	
Queue Delay	0.0	0.0	0.0	
Total Delay	36.5	33.3	38.4	
Queue Length 50th (ft)	226	80	183	
Queue Length 95th (ft)	#418	156	#348	
Internal Link Dist (ft)	577	323	73	
Turn Bay Length (ft)				
Base Capacity (vph)	713	429	605	
Starvation Cap Reductn	0	0	0	
Spillback Cap Reductn	0	0	0	
Storage Cap Reductn	0	0	0	
Reduced v/c Ratio	0.73	0.56	0.69	
Intersection Summary				
# 95th percentile volur	ne exce	eeds ca	pacity, o	queue may be longer.
Queue shown is max	imum a	after two	o cycles	

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	76	890	225	495	246	122	334	134	145	
v/c Ratio	0.46	0.86	0.86	0.38	0.83	0.29	0.55	0.59	0.44	
Control Delay	44.4	36.3	65.0	19.2	58.7	28.4	7.6	44.4	20.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.4	36.3	65.0	19.2	58.7	28.4	7.6	44.4	20.1	
Queue Length 50th (ft)	33	187	101	77	109	51	5	58	34	
Queue Length 95th (ft)	84	#376	#267	153	#279	99	70	127	83	
Internal Link Dist (ft)		151		932		1629			377	
Turn Bay Length (ft)										
Base Capacity (vph)	189	1041	263	1301	296	550	686	278	514	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.85	0.86	0.38	0.83	0.22	0.49	0.48	0.28	

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ane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SWL	
ane Group Flow (vph)	250	228	206	451	152	391	870	489	446	234	
/c Ratio	1.00	0.44	0.85	1.03	0.69	1.03	0.80	1.27	0.44	0.49	
Control Delay	101.8	27.8	70.9	93.8	64.3	100.9	37.1	179.5	36.1	47.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	
otal Delay	101.8	27.8	70.9	93.8	64.3	100.9	40.0	179.5	36.1	47.7	
Queue Length 50th (ft)	~201	100	148	~373	111	~324	318	~473	145	82	
Queue Length 95th (ft)	#377	182	#299	#595	181	#534	408	#701	211	122	
nternal Link Dist (ft)		174	440			351			1629	472	
urn Bay Length (ft)											
Base Capacity (vph)	249	518	243	436	274	378	1150	384	1014	581	
Starvation Cap Reductn	0	0	0	0	0	0	177	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.00	0.44	0.85	1.03	0.55	1.03	0.89	1.27	0.44	0.40	

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

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40: Harbor Dr & 32nd	d St								Т	iming F	lan: PN	Peak
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	152	1288	109	43	474	500	76	750	152	337	304	217
v/c Ratio	0.68	1.14	0.19	0.74	0.61	0.76	0.52	1.15	0.43	0.82	0.23	0.26
Control Delay	64.4	108.2	10.2	117.7	35.7	14.6	65.4	126.3	25.5	48.3	20.1	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.1	0.3	0.1
Total Delay	64.4	108.2	10.2	117.7	35.7	14.6	65.4	126.3	25.5	65.4	20.4	2.6
Queue Length 50th (ft)	101	~580	20	30	160	16	51	~304	40	154	54	14
Queue Length 95th (ft)	191	#660	54	#113	140	#208	114	#553	123	#451	99	45
Internal Link Dist (ft)		710			294			45			182	
Turn Bay Length (ft)	230		200	200		200				200		
Base Capacity (vph)	371	1126	585	58	781	659	193	653	351	410	1310	845
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	67	517	155
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	1.14	0.19	0.74	0.61	0.76	0.39	1.15	0.43	0.98	0.38	0.31
Intersection Summary												

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	WBT	WBR	SBL	
Lane Group Flow (vph)	329	790	392	167	296	
v/c Ratio	0.67	0.38	0.49	0.34	0.62	
Control Delay	28.4	6.9	19.9	6.1	17.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	28.4	6.9	19.9	6.1	17.2	
Queue Length 50th (ft)	77	48	50	0	47	
Queue Length 95th (ft)	#274	135	108	41	121	
Internal Link Dist (ft)		932	312		271	
Turn Bay Length (ft)						
Base Capacity (vph)	515	2320	1241	664	725	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.64	0.34	0.32	0.25	0.41	

Queue shown is maximum after two cycles.

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Barrio Logan CPU	
42: I-5 SB off-ramp & 28th S	t

Horizon Year Alt 1 with Improvements Alt 1 Timing Plan: PM Peak

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Lane Group	EBR	NBT	SBT
Lane Group Flow (vph)	893	1565	824
v/c Ratio	0.92	0.44	0.60
Control Delay	28.4	0.4	21.4
Queue Delay	31.4	0.0	0.4
Total Delay	59.7	0.4	21.8
Queue Length 50th (ft)	245	0	95
Queue Length 95th (ft)	#516	0	131
Internal Link Dist (ft)		139	454
Turn Bay Length (ft)			
Base Capacity (vph)	973	3539	1362
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	133	0	156
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.06	0.44	0.68
Intersection Summany			

Intersection Summary # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Barrio Logan CPU 170: Cesar E. Chave	ez Pkv	vy &		Horizon Year Alt 1 with Improvements Alt 7 Timing Plan: PM Peal	
	→	ł	1	ţ	
Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	523	337	
v/c Ratio	0.08	0.08	0.16	0.14	
Control Delay	31.9	31.9	0.2	3.4	
Queue Delay	0.0	0.0	0.0	0.1	
Total Delay	31.9	31.9	0.2	3.5	
Queue Length 50th (ft)	4	4	0	8	
Queue Length 95th (ft)	17	17	3	33	
Internal Link Dist (ft)	517	1529	11	201	
Turn Bay Length (ft)					
Base Capacity (vph)	276	276	3278	2860	
Starvation Cap Reductn	0	0	0	1388	
Spillback Cap Reductn	0	0	81	1069	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.03	0.16	0.23	
Intersection Summary					

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Barrio Logan CPU 270: Sampson St &					Horizon Year Alt 1 with Improvements Alt 1 Timing Plan: PM Peak
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	190	115	
v/c Ratio	0.07	0.07	0.11	0.09	
Control Delay	28.6	28.6	0.5	3.6	
Queue Delay	0.0	0.0	0.0	0.2	
Total Delay	28.6	28.6	0.5	3.7	
Queue Length 50th (ft)	3	3	0	5	
Queue Length 95th (ft)	15	15	9	25	
Internal Link Dist (ft)	291	945	3	196	
Turn Bay Length (ft)					
Base Capacity (vph)	356	356	1703	1635	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	1026	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.03	0.11	0.19	
Intersection Summary					

Barrio Logan CPU 320: Schley St &					Horizon Year Alt 1 with Improvements Alt 1 Timing Plan: PM Peal
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	124	51	
v/c Ratio	0.08	0.08	0.07	0.04	
Control Delay	26.4	26.4	0.6	4.9	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	26.4	26.4	0.6	4.9	
Queue Length 50th (ft)	3	3	0	3	
Queue Length 95th (ft)	16	16	9	15	
Internal Link Dist (ft)	190	1010	1	182	
Turn Bay Length (ft)					
Base Capacity (vph)	379	379	1596	1400	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	13	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.02	0.02	0.08	0.04	
Intersection Summary					

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360: 28th St &					
	→	+	1	Ŧ	
Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	554	549	
v/c Ratio	0.10	0.10	0.18	0.15	
Control Delay	36.9	36.9	0.6	3.1	
Queue Delay	0.0	0.0	0.2	0.0	
Total Delay	36.9	36.9	0.7	3.2	
Queue Length 50th (ft)	5	5	8	24	
Queue Length 95th (ft)	16	16	9	33	
Internal Link Dist (ft)	512	1235	129	6	
Turn Bay Length (ft)					
Base Capacity (vph)	250	250	3151	4251	
Starvation Cap Reductn	0	0	1598	0	
Spillback Cap Reductn	0	0	0	745	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.04	0.04	0.36	0.16	

Barrio Logan CPU 401: 32nd St &					Horizon Year Alt 1 with Improvements Alt 7 Timing Plan: PM Peal
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	1138	651	
v/c Ratio	0.09	0.09	0.25	0.18	
Control Delay	27.4	27.4	0.3	3.2	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	27.4	27.4	0.3	3.2	
Queue Length 50th (ft)	3	3	0	11	
Queue Length 95th (ft)	12	12	m8	40	
Internal Link Dist (ft)	1768	925	182	351	
Turn Bay Length (ft)					
Base Capacity (vph)	279	279	4619	3690	
Starvation Cap Reductn	0	0	632	0	
Spillback Cap Reductn	0	0	95	123	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.03	0.29	0.18	
Intersection Summary m Volume for 95th perc	oontilo	auguo i	c motor	od by u	netroom signal

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Barrio Logan CPU 1: Commercial St & 2	16th S	st				Horizon Year Alt 2 with Improvements Timing Plan: AM Peak
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Lane Group	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	298	25	447	427	490	
v/c Ratio	0.49	0.09	0.75	0.26	0.33	
Control Delay	15.9	11.4	23.6	10.0	8.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.9	11.4	23.6	10.0	8.8	
Queue Length 50th (ft)	71	5	129	38	36	
Queue Length 95th (ft)	124	17	216	87	89	
Internal Link Dist (ft)	166		452	369	79	
Turn Bay Length (ft)						
Base Capacity (vph)	782	374	777	1627	1478	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.38	0.07	0.58	0.26	0.33	

Timing Plan: AM Peak 2: National Ave & 16th St + †. ŧ -Lane Group EBT WBT NBT SBT Lane Group Flow (vph) 297 578 93 209 v/c Ratio 0.45 0.77 0.15 0.32 Control Delay 10.1 17.9 9.3 7.4 Queue Delay 0.0 0.0 0.0 0.0 Total Delay 10.1 17.9 9.3 7.4 Queue Length 50th (ft) 41 103 11 16 Queue Length 95th (ft) Internal Link Dist (ft) 84 190 37 55 711 588 202 369 Turn Bay Length (ft) Base Capacity (vph) 764 605 659 864 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 0 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.39 0.67 0.15 0.32 Intersection Summary

Horizon Year Alt 2 with Improvements

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Intersection Summary

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Barrio Logan CPU

Barrio Logan CPU						ŀ	Horizon Year Alt 2 with Improvements
3: National Ave & Sig	gsbee	St					Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	12	212	21	449	162	125	
v/c Ratio	0.05	0.30	0.05	0.62	0.30	0.21	
Control Delay	9.4	8.4	9.0	13.7	7.4	5.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.4	8.4	9.0	13.7	7.4	5.9	
Queue Length 50th (ft)	1	12	1	36	10	6	
Queue Length 95th (ft)	10	70	14	176	49	36	
Internal Link Dist (ft)		588		570	296	200	
Turn Bay Length (ft)							
Base Capacity (vph)	352	964	601	985	804	884	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.22	0.03	0.46	0.20	0.14	
Intersection Summary							

Barrio Logan CPU 6: Harbor Dr & Sigst	ee St					Horizon Year Alt 2 with Improvements Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBT	SBL	SBR	
Lane Group Flow (vph)	41	500	1815	109	109	
v/c Ratio	0.21	0.20	0.82	0.39	0.32	
Control Delay	28.8	3.4	16.0	26.7	8.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	28.8	3.4	16.0	26.7	8.6	
Queue Length 50th (ft)	11	22	142	29	0	
Queue Length 95th (ft)	41	46	#555	80	37	
Internal Link Dist (ft)		158	581	318		
Turn Bay Length (ft)	250					
Base Capacity (vph)	226	2592	2204	455	488	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.19	0.82	0.24	0.22	
Intersection Summary						
# 95th percentile volum				queue m	nay be l	onger.

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Barrio Logan CPU 7: Logan Ave & Bea	rdsley	St				Horizon Year Alt 2 with Improvements Timing Plan: AM Peak
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Lane Group	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	216	96	227	108	591	
v/c Ratio	0.63	0.49	0.38	0.42	0.87	
Control Delay	33.4	39.3	18.5	17.9	38.3	
Queue Delay	0.2	0.1	0.0	0.0	0.0	
Total Delay	33.6	39.3	18.5	17.9	38.3	
Queue Length 50th (ft)	80	38	66	13	227	
Queue Length 95th (ft)	153	89	127	56	#490	
Internal Link Dist (ft)	154		618	298	247	
Turn Bay Length (ft)						
Base Capacity (vph)	435	210	731	424	680	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	22	2	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.52	0.46	0.31	0.25	0.87	

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

8: National Ave & Be	andon	<i>.</i> ,					Timing Plan: AM Pea
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	9	273	260	542	91	407	
v/c Ratio	0.04	0.36	0.68	0.72	0.14	0.75	
Control Delay	11.0	11.9	23.2	18.6	6.2	22.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.0	11.9	23.2	18.6	6.2	22.7	
Queue Length 50th (ft)	1	43	49	101	5	80	
Queue Length 95th (ft)	10	124	164	278	32	227	
Internal Link Dist (ft)		570		608	299	298	
Turn Bay Length (ft)							
Base Capacity (vph)	271	1012	510	994	896	751	
Starvation Cap Reductn	0	0	0	0	0	9	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.27	0.51	0.55	0.10	0.55	

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Barrio Logan CPU	Horizoi
12: Kearney St & Cesar E. Chavez Pkwy	

on Year Alt 2 with Improvements Timing Plan: AM Peak

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Lane Group	WBL	WBT	NBL	NBT	SBT				
Lane Group Flow (vph)	585	608	279	282	421				
v/c Ratio	1.03	1.05	0.74	0.71	0.60				
Control Delay	74.9	76.4	39.3	37.0	28.8				
Queue Delay	0.0	0.0	0.0	0.0	0.0				
Total Delay	74.9	76.4	39.3	37.0	28.8				
Queue Length 50th (ft)	~273	~293	110	110	85				
Queue Length 95th (ft)	#622	#633	215	214	141				
Internal Link Dist (ft)		251		313	132				
Turn Bay Length (ft)									
Base Capacity (vph)	566	581	481	507	946				
Starvation Cap Reductn	0	0	0	0	0				
Spillback Cap Reductn	0	0	0	0	0				
Storage Cap Reductn	0	0	0	0	0				
Reduced v/c Ratio	1.03	1.05	0.58	0.56	0.45				
Intersection Summary									
 Volume exceeds capacity, queue is theoretically infinite. 									

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	152	326	130	109	380	83	109	326	326	76	976	_
v/c Ratio	0.63	0.72	0.27	0.50	0.59	0.14	1.14	0.25	0.41	0.46	0.73	
Control Delay	37.3	35.9	5.3	27.6	24.7	3.9	165.6	15.3	3.7	45.9	24.6	
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay	37.3	35.9	5.3	27.8	24.7	3.9	165.6	15.3	3.7	45.9	24.9	
Queue Length 50th (ft)	69	151	0	43	156	0	~64	43	0	35	197	
Queue Length 95th (ft)	107	194	33	74	188	22 ו	m#146	m103	m50	#113	#398	
Internal Link Dist (ft)		618			587			299			313	
Turn Bay Length (ft)												
Base Capacity (vph)	372	699	661	299	885	777	96	1297	794	166	1340	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	16	0	0	
Spillback Cap Reductn	0	0	47	18	0	0	0	0	0	0	52	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.41	0.47	0.21	0.39	0.43	0.11	1.14	0.25	0.42	0.46	0.76	
Intersection Summary												

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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Barrio Logan CPU 14: National Ave & C	Cesar	E. Cha	vez P	kwy		ŀ	lorizor	Year			proven Plan: AM	
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Group Flow (vph)	207	272	207	130	380	120	109	674	65	832	337	
v/c Ratio	0.91	0.44	0.34	0.43	0.62	0.20	1.01	0.37	0.21	0.91	0.37	
Control Delay	67.3	22.5	8.5	24.4	26.5	4.4	114.5	8.9	4.9	23.6	1.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay	67.3	22.5	8.5	24.4	26.5	4.4	114.5	8.9	4.9	23.6	1.2	
Queue Length 50th (ft)	91	97	23	46	146	0	~63	97	6	396	0	
Queue Length 95th (ft)	#211	160	68	94	230	32	#163	95	m11	#610	m0	
Internal Link Dist (ft)		608			780			301		299		
Turn Bay Length (ft)												
Base Capacity (vph)	258	699	678	346	699	669	108	1820	317	916	906	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	135	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.80	0.39	0.31	0.38	0.54	0.18	1.01	0.37	0.21	0.91	0.44	
Intersection Summary												
 Volume exceeds cap 	bacity, d	queue is	theore	tically ir	nfinite.							
Queue shown is maximum after two cycles.												
# 95th percentile volur	ne exce	eds ca	bacity, o	queue n	nay be l	onger.						
Queue shown is max	Queue shown is maximum after two cycles.											

Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal.

15: Newton Ave & Ce	esar E	. Cha	vez Pk	wy					Timing Plan: AM P
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	87	108	43	130	43	490	109	1060	
v/c Ratio	0.54	0.39	0.26	0.46	0.35	0.19	0.18	0.79	
Control Delay	44.1	18.5	33.8	19.7	12.0	1.9	2.7	7.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	
Total Delay	44.1	18.5	33.8	19.7	12.0	1.9	2.7	8.3	
Queue Length 50th (ft)	41	20	20	25	4	18	9	101	
Queue Length 95th (ft)	81	61	46	69	m19	m26	m16 r	n#162	
Internal Link Dist (ft)		598		178		305		301	
Turn Bay Length (ft)									
Base Capacity (vph)	422	615	432	624	122	2572	620	1338	
Starvation Cap Reductn	0	0	0	0	0	0	0	64	
Spillback Cap Reductn	0	2	0	0	0	0	0	69	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.21	0.18	0.10	0.21	0.35	0.19	0.18	0.84	
Intersection Summary									
# 95th percentile volum	ne exce	eds ca	pacity, o	queue m	ay be l	onger.			

m Volume for 95th percentile queue is metered by upstream signal.

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Barrio Logan CPU 16: Main St & Cesar	F Ch	21/07	Dkway			F	lorizon	Year		vith Improvements iming Plan: AM Peak
To: Main of a ocsar	<u>, en en en en en en en en en en en en en </u>	-	KWY	+	×.	•	t	1	¥.	
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	163	223	76	380	207	92	468	163	842	
v/c Ratio	0.90	0.41	0.26	0.69	0.35	0.65	0.25	0.35	0.89	
Control Delay	73.3	23.4	22.3	31.3	4.8	40.1	7.3	6.7	19.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	5.7	
Total Delay	73.3	23.4	22.3	31.3	4.8	40.1	7.7	6.7	24.9	
Queue Length 50th (ft)	73	81	27	156	0	31	48	26	209	
Queue Length 95th (ft)	#180	138	60	246	43	#119	74	m36	#626	
Internal Link Dist (ft)		588		983			201		305	
Turn Bay Length (ft)										
Base Capacity (vph)	207	624	335	629	647	141	1837	461	950	
Starvation Cap Reductn	0	0	0	0	0	0	795	0	74	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.79	0.36	0.23	0.60	0.32	0.65	0.45	0.35	0.96	
Intersection Summary										
# 95th percentile volum	ne exce	eds ca	pacity, o	queue n	nay be l	onger.				
Queue shown is max										
m Volume for 95th percentile queue is metered by upstream signal.										

ane Group ane Group Flow (vph)	EDI		•	-	•	•	Ť	1	÷	-
	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
	118	482	87	1148	108	11	15	29	174	554
/c Ratio	0.53	0.38	0.88	0.90	0.16	0.09	0.07	0.15	0.41	1.04
ontrol Delay	56.1	11.0	112.4	28.6	3.5	35.9	34.6	13.7	26.2	74.2
ueue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
otal Delay	56.1	11.0	112.4	28.6	3.6	35.9	34.6	13.7	26.2	74.2
ueue Length 50th (ft)	35	43	52	142	2	6	8	0	70	~326
ueue Length 95th (ft)	#96	118	#194	#400	29	22	26	23	116	#542
nternal Link Dist (ft)		578		501			308		11	
urn Bay Length (ft)	140		100			150				
ase Capacity (vph)	221	1366	99	1384	979	306	566	455	650	707
tarvation Cap Reductr		0	0	0	0	0	0	0	0	0
pillback Cap Reductn	0	0	0	0	259	0	144	0	0	0
torage Cap Reductn	0	0	0	0	0	0	0	0	0	0
educed v/c Ratio	0.53	0.35	0.88	0.83	0.15	0.04	0.04	0.06	0.27	0.78
ntersection Summary										
Volume exceeds ca	pacity, o	ueue i	s theore	tically ir	ofinite.					

95th percentile volume exceeds capacity, queue may be lo

Queue shown is maximum after two cycles.

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Barrio Logan CPU 23: Logan Ave & Sar	npsor	St				F	lorizor	n Year	Alt 2 with Improvements Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	110	414	115	149	230	587	67	273	
v/c Ratio	0.27	0.67	0.53	0.24	0.48	0.69	0.28	0.32	
Control Delay	14.1	17.4	23.9	8.6	13.2	14.2	12.3	9.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	
Total Delay	14.1	17.4	23.9	8.6	13.2	14.3	12.3	9.2	
Queue Length 50th (ft)	16	59	19	12	31	81	8	33	
Queue Length 95th (ft)	65	201	84	58	115	263	42	108	
Internal Link Dist (ft)		167		249		281		225	
Turn Bay Length (ft)									
Base Capacity (vph)	608	892	321	892	629	1101	317	1130	
Starvation Cap Reductn	0	0	0	0	0	58	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.46	0.36	0.17	0.37	0.56	0.21	0.24	
Intersection Summary									

Barrio Logan CPU						I	Horizon Year Alt 2 with Improvements
24: National Ave & S	amps	on St					Timing Plan: AM Peak
	۶	-	4	+	t	Ŧ	
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	85	70	52	225	141	334	
v/c Ratio	0.30	0.14	0.15	0.43	0.15	0.38	
Control Delay	11.5	7.5	9.3	8.1	6.3	7.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.5	7.5	9.3	8.1	6.3	7.1	
Queue Length 50th (ft)	7	4	4	12	9	21	
Queue Length 95th (ft)	41	29	26	63	47	102	
Internal Link Dist (ft)		581		561	314	281	
Turn Bay Length (ft)							
Base Capacity (vph)	551	940	687	926	1297	1175	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	11	0	0	19	25	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.07	0.08	0.25	0.11	0.28	
Intersection Summary							

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Barrio Logan CPU 27: Harbor Dr & Sam	npson	St				I	Horizon Year Alt 2 with Improvements Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	11	845	82	1471	122	183	
v/c Ratio	0.08	0.53	0.42	0.72	0.45	0.39	
Control Delay	45.5	18.4	45.9	18.7	32.7	22.8	
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	
Total Delay	45.5	18.4	45.9	18.8	32.7	22.8	
Queue Length 50th (ft)	4	163	33	255	41	56	
Queue Length 95th (ft)	27	232	112	#757	113	117	
Internal Link Dist (ft)		413		428	186	3	
Turn Bay Length (ft)	230		250				
Base Capacity (vph)	233	1661	279	2038	721	778	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	69	1	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.05	0.51	0.29	0.75	0.17	0.24	
Intersection Summary							
# 95th percentile volun	ne exce	eds ca	pacity, o	queue m	ay be lo	onger.	

Barrio Logan CPU 32: Harbor Dr & Schl	ey St				Horizon Year Alt 2 with Improvements Timing Plan: AM Peal
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Lane Group	EBL	EBT	WBT	SBR	
Lane Group Flow (vph)	93	549	1728	93	
v/c Ratio	0.53	0.23	0.97	0.27	
Control Delay	44.4	4.8	39.4	3.7	
Queue Delay	0.0	0.0	12.0	0.0	
Total Delay	44.4	4.8	51.5	3.7	
Queue Length 50th (ft)	33	52	~487	0	
Queue Length 95th (ft)	95	46	#577	0	
Internal Link Dist (ft)		378	228		
Turn Bay Length (ft)	75				
Base Capacity (vph)	217	2434	1776	383	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	90	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.43	0.23	1.02	0.24	
Intersection Summary					
 Volume exceeds cap 	acity, d	queue is	theore	tically ir	nfinite.
Queue shown is maxi	mum a	after two	cycles.		
# 95th percentile volum	ne exce	eds ca	pacity, o	queue n	nay be longer.

Queue shown is maximum after two cycles.

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33: National Ave & 2	8th St								Ti	iming Plan: AM Pea
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR	
Lane Group Flow (vph)	115	266	20	202	788	147	89	360	334	
v/c Ratio	0.61	0.20	0.03	0.79	0.91	0.37	0.16	0.86	0.47	
Control Delay	73.5	28.2	12.2	70.3	43.8	38.7	7.8	60.4	6.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	73.5	28.2	12.2	70.3	43.8	38.7	7.8	60.4	6.1	
Queue Length 50th (ft)	92	76	0	160	580	92	0	274	0	
Queue Length 95th (ft)	#212	134	20	269	857	177	41	#501	72	
Internal Link Dist (ft)		590			82	454		221		
Turn Bay Length (ft)										
Base Capacity (vph)	243	1658	752	423	1080	538	701	568	840	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.47	0.16	0.03	0.48	0.73	0.27	0.13	0.63	0.40	
Intersection Summary										

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	272	217	163	54	228	98	826	185	1283	
v/c Ratio	0.82	0.37	0.27	0.16	0.37	0.62	0.68	0.77	0.59	
Control Delay	40.4	18.1	3.9	15.7	8.6	51.9	23.2	53.9	16.5	
Queue Delay	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	2.6	
Total Delay	40.4	18.1	4.0	15.8	8.6	51.9	23.2	53.9	19.1	
Queue Length 50th (ft)	98	65	0	15	27	40	151	75	139	
Queue Length 95th (ft)	185	114	33	37	70	#118	248	#197	220	
Internal Link Dist (ft)		207			577		298		139	
Turn Bay Length (ft)										
Base Capacity (vph)	418	735	720	427	745	157	1219	243	2176	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	740	
Spillback Cap Reductn	0	0	77	47	0	0	0	0	125	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.65	0.30	0.25	0.14	0.31	0.62	0.68	0.76	0.89	

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	207	489	98	750	43	315	207	1098	
v/c Ratio	0.96	0.31	0.26	0.45	0.61	0.34	0.95	0.93	
Control Delay	81.3	16.3	19.0	16.7	81.5	16.6	92.9	41.9	
Queue Delay	0.9	0.0	0.0	0.0	0.0	0.0	0.0	47.1	
Total Delay	82.1	16.3	19.0	16.7	81.5	16.6	92.9	89.0	
Queue Length 50th (ft)	128	96	37	150	28	45	134	328	
Queue Length 95th (ft)	#281	134	76	201	#83	81	#280	#464	
Internal Link Dist (ft)		327		314		279		298	
Turn Bay Length (ft)									
Base Capacity (vph)	217	1560	377	1663	71	1027	219	1234	
Starvation Cap Reductn	0	0	0	0	0	0	0	236	
Spillback Cap Reductn	1	0	0	8	0	7	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.96	0.31	0.26	0.45	0.61	0.31	0.95	1.10	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR	
Lane Group Flow (vph)	76	728	4	20	1025	125	9	368	16	24	
v/c Ratio	0.39	0.63	0.01	0.17	0.95	0.19	0.03	0.34	0.03	0.05	
Control Delay	71.9	31.9	33.8	73.3	52.2	7.8	43.0	23.3	16.2	9.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	
Total Delay	71.9	31.9	33.8	73.3	52.2	7.8	43.0	23.4	16.2	9.5	
Queue Length 50th (ft)	38	254	1	19	~418	18	5	86	6	4	
Queue Length 95th (ft)	#80	310	12	50	#556	51	23	126	18	17	
Internal Link Dist (ft)		247			310		22		134		
Turn Bay Length (ft)	150			75						210	
Base Capacity (vph)	195	1397	432	122	1438	749	646	1509	819	510	
Starvation Cap Reductn	0	0	0	0	0	0	0	299	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.39	0.52	0.01	0.16	0.71	0.17	0.01	0.30	0.02	0.05	

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Barrio Logan CPU
37: Boston Ave & I-5 SB On-ramp

Horizon Year Alt 2 with Improvements Timing Plan: AM Peak

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Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	271	242	230
v/c Ratio	0.63	0.60	0.39
Control Delay	25.4	23.3	21.7
Queue Delay	0.0	0.0	0.0
Total Delay	25.4	23.3	21.7
Queue Length 50th (ft)	72	54	57
Queue Length 95th (ft)	167	140	#181
Internal Link Dist (ft)	577	323	73
Turn Bay Length (ft)			
Base Capacity (vph)	844	638	623
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.32	0.38	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	39	383	341	705	120	54	28	48	135	
v/c Ratio	0.21	0.55	0.71	0.46	0.50	0.13	0.07	0.24	0.41	
Control Delay	35.0	15.2	33.0	15.6	39.5	24.2	10.8	34.5	25.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	35.0	15.2	33.0	15.6	39.5	24.2	10.8	34.5	25.2	
Queue Length 50th (ft)	14	30	110	75	42	17	0	17	37	
Queue Length 95th (ft)	51	82	#325	221	#146	53	21	60	98	
Internal Link Dist (ft)		151		932		1629			377	
Turn Bay Length (ft)										
Base Capacity (vph)	257	1076	599	1690	265	647	558	252	597	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.15	0.36	0.57	0.42	0.45	0.08	0.05	0.19	0.23	

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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ne Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SWL
Group Flow (vph)	98	272	321	184	76	234	375	229	555	946
atio	0.61	0.50	1.59	0.39	0.49	0.74	0.33	0.77	0.65	1.45
rol Delay	56.7	36.7	315.8	37.4	62.2	59.6	23.4	63.0	41.4	246.6
ue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
I Delay	56.7	36.7	315.8	37.4	62.2	59.8	23.4	63.0	41.4	246.6
ue Length 50th (ft)	62	155	~341	108	54	164	102	162	190	~496
e Length 95th (ft)	#169	281	#596	205	111	265	157	267	261	#729
al Link Dist (ft)		174	440			319			1629	472
Bay Length (ft)										
Capacity (vph)	160	546	202	474	314	429	1260	394	992	651
ation Cap Reductn	0	0	0	0	0	19	0	0	0	0
back Cap Reductn	0	0	0	0	0	0	0	0	0	0
age Cap Reductn	0	0	0	0	0	0	0	0	0	0
uced v/c Ratio	0.61	0.50	1.59	0.39	0.24	0.57	0.30	0.58	0.56	1.45

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SE
Lane Group Flow (vph)	98	697	152	326	822	424	33	174	33	141	1130	(
v/c Ratio	0.83	1.80	0.61	0.88	0.92	0.74	0.35	0.34	0.13	0.36	0.86	0.0
Control Delay	89.6	390.4	18.1	59.1	38.6	17.4	50.0	34.2	14.4	20.7	30.7	4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0
Total Delay	89.6	390.4	18.1	59.1	38.6	17.4	50.0	34.2	14.4	20.7	32.2	4
Queue Length 50th (ft)	42	~284	6	132	~216	32	14	34	0	29	190	
Queue Length 95th (ft)	#161	#208	49	#377	163	#198	#56	82	27	93	#507	
Internal Link Dist (ft)		710			294			151			215	
Turn Bay Length (ft)	230		200	200		200				200		
Base Capacity (vph)	118	388	248	369	889	575	94	543	259	393	1308	7
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	68	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.83	1.80	0.61	0.88	0.92	0.74	0.35	0.32	0.13	0.36	0.91	0.
Intersection Summary												1

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU	Horizon Year Alt 2 with Improvements
41: Main St & I-15 Ramps	Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBT	WBR	SBL	
Lane Group Flow (vph)	40	203	561	116	408	
v/c Ratio	0.15	0.14	0.46	0.19	0.62	
Control Delay	22.6	6.9	12.5	4.5	10.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.6	6.9	12.5	4.5	10.7	
Queue Length 50th (ft)	4	8	26	0	19	
Queue Length 95th (ft)	40	36	130	30	123	
Internal Link Dist (ft)		932	312		271	
Turn Bay Length (ft)						
Base Capacity (vph)	270	2285	1897	902	991	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.15	0.09	0.30	0.13	0.41	
Intersection Summary						

Barrio Logan CPU 42: I-5 SB off-ramp 8	& 28th	St		Horizon Year Alt 2 with Improvement Timing Plan: AM Pea
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Lane Group	EBR	NBT	SBT	
Lane Group Flow (vph)	1014	1196	453	
v/c Ratio	0.95	0.34	0.38	
Control Delay	29.5	0.3	23.6	
Queue Delay	14.4	0.0	0.1	
Total Delay	43.9	0.3	23.7	
Queue Length 50th (ft)	308	0	60	
Queue Length 95th (ft)	#641	0	88	
Internal Link Dist (ft)		139	454	
Turn Bay Length (ft)				
Base Capacity (vph)	1085	3539	1190	
Starvation Cap Reductn	0	0	0	
Spillback Cap Reductn	89	0	115	
Storage Cap Reductn	0	0	0	
Reduced v/c Ratio	1.02	0.34	0.42	
Intersection Summary				
# 95th percentile volur Queue shown is max				queue may be longer.

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Barrio Logan CPU
170: Cesar E. Chavez Pkwv &

Horizon Year Alt 2 with Improvements Timing Plan: AM Peak

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Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	9	9	214	503
v/c Ratio	0.07	0.07	0.08	0.26
Control Delay	22.0	22.0	1.4	6.2
Queue Delay	0.0	0.0	0.0	0.1
Total Delay	22.0	22.0	1.4	6.2
Queue Length 50th (ft)	3	3	4	34
Queue Length 95th (ft)	11	11	17	56
Internal Link Dist (ft)	167	457	11	201
Turn Bay Length (ft)				
Base Capacity (vph)	352	352	2989	2686
Starvation Cap Reductn	0	0	0	758
Spillback Cap Reductn	0	0	0	858
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.03	0.03	0.07	0.28
Intersection Summary				

Barrio Logan CPU 270: Sampson St &					Horizon Year Alt 2 with Improvement Timing Plan: AM Pea
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	90	120	
v/c Ratio	0.07	0.07	0.05	0.10	
Control Delay	21.6	21.6	0.6	4.3	
Queue Delay	0.0	0.0	0.0	0.2	
Total Delay	21.6	21.6	0.6	4.5	
Queue Length 50th (ft)	2	2	0	5	
Queue Length 95th (ft)	11	11	m4	26	
Internal Link Dist (ft)	1363	1025	3	196	
Turn Bay Length (ft)					
Base Capacity (vph)	353	353	1681	1571	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	935	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.03	0.05	0.19	
Intersection Summary					
m Volume for 95th per	centile	queue i	s meter	ed by u	pstream signal.

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Barrio Logan CPU 320: Schley St &					Horizon Year Alt 2 with Improvements Timing Plan: AM Peak
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	82	102	
v/c Ratio	0.07	0.07	0.05	0.09	
Control Delay	19.5	19.5	0.3	4.9	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	19.5	19.5	0.3	4.9	
Queue Length 50th (ft)	2	2	0	5	
Queue Length 95th (ft)	13	13	m2	25	
Internal Link Dist (ft)	109	790	1	178	
Turn Bay Length (ft)					
Base Capacity (vph)	363	363	1598	1220	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	31	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.02	0.02	0.05	0.09	
Intersection Summary					
m Volume for 95th per	centile	queue i	s meter	ed by u	pstream signal.

Barrio Logan CPU 360: 28th St &					Horizon Year Alt 2 with Improvements Timing Plan: AM Peal
	→	ł	1	ţ	
Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	191	402	
v/c Ratio	0.07	0.07	0.06	0.12	
Control Delay	34.0	34.0	0.4	3.6	
Queue Delay	0.0	0.0	0.1	0.0	
Total Delay	34.0	34.0	0.6	3.6	
Queue Length 50th (ft)	5	5	2	17	
Queue Length 95th (ft)	16	16	2	25	
Internal Link Dist (ft)	726	567	134	10	
Turn Bay Length (ft)					
Base Capacity (vph)	370	370	3127	4168	
Starvation Cap Reductn	0	0	2171	0	
Spillback Cap Reductn	0	0	0	41	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.02	0.02	0.20	0.10	
Intersection Summary					

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Barrio Logan CPU 401: 32nd St &					Horizon Year Alt 2 with Improvement Timing Plan: AM Pea
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	516	1048	
v/c Ratio	0.06	0.06	0.12	0.36	
Control Delay	16.9	16.9	0.5	5.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	16.9	16.9	0.5	5.3	
Queue Length 50th (ft)	2	2	0	20	
Queue Length 95th (ft)	9	9	m6	71	
Internal Link Dist (ft)	2402	727	215	319	
Turn Bay Length (ft)					
Base Capacity (vph)	429	429	4424	3197	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	10	154	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.02	0.02	0.12	0.34	
Intersection Summary					

Barrio Logan CPU 1: Commercial St &	16th S	St			Horizon Year Alt 2 with Improvements Timing Plan: PM Peak
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	472	665	818	681	
v/c Ratio	1.61	0.85	0.58	0.52	
Control Delay	311.3	28.5	15.3	13.9	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	311.3	28.5	15.3	13.9	
Queue Length 50th (ft)	~267	212	116	88	
Queue Length 95th (ft)	#325	#400	166	133	
Internal Link Dist (ft)	166	452	369	79	
Turn Bay Length (ft)					
Base Capacity (vph)	293	786	1409	1320	
Starvation Cap Reductn		0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	1.61	0.85	0.58	0.52	
Intersection Summary					
~ Volume exceeds ca	pacity, o	queue is	theore	tically in	nfinite.
Queue shown is max	imum a	after two	cycles.		
# 95th percentile volu	me exce	eeds ca	pacity, o	queue n	nay be longer.

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Barrio Logan CPU	
2: National Ave & 16th St	

Horizon Year Alt 2 with Improvements Timing Plan: PM Peak

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Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	510	528	119	239
v/c Ratio	0.71	0.61	0.28	0.55
Control Delay	14.7	11.3	14.0	16.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.7	11.3	14.0	16.9
Queue Length 50th (ft)	63	62	15	29
Queue Length 95th (ft)	215	197	69	125
Internal Link Dist (ft)	711	588	202	369
Turn Bay Length (ft)				
Base Capacity (vph)	1024	1231	685	674
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.50	0.43	0.17	0.35
Intersection Summarv				

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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	38	420	10	306	162	75	
v/c Ratio	0.10	0.58	0.03	0.42	0.34	0.14	
Control Delay	7.9	11.3	7.6	9.2	10.7	5.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.9	11.3	7.6	9.2	10.7	5.7	
Queue Length 50th (ft)	3	36	1	24	15	3	
Queue Length 95th (ft)	21	160	9	111	65	25	
Internal Link Dist (ft)		588		570	296	200	
Turn Bay Length (ft)							
Base Capacity (vph)	616	1186	495	1198	869	958	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.35	0.02	0.26	0.19	0.08	

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Barrio Logan CPU	
6: Harbor Dr & Sigsbee St	

Horizon Year Alt 2 with Improvements Timing Plan: PM Peak

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Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	71	2114	924	98	76
v/c Ratio	0.18	0.82	0.36	0.39	0.26
Control Delay	4.1	9.3	3.5	35.8	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	9.3	3.5	35.8	11.1
Queue Length 50th (ft)	6	213	48	38	0
Queue Length 95th (ft)	22	406	92	96	37
Internal Link Dist (ft)		158	581	318	
Turn Bay Length (ft)	250				
Base Capacity (vph)	422	2802	2761	408	424
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.75	0.33	0.24	0.18
Intersection Summarv					

Barrio Logan CPU 7: Logan Ave & Bear	dsley	St				Horizon Year Alt 2 with Improvements Timing Plan: PM Peak					
	-	4	+	1	ţ						
Lane Group	EBT	WBL	WBT	NBT	SBT						
Lane Group Flow (vph)	654	43	174	195	456						
v/c Ratio	0.89	0.30	0.20	0.64	1.06						
Control Delay	40.4	43.6	12.6	26.4	93.5						
Queue Delay	0.0	0.0	0.0	0.0	0.0						
Total Delay	40.4	43.6	12.6	26.4	93.5						
Queue Length 50th (ft)	314	22	45	44	~292						
Queue Length 95th (ft)	#586	57	92	110	#518						
Internal Link Dist (ft)	154		618	298	247						
Turn Bay Length (ft)											
Base Capacity (vph)	772	153	975	411	431						
Starvation Cap Reductn	0	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0						
Reduced v/c Ratio	0.85	0.28	0.18	0.47	1.06						
Intersection Summary											
 Volume exceeds capacity, queue is theoretically infinite. 											
Queue shown is max	imum a	after two	cycles.								
# 95th percentile volum	ne exce	eeds ca	pacity, c	ueue m	nay be l	onger.					

Queue shown is maximum after two cycles.

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Barrio Logan CPU						ŀ	Horizon Year Alt 2 with Improvements
8: National Ave & Be	ardsle	ey St					Timing Plan: PM Peak
	۶	+	4	ł	1	ŧ	
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	21	692	123	473	200	306	
v/c Ratio	0.06	0.80	0.64	0.56	0.31	0.73	
Control Delay	8.6	19.3	28.7	12.1	6.8	28.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.6	19.3	28.7	12.1	6.8	28.3	
Queue Length 50th (ft)	3	151	24	82	11	72	
Queue Length 95th (ft)	14	329	#110	186	57	#224	
Internal Link Dist (ft)		570		608	299	298	
Turn Bay Length (ft)							
Base Capacity (vph)	429	1117	247	1087	814	549	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.05	0.62	0.50	0.44	0.25	0.56	
Intersection Summary							
# 95th percentile volun	ne exce	eds ca	pacity, o	queue m	ay be l	onger.	

Barrio Logan CPU						Horizon Year Alt 2 with Improvements				
12: Kearney St & Ce	esar E	. Chav	ez Pkv	vy		Timing Plan: PM Pea				
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Lane Group	WBL	WBT	NBL	NBT	SBT					
Lane Group Flow (vph)	459	473	416	373	409					
v/c Ratio	0.88	0.88	0.87	0.74	0.66					
Control Delay	44.7	42.3	47.0	35.4	32.4					
Queue Delay	2.2	2.1	0.0	0.0	0.1					
Total Delay	46.9	44.4	47.0	35.4	32.4					
Queue Length 50th (ft)	211	202	184	157	91					
Queue Length 95th (ft)	#429	#426	#371	#306	136					
Internal Link Dist (ft)		251		313	132					
Turn Bay Length (ft)										
Base Capacity (vph)	531	546	495	521	895					
Starvation Cap Reductn	0	0	0	0	0					
Spillback Cap Reductn	21	21	0	0	32					
Storage Cap Reductn	0	0	0	0	0					
Reduced v/c Ratio	0.90	0.90	0.84	0.72	0.47					
Intersection Summary										
# 95th percentile volume exceeds capacity, queue may be longer.										
Ouque chown ic may	imum a	oftor two	avalas							

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	141	489	250	109	380	98	152	550	761	124	798	
v/c Ratio	0.54	0.88	0.41	1.47	0.48	0.14	0.72	0.51	1.12	0.66	0.84	
Control Delay	42.6	54.8	8.3	299.6	25.9	5.3	63.4	28.6	96.4	61.4	40.5	
Queue Delay	0.0	0.0	0.1	27.4	0.0	0.0	0.0	0.3	19.9	0.0	0.5	
Total Delay	42.6	54.8	8.4	327.0	25.9	5.3	63.4	28.9	116.2	61.4	41.1	
Queue Length 50th (ft)	79	311	12	~101	181	0	96	153	~446	79	254	
Queue Length 95th (ft)	169	#595	83	#195	321	35	#198	214	#729	151	332	
Internal Link Dist (ft)		618			587			299			313	
Turn Bay Length (ft)												
Base Capacity (vph)	261	556	616	74	797	716	250	1297	677	241	1241	
Starvation Cap Reductn	0	0	0	0	0	0	0	268	27	0	147	
Spillback Cap Reductn	0	0	23	3	0	0	0	0	0	0	94	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.54	0.88	0.42	1.54	0.48	0.14	0.61	0.53	1.17	0.51	0.73	
Intersection Summary												

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Group Flow (vph)	326	435	315	120	293	299	130	1196	130	598	446	_
v/c Ratio	0.99	0.62	0.42	0.56	0.42	0.47	0.52	0.71	1.07	0.71	0.49	
Control Delay	76.7	25.2	6.6	31.8	20.9	17.2	17.7	14.0	129.6	20.1	3.9	
Queue Delay	16.8	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	7.5	0.4	
Total Delay	93.5	25.2	6.6	31.8	20.9	17.3	17.7	14.4	129.6	27.6	4.3	
Queue Length 50th (ft)	159	174	22	46	106	83	32	205	~74	212	11	
Queue Length 95th (ft)	#326	270	77	#109	173	154	m70	168	#121	337	56	
Internal Link Dist (ft)		608			780			301		299		
Turn Bay Length (ft)												
Base Capacity (vph)	328	699	748	215	699	637	252	1678	121	845	908	
Starvation Cap Reductn	0	0	0	0	0	0	0	125	0	204	141	
Spillback Cap Reductn	18	0	0	0	0	33	0	11	0	5	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.05	0.62	0.42	0.56	0.42	0.50	0.52	0.77	1.07	0.93	0.58	
Intersection Summary	Intersection Summany											

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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Barrio Logan CPU						F	lorizor	n Year	Alt 2 with Improvements
15: Newton Ave & Ce	esar E	. Cha	vez Pk	wy					Timing Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	130	217	98	217	43	924	185	1054	
v/c Ratio	0.69	0.61	0.52	0.53	0.40	0.40	0.61	0.87	
Control Delay	48.3	31.2	37.9	16.6	17.7	4.3	16.7	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	
Total Delay	48.3	31.2	37.9	16.6	17.7	4.4	16.7	17.9	
Queue Length 50th (ft)	62	83	45	40	6	62	26	168	
Queue Length 95th (ft)	107	134	82	91	m12	65 r	n#162	#797	
Internal Link Dist (ft)		598		178		305		301	
Turn Bay Length (ft)									
Base Capacity (vph)	344	620	344	651	108	2287	302	1206	
Starvation Cap Reductn	0	0	0	0	0	494	0	2	
Spillback Cap Reductn	0	0	0	0	0	5	0	1	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.38	0.35	0.28	0.33	0.40	0.52	0.61	0.88	
Intersection Summary									
# 95th percentile volum	ne exce	eds ca	pacity, o	queue m	nay be l	onger.			
Queue shown is maxi	mum a	fter two	cycles			-			
m Volume for 95th per	centile	queue i	s meter	ed by u	pstream	n signal.			

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			•	WDT	1	NDT	0.51	•	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	130	342	76	272	92	892	272	891	
v/c Ratio	0.59	0.73	0.43	0.58	0.79	0.46	1.00	0.88	
Control Delay	35.9	35.4	30.5	30.0	64.3	8.4	57.9	18.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.2	0.0	6.4	
Total Delay	35.9	35.4	30.5	30.0	64.3	9.6	57.9	24.6	
Queue Length 50th (ft)	58	157	33	122	28	87	72	97	
Queue Length 95th (ft)	102	216	65	171	#135	170 ו	m#218 r	n#604	
Internal Link Dist (ft)		588		983		201		305	
Turn Bay Length (ft)									
Base Capacity (vph)	294	624	238	629	116	1949	273	1007	
Starvation Cap Reductn	0	0	0	0	0	777	0	86	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.44	0.55	0.32	0.43	0.79	0.76	1.00	0.97	
Intersection Summary									

m Volume for 95th percentile queue is metered by upstream signal.

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Barrio Logan CPU	_	~				F	lorizor	n Year			provement
17: Harbor Dr & Ces	ar E.	Chave	z Pkw	/					I	Iming Pi	an: PM Pea
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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	
Lane Group Flow (vph)	641	1673	33	508	47	54	68	38	69	341	
v/c Ratio	0.84	0.95	0.41	0.50	0.09	0.43	0.37	0.22	0.22	0.46	
Control Delay	53.3	33.6	71.7	17.9	3.8	55.8	50.9	15.7	28.7	5.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	
Total Delay	53.3	33.6	71.7	17.9	3.9	55.8	51.1	15.7	28.7	5.5	
Queue Length 50th (ft)	232	452	24	76	0	38	47	0	36	35	
Queue Length 95th (ft)	#460	#968	#78	130	12	79	91	30	67	62	
Internal Link Dist (ft)		578		501			308		11		
Turn Bay Length (ft)	140		100			150					
Base Capacity (vph)	763	1757	82	1167	818	328	469	388	526	741	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	201	0	124	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.84	0.95	0.40	0.44	0.08	0.16	0.20	0.10	0.13	0.46	
Intersection Summary											
# 95th percentile volur	ne exco	eeds ca	pacity (nueue n	nav be lo	onger					

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	110	490	182	147	250	617	72	313	
v/c Ratio	0.25	0.73	0.83	0.22	0.54	0.66	0.38	0.33	
Control Delay	14.8	21.4	50.2	9.0	19.3	18.2	21.3	12.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	
Total Delay	14.8	21.4	50.2	9.0	19.3	20.1	21.3	12.7	
Queue Length 50th (ft)	29	138	63	23	66	172	17	71	
Queue Length 95th (ft)	61	231	#163	54	169	#360	65	153	
Internal Link Dist (ft)		167		249		281		225	
Turn Bay Length (ft)									
Base Capacity (vph)	560	827	273	826	466	937	189	953	
Starvation Cap Reductn	0	0	0	0	0	178	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.20	0.59	0.67	0.18	0.54	0.81	0.38	0.33	

sour percentile volume exceeds capacity, queue may be

Queue shown is maximum after two cycles.

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Barrio Logan CPU						ŀ	Horizon Year Alt 2 with Improvements
24: National Ave & S	Samps	on St					Timing Plan: PM Peak
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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	180	134	23	190	273	368	
v/c Ratio	0.55	0.25	0.07	0.34	0.28	0.48	
Control Delay	17.0	9.8	9.8	6.3	7.4	9.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.0	9.8	9.8	6.3	7.4	9.4	
Queue Length 50th (ft)	21	13	2	8	25	34	
Queue Length 95th (ft)	86	55	16	49	87	131	
Internal Link Dist (ft)		581		561	314	281	
Turn Bay Length (ft)							
Base Capacity (vph)	565	909	609	887	1255	983	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	21	0	0	34	48	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.33	0.15	0.04	0.22	0.23	0.37	
Intersection Summary							

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Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	
Lane Group Flow (vph)	61	1635	21	603	191	161	
v/c Ratio	0.39	0.92	0.26	0.38	0.65	0.35	
Control Delay	57.9	30.2	65.7	14.2	50.0	30.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	57.9	30.2	65.7	14.2	50.0	30.8	
Queue Length 50th (ft)	33	369	12	117	97	66	
Queue Length 95th (ft)	101	#743	#52	139	218	143	
Internal Link Dist (ft)		413		428	186	3	
Turn Bay Length (ft)	230		250				
Base Capacity (vph)	221	2112	80	1821	623	615	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	60	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.28	0.77	0.26	0.34	0.31	0.26	

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Barrio Logan CPU	
32: Harbor Dr & Schley St	

Horizon Year Alt 2 with Improvements Timing Plan: PM Peak

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Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	117	1630	692	61
v/c Ratio	0.59	0.68	0.39	0.11
Control Delay	50.7	11.9	12.5	0.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	50.7	11.9	12.5	0.8
Queue Length 50th (ft)	52	300	131	0
Queue Length 95th (ft)	134	322	106	0
Internal Link Dist (ft)		378	228	
Turn Bay Length (ft)	75			
Base Capacity (vph)	327	2709	1886	630
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	73	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	0.60	0.38	0.10
Intersection Summarv				

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR	
Lane Group Flow (vph)	102	639	92	487	703	127	177	440	111	
v/c Ratio	0.69	0.77	0.21	0.98	0.84	0.27	0.28	0.98	0.19	
Control Delay	71.9	43.4	7.5	74.3	34.0	28.3	5.4	74.5	6.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	71.9	43.4	7.5	74.3	34.0	28.3	5.4	74.5	6.0	
Queue Length 50th (ft)	66	208	0	318	382	61	0	286	0	
Queue Length 95th (ft)	#154	271	38	#580	553	119	49	#534	39	
Internal Link Dist (ft)		590			82	387		221		
Turn Bay Length (ft)										
Base Capacity (vph)	154	997	512	495	885	465	628	448	584	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.66	0.64	0.18	0.98	0.79	0.27	0.28	0.98	0.19	

95th percentile volume exceeds capacity, queue may be longer Queue shown is maximum after two cycles.

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Barrio Logan CPU 34: Boston Ave & 28	th St		Horizon Year Alt 2 with Impr Timing Pla							
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	380	457	185	76	163	54	1305	293	1010	
v/c Ratio	1.01	0.75	0.29	0.52	0.27	0.42	1.01	1.07	0.43	
Control Delay	81.8	35.1	4.6	38.6	13.5	49.7	57.7	111.4	13.2	
Queue Delay	0.0	0.0	0.1	1.5	0.0	0.0	95.3	0.0	0.7	
Total Delay	81.8	35.1	4.7	40.1	13.5	49.7	153.0	111.4	13.9	
Queue Length 50th (ft)	~219	226	0	34	36	30	~393	~186	108	
Queue Length 95th (ft)	#403	343	43	#88	83	67	#547	#342	143	
Internal Link Dist (ft)		207			577		298		206	
Turn Bay Length (ft)										
Base Capacity (vph)	375	612	641	147	609	135	1288	275	2367	
Starvation Cap Reductn	0	0	0	0	0	0	239	0	905	
Spillback Cap Reductn	0	0	64	15	0	0	0	0	151	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.01	0.75	0.32	0.58	0.27	0.40	1.24	1.07	0.69	
Intersection Summary										
 Volume exceeds cap 	oacity, d	queue is	theore	tically ir	nfinite.					
Queue shown is max	imum a	fter two	cycles							
# 95th percentile volum	ne exce	eds ca	bacity, o	queue n	nay be le	onger.				

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	239	836	163	641	65	739	402	1152	
v/c Ratio	0.97	0.56	0.94	0.42	0.81	0.98	0.95	0.99dr	
Control Delay	84.0	25.2	86.6	12.7	111.3	67.3	74.7	32.9	
Queue Delay	125.7	0.0	0.0	0.2	0.0	22.4	29.2	31.9	
Total Delay	209.7	25.2	86.6	12.9	111.3	89.7	103.9	64.8	
Queue Length 50th (ft)	161	226	107	87	46	251	280	308	
Queue Length 95th (ft)	#327	288	#247	134	#129	#384	#470	#462	
Internal Link Dist (ft)		327		314		290		298	
Turn Bay Length (ft)									
Base Capacity (vph)	248	1509	176	1536	80	753	429	1281	
Starvation Cap Reductn	0	0	0	0	0	0	49	198	
Spillback Cap Reductn	65	0	0	281	0	55	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.31	0.55	0.93	0.51	0.81	1.06	1.06	1.06	
Intersection Summary									

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Queue shown is maximum after two cycles.

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ne Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR
ne Group Flow (vph)	185	1467	2	20	577	277	156	522	13	14
Ratio	0.62	1.13	0.00	0.21	0.56	0.38	0.54	0.65	0.03	0.04
ntrol Delay	72.8	103.4	39.5	77.8	34.3	3.8	60.8	37.0	19.7	12.4
eue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
tal Delay	72.8	103.4	39.5	77.8	34.3	3.8	60.8	37.5	19.7	12.4
eue Length 50th (ft)	97	~972	1	20	190	0	145	161	6	2
eue Length 95th (ft)	144	#1098	9	53	235	46	228	209	18	14
nal Link Dist (ft)		247			310		22		129	
n Bay Length (ft)	150			75						210
e Capacity (vph)	392	1294	414	116	1131	753	478	1100	597	373
vation Cap Reductn	0	0	0	0	0	0	0	230	0	0
back Cap Reductn	0	0	0	0	0	0	0	0	0	0
age Cap Reductn	0	0	0	0	0	0	0	0	0	0
uced v/c Ratio	0.47	1.13	0.00	0.17	0.51	0.37	0.33	0.60	0.02	0.04

 Queue shown is maximum after two cycles.

 # 95th percentile volume exceeds capacity, queue may be longer.

 Queue shown is maximum after two cycles.

Barrio Logan CPU 37: Boston Ave & I-5	SB C)n-ram	р	Horizon Year Alt 2 with Improvements Timing Plan: PM Peal
	→	+	1	
Lane Group	EBT	WBT	NBT	
Lane Group Flow (vph)	629	258	438	
v/c Ratio	0.93	0.81	0.91	
Control Delay	47.6	46.9	54.6	
Queue Delay	0.0	0.0	0.0	
Total Delay	47.6	46.9	54.6	
Queue Length 50th (ft)	330	108	236	
Queue Length 95th (ft)	#550	#225	#417	
Internal Link Dist (ft)	577	323	73	
Turn Bay Length (ft)				
Base Capacity (vph)	726	365	522	
Starvation Cap Reductn	0	0	0	
Spillback Cap Reductn	0	0	0	
Storage Cap Reductn	0	0	0	
Reduced v/c Ratio	0.87	0.71	0.84	
Intersection Summary				
	ne exce	eds ca	pacity.	queue may be longer.
Queue shown is maxi				

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Barrio Logan CPU 38: Main St & 32nd S	St			Horizon Year Alt 2 with Improvements Timing Plan: PM Peak						
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	68	948	225	585	210	122	334	161	140	
v/c Ratio	0.42	0.90	0.85	0.41	0.75	0.36	0.64	0.65	0.42	
Control Delay	44.3	40.2	63.7	18.5	51.6	30.4	11.3	46.0	20.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.3	40.2	63.7	18.5	51.6	30.4	11.3	46.0	20.3	
Queue Length 50th (ft)	30	208	101	95	91	53	16	69	34	
Queue Length 95th (ft)	77	#417	#267	183	#228	99	87	#153	81	
Internal Link Dist (ft)		151		932		1629			377	
Turn Bay Length (ft)										
Base Capacity (vph)	185	1053	266	1425	296	530	653	290	516	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.37	0.90	0.85	0.41	0.71	0.23	0.51	0.56	0.27	
Intersection Summary										
# 95th percentile volun	# 95th percentile volume exceeds capacity, queue may be longer.									

Queue shown is	maximum	after t	two cy	cles.
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							Timing Plan: PM Peak				
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Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SWL	
Lane Group Flow (vph)	250	228	206	451	152	391	870	489	446	234	
v/c Ratio	1.00	0.44	0.85	1.03	0.69	1.03	0.80	1.27	0.44	0.49	
Control Delay	101.8	27.8	70.9	93.8	64.3	100.9	37.1	179.5	36.1	47.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	
Total Delay	101.8	27.8	70.9	93.8	64.3	100.9	40.0	179.5	36.1	47.7	
Queue Length 50th (ft)	~201	100	148	~373	111	~324	318	~473	145	82	
Queue Length 95th (ft)	#377	182	#299	#595	181	#534	408	#701	211	122	
Internal Link Dist (ft)		174	440			351			1629	472	
Turn Bay Length (ft)											
Base Capacity (vph)	249	518	243	436	274	378	1150	384	1014	581	
Starvation Cap Reductn	0	0	0	0	0	0	177	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.00	0.44	0.85	1.03	0.55	1.03	0.89	1.27	0.44	0.40	
Intersection Summary											

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

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Barrio Logan CPU Horizon Year Alt 2 with Improvements 40: Harbor Dr & 32nd St Timing Plan: PM Peak												
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	1261	109	43	472	500	76	750	152	337	304	228
v/c Ratio	0.71	1.12	0.19	0.74	0.64	0.77	0.52	1.01	0.40	0.92	0.23	0.26
Control Delay	64.1	98.9	10.0	117.7	37.6	15.3	65.4	81.6	24.6	64.9	20.1	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.6	0.3	0.2
Total Delay	64.1	98.9	10.0	117.7	37.6	15.3	65.4	81.6	24.6	93.5	20.4	2.6
Queue Length 50th (ft)	116	~559	20	30	162	15	51	270	42	162	54	15
Queue Length 95th (ft)	211	#593	54	#113	139	#213	114	#516	123	#482	99	47
Internal Link Dist (ft)		710			294			45			182	
Turn Bay Length (ft)	230		200	200		200				200		
Base Capacity (vph)	371	1126	585	58	739	648	193	743	384	365	1310	862
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	44	518	165
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	1.12	0.19	0.74	0.64	0.77	0.39	1.01	0.40	1.05	0.38	0.33
Intersection Summary			41	tie eller in								
 Volume exceeds cap 					ntinite.							
Queue shown is maximum after two cycles.												

gate of the second secon

Barrio Logan CPU 41: Main St & I-15 R	amps					Horizon Year Alt 2 with Improvements Timing Plan: PM Peal
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Lane Group	EBL	EBT	WBT	WBR	SBL	
Lane Group Flow (vph)	277	808	405	167	270	
v/c Ratio	0.62	0.40	0.49	0.33	0.57	
Control Delay	26.8	7.0	19.1	5.9	16.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	26.8	7.0	19.1	5.9	16.5	
Queue Length 50th (ft)	62	48	49	0	43	
Queue Length 95th (ft)	#219	138	111	41	114	
Internal Link Dist (ft)		932	312		271	
Turn Bay Length (ft)						
Base Capacity (vph)	518	2334	1292	684	737	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.53	0.35	0.31	0.24	0.37	
Intersection Summary						
# 95th percentile volur					nay be l	onger.

Queue shown is maximum after two cycles.

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Barrio Logan CPU
42: I-5 SB off-ramp & 28th St

Horizon Year Alt 2 with Improvements Timing Plan: PM Peak

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Intersection Summary

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Barrio Logan CPU 170: Cesar E. Chave	ez Pkv	vy &	Horizon Year Alt 2 with Improvement Timing Plan: PM Pea		
	+	ł	1	Ŧ	
Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	523	337	
v/c Ratio	0.08	0.08	0.18	0.15	
Control Delay	32.5	32.5	0.2	4.6	
Queue Delay	0.0	0.0	0.0	0.1	
Total Delay	32.5	32.5	0.2	4.7	
Queue Length 50th (ft)	5	5	1	22	
Queue Length 95th (ft)	17	17	m4	33	
Internal Link Dist (ft)	517	1529	11	201	
Turn Bay Length (ft)					
Base Capacity (vph)	277	277	3086	2905	
Starvation Cap Reductn	0	0	0	1210	
Spillback Cap Reductn	0	0	129	1060	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.03	0.18	0.20	
Intersection Summary					
m Volume for 95th per	centile	queue i	s meter	ed by u	pstream signal.

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Barrio Logan CPU 270: Sampson St &					Horizon Year Alt 2 with Improvements Timing Plan: PM Peak
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	190	115	
v/c Ratio	0.07	0.07	0.11	0.09	
Control Delay	28.6	28.6	0.5	3.6	
Queue Delay	0.0	0.0	0.0	0.2	
Total Delay	28.6	28.6	0.5	3.7	
Queue Length 50th (ft)	3	3	0	5	
Queue Length 95th (ft)	15	15	9	25	
Internal Link Dist (ft)	291	945	3	196	
Turn Bay Length (ft)					
Base Capacity (vph)	356	356	1703	1635	
Starvation Cap Reductn	0	0	0	0	

0 1025

0

0

Storage Cap Reductn Reduced v/c Ratio Intersection Summary

Spillback Cap Reductn

0

0

0

0

0.03 0.03 0.11 0.19

Barrio Logan CPU Horizon Year Alt 2 with Improvements 320: Schley St & → ← †. Ŧ Lane Group EBT WBT NBT SBT Lane Group Flow (vph) 9 9 124 51 v/c Ratio 0.08 0.08 0.07 0.04 Control Delay 26.0 26.0 0.5 4.9 Queue Delay 0.0 0.0 0.0 0.0 Total Delay 26.0 26.0 0.5 4.9 Queue Length 50th (ft) 3 3 0 3

16

190 1010

387

0

0

0

16

387

0

0

0

0.02 0.02 0.08 0.04

7 15

1594 1408

0

0 13

0

182 1

0

0

Queue Length 95th (ft) Internal Link Dist (ft)

Starvation Cap Reductn

Spillback Cap Reductn

Storage Cap Reductn

Intersection Summary

Reduced v/c Ratio

Turn Bay Length (ft) Base Capacity (vph)

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Timing Plan: PM Peak

Barrio Logan CPU 360: 28th St &					Horizon Year Alt 2 with Improvement Timing Plan: PM Pea
	-	+	Ť	ţ	
Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	554	549	
v/c Ratio	0.09	0.09	0.18	0.15	
Control Delay	36.9	36.9	0.5	3.2	
Queue Delay	0.0	0.0	0.2	0.0	
Total Delay	36.9	36.9	0.7	3.2	
Queue Length 50th (ft)	5	5	7	24	
Queue Length 95th (ft)	16	16	8	33	
Internal Link Dist (ft)	512	1235	129	6	
Turn Bay Length (ft)					
Base Capacity (vph)	258	258	3139	4232	
Starvation Cap Reductn	0	0	1640	0	
Spillback Cap Reductn	0	0	0	604	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.03	0.37	0.15	
Intersection Summary					

Barrio Logan CPU 401: 32nd St &					Horizon Year Alt 2 with Improvement Timing Plan: PM Pea
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Lane Group	EBT	WBT	NBT	SBT	
Lane Group Flow (vph)	9	9	1138	651	
v/c Ratio	0.09	0.09	0.25	0.18	
Control Delay	27.4	27.4	0.3	3.2	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	27.4	27.4	0.3	3.2	
Queue Length 50th (ft)	3	3	0	11	
Queue Length 95th (ft)	12	12	m9	40	
Internal Link Dist (ft)	1768	925	182	351	
Turn Bay Length (ft)					
Base Capacity (vph)	279	279	4619	3690	
Starvation Cap Reductn	0	0	613	0	
Spillback Cap Reductn	0	0	93	137	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.03	0.28	0.18	
Intersection Summary					
m Volume for 95th per	centile	queue i	s meter	ed by u	pstream signal.

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APPENDIX K



Conceptual plan illustrations are provided to demonstrate general feasibility of the proposed mitigation measures only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.



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FIGURE K-1 Proposed X-Sections Cesar Chavez Pkwy



LEGEND

Add second EB left-turn lane from Harbor Drive to Cesar Chavez Parkway. Extend EB left-turn pockets to 450 feet. 1

2 Add "Sharrow" bicycle markings.

- 3 Add exclusive NB right-turn lane at the intersection of Cesar Chavez Parkway and Harbor Drive (this improvement will be completed by Caltrans). 4
 - Extend WB left-turn lane from Harbor Drive to southbound Cesar Chavez Parkway. (this improvement will be completed by Caltrans).

5 Add 2' wide raised median.

Conceptual plan illustrations are provided to demonstrate general feasibility of the proposed mitigation measures only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

Figure K-2: Cesar Chavez Parkway Improvements between Harbor Drive to Main Street

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6 Add exclusive WB right-turn lane.











LEGEND

1 Add "Sharrow" pavement markings 3 Eight foot paralell parking to be done by others.

2 Add 4'-16' wide raised median Add exclusive right-turn lane.

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Figure K-3: Cesar Chavez Parkway Improvements between Main Street and National Avenue

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LEGEND

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3

1 Add parking.



Conceptual plan illustrations are provided to demonstrate general feasibility of the proposed mitigation measures only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.



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FIGURE K-5 28th Street Proposed X-Sections (INTERIM)



LEGEND

- 1 Stripe westbound left-turn along Main Street at 29th Street
- 2 Convert Boston Avenue between 29th Street to 32nd Street to residential local
- 3
- street with 36 feet of curb to curb width.
- Restripe 28th Street and add third southbound thru lane between (5) I-5 and Boston Ave. Stripe out inside eastbound through lane along Main Street just east of 29th Street.

(4)

- Widen along east side of 28th Street to accomodate restriping and addition 6 of third southbound thru lane. (this widening should only fix the alignment thru the intersection and should tie back to the bridge)
- Add truck restriction for the northbound right-turn movement. $\overline{7}$

Figure K-6: 28th Street Freeway Access Improvements - between Main Street and National Avenue

Convert Boston Avenue to a Commercial Local Street. Evaluate for

with diagonal parking along both sides (52' curb to curb width)

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Install traffic signal.

Install raised median.

Add exclusive southbound right-turn lane.







LEGEND 6 Remove parking along west side of 28th Street between Main Street and Harbor Drive. Widen roadway 4' to the west to accomodate proposed Add raised median to channelize SB left-turn movement onto (4)1 Modify raised median along Harbor Drive to accomodate second EB left-turn improvements. Reconstruct driveways and curb ramps (8-10 fewer parking spaces). lane from Harbor Drive to 28th Street to improve truck turning from Harbor Drive. Naval Base. \overline{O} Remove parking along east side of 28th Street between Main Street and Harbor Drive. Reconstruct driveways and curb ramps (10-12 fewer parking spaces.) 2 Modify median along 28th Street between Harbor Drive and Main Street. 5 Widen sidewalk by five feet Widen sidewalk to 10'. 8 Add "quad" gates. 3 Add second SB left-turn lane from 28th Street to Harbor Drive. Figure K-7: 28th Street and Harbor Drive improvements (Interim)

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FIGURE K-8 28th Street Proposed X-Sections (ULTIMATE)





FIGURE K-9 Proposed X-Sections National Ave

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FIGURE K-10 Proposed X-Sections National Ave





		4	Add eastbound right-turn lane.	
EGEND		5	Remove diagonal parking.	
1	Install "sharrow" bicycle markings between Commercial St and Cesar Chavez Pkwy.	6	Evaluate for traffic calming measures that address emergency vehicle route requirements.	Conceptual plan illustrations are p
2	Install two-way left-turn lane.			proposed mitigation measures on
3	Install traffic signal.	(7)	Evaluate the installation of intersection pop-outs and crosswalk improvements.	engineering studies and design w

Figure K-11: National Avenue Improvements - between Commercial St and Cesar Chavez Pkwy

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e provided to demonstrate general feasibility of the only. Actual improvements will require additional work and shall be to the satisfaction of the City Engineer.



March 2011

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LEGEND

- 1 Add "sharrow" bicycle markings between Cesar Chavez Parkway and 26th Street .
- 2 Evaluate for traffic calming measures that address emergency vehicle route requirements.

- 3 Consider the installation of intersection pop-outs and crosswalk improvements.
- 4 Install an exclusive westbound right-turn lane.

Conceptual plan illustrations are provided to demonstrate general feasibility of the proposed mitigation measures only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

Figure K-12: National Avenue Improvements - between Cesar Chavez Parkway and 26th Street

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FIGURE K-13 Boston Avenue and 26th Street Proposed X-Sections





- 1 Enlarge center island to eliminate the northbound lane of 26th Street between Main Street and Boston Avenue.
- 2 Convert Boston Avenue and 26th Street to a "Green Street" with "Sharrow" treatments for bycicle circulation.

Figure K-14: Boston Avenue and 26th Street Improvements

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3

- 4 Widen sidewalk along both sides of Boston Avenue by six feet. Add landscape.
 - Provide drainage and landscape improvements to raised median along Main Street.

Sharrow vehicle/bicycle lane.

- 6 Restripe the NB and SB through lanes at the intersection of Main Street and Schley Street.
 - Provide a 10' NB striped out lane for fire access.

7

8 Prohibit southbound through and southbound left-turn movements.

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FIGURE K-15 Main Street Proposed X-Sections





LEGEND

() Restripe roadway segment to accomodate a two-way left-turn lane and paralell parking along both sides.

2 Left-turn lane would be removed with improvements to the Main St/26th St and Schley St intersection depicted on Figure 19.

Figure K-16: Main Street Improvements - between Cesar Chavez Parkway and 26th Street

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APPENDIX L

Synchro analysis for queuing related mitigations

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	ň	个	2¥	γ.	ţ.	1	45	朴志)r	41 2	
Volume (vph)	190	250	180	120	350	120	90	580	70	745	
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		
Protected Phases		4			8			2		6	
Permitted Phases	4		4	8		8	2		6		
Detector Phases	4	4	4	8	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	27.1	27.1	27.1	27.1	27.1	27.1	44.9	44.9	44.9	44.9	
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34	0.34	0.56	0.56	0.56	0.56	
v/c Ratio	0.89	0.43	0.31	0.42		0.21	0.65	0.38	0.25	0.68	
Control Delay	62.7	21.9	7.0	23.7	25.7	4.3	36.5	8.7	13.4		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	
Total Delay	62.7	21.9	7.0	23.7	25.7	4.3	36.5	8.7	13.4	15.2	
LOS	E	С	A	С	С	A	D	A	В	В	
Approach Delay		30.1			20.9			12.2		15.1	
Approach LOS		С			С			В		В	
Intersection Summary											
Cycle Length: 80											
Actuated Cycle Length	: 80										
Offset: 0 (0%), Referen	nced to p	bhase 2	NBTL a	and 6:SI	BTL, Sta	art of G	reen				
Natural Cycle: 75											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.	89										
Intersection Signal Del	ay: 18.6			1	ntersec	tion LO	S: B				
Intersection Capacity Utilization 77.8% ICU Level of Service D											

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy
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46 s	34 s	
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46 s	34 s	

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Barrio Logan CPU	Horizon Year Alt 1 with Grade Separa	ation and Coordination
14: National Ave & Cesar E. C	navez Pkwy	Timing Plan: AM Peak
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	207	272	196	130	380	130	98	684	76	1147	
v/c Ratio	0.89	0.43	0.31	0.42	0.60	0.21	0.65	0.38	0.25	0.68	
Control Delay	62.7	21.9	7.0	23.7	25.7	4.3	36.5	8.7	13.4	14.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	
Total Delay	62.7	21.9	7.0	23.7	25.7	4.3	36.5	8.7	13.4	15.2	
Queue Length 50th (ft)	84	91	16	43	136	0	26	82	22	212	
Queue Length 95th (ft)	#211	160	59	94	230	33 r	n#123	105	48	270	
Internal Link Dist (ft)		608			780			301		299	
Turn Bay Length (ft)											
Base Capacity (vph)	263	713	694	353	713	686	153	1820	311	1717	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	267	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.79	0.38	0.28	0.37	0.53	0.19	0.64	0.38	0.24	0.79	
Intersection Summary											

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal.

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Synchro 6 Report

3/4/2011

Barrio Logan CPU Horizon Year Alt 1 with Grade Separation and Coordination 14: National Ave & Cesar E. Chavez Pkwy Timing Plan: AM Peak												
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	4	7*	74	*	7	h	朴		7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3185		1530	2924	
Flt Permitted	0.34	1.00	1.00	0.47	1.00	1.00	0.17	1.00		0.35	1.00	
Satd. Flow (perm)	625	1863	1583	882	1863	1583	292	3185		563	2924	
Volume (vph)	190	250	180	120	350	120	90	580	50	70	745	310
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	272	196	130	380	130	98	630	54	76	810	337
RTOR Reduction (vph)	0	0	95	0	0	86	0	7	0	0	53	0
Lane Group Flow (vph)	207	272	101	130	380	44	98	677	0	76	1094	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	27.1	27.1	27.1	27.1	27.1	27.1	44.9	44.9		44.9	44.9	
Effective Green, g (s)	27.1	27.1	27.1	27.1	27.1	27.1	44.9	44.9		44.9	44.9	
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34	0.34	0.56	0.56		0.56	0.56	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	212	631	536	299	631	536	164	1788		316	1641	
v/s Ratio Prot	212	0.15	000	200	0.20	000	101	0.21		010	c0.37	
v/s Ratio Perm	c0.33	0.10	0.06	0.15	0.20	0.03	0.34	0.21		0.13	00.07	
v/c Ratio	0.98	0.43	0.19	0.43	0.60	0.08	0.60	0.38		0.24	0.67	
Uniform Delay, d1	26.1	20.5	18.7	20.5	22.0	18.0	11.6	9.8		8.9	12.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.77		1.00	1.00	
Incremental Delay, d2	54.5	0.5	0.2	1.0	1.6	0.1	14.9	0.6		1.8	2.2	
Delay (s)	80.7	21.0	18.9	21.5	23.6	18.1	24.1	8.1		10.7	14.5	
Level of Service	50.7 F	21.0 C	B	C	20.0 C	B	C	A		В	B	
Approach Delay (s)		38.7		5	22.1		5	10.1			14.2	
Approach LOS		D			C			B			B	
Intersection Summary												
HCM Average Control E			19.7	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.78									
Actuated Cycle Length (s)		80.0	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Utilization 77.8%		10	CU Lev	el of Se	rvice		D					
Analysis Period (min)			15									
c Critical Lane Group												

С	Critical	Lane	Group	
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Synchro 6 Report 3/4/2011

Kimley-Horn and Associates, Inc.

 Barrio Logan CPU
 Horizon Year Alt 1 with Grade Separation and Coordination

 15: Newton Ave & Cesar E. Chavez Pkwy
 Timing Plan: AM Peak

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	ž	ţ,	N.	Ъ	ž	41.	H	朴ト
Volume (vph)	75	40	40	50	40	410	95	810
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	37.0	37.0	37.0	37.0	43.0	43.0	43.0	43.0
Total Split (%)					53.8%			
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None		C-Min			
Act Effct Green (s)	9.8	9.8	9.8	9.8	64.9	64.9	64.9	64.9
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.81	0.81	0.81	0.81
v/c Ratio	0.53	0.41	0.28	0.46	0.17	0.18	0.17	0.40
Control Delay	44.7	19.3	35.0	20.9	5.6	3.3	1.6	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	44.7	19.3	35.0	20.9	5.6	3.3	1.6	1.7
LOS	D	В	С	С	A	A	A	
Approach Delay		30.3		24.5		3.5		1.7
Approach LOS		С		С		A		A
Intersection Summary								
Cycle Length: 80								
Actuated Cycle Length	: 80							
Offset: 33 (41%), Refe	renced t	o phase	2:NBT	L and 6	:SBTL,	Start of	Green	
Natural Cycle: 60								
Control Type: Actuated	d-Coordii	nated						
Maximum v/c Ratio: 0.	53							
Intersection Signal Del					ntersec			
Intersection Capacity L		า 51.0%		1	CU Lev	el of Se	ervice A	
Analysis Period (min) 1	15							
Splits and Phases: 1								

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy

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43 s	37 s

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15: Newton Ave & Co	Timing Plan: AM Peak								
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	82	108	43	125	43	479	103	1032	
v/c Ratio	0.53	0.41	0.28	0.46	0.17	0.18	0.17	0.40	
Control Delay	44.7	19.3	35.0	20.9	5.6	3.3	1.6	1.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay	44.7	19.3	35.0	20.9	5.6	3.3	1.6	1.7	
Queue Length 50th (ft)	39	20	20	25	6	33	3	16	
Queue Length 95th (ft)	78	61	47	69	m17	53	m7	40	
nternal Link Dist (ft)		598		178		305		301	
Turn Bay Length (ft)									
Base Capacity (vph)	520	737	528	745	248	2593	613	2565	
Starvation Cap Reductn	0	0	0	0	0	0	0	714	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.15	0.08	0.17	0.17	0.18	0.17	0.56	
Intersection Summary									
m Volume for 95th per	centile	queue i	s meter	ed by u	pstream	n signal.			

Horizon Year Alt 1 with Grade Separation and Coordination

15: Newton Ave & C	Cesar E	. Cha	vez Pk	wy					Т	iming F	Plan: AM	1 Pea
	≯	-	\mathbf{r}	4	+	•	•	t	۲	1	Ŧ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBI
Lane Configurations	×	Ţ,		Υ.	Þ		¥.	410		×	41.	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Fotal Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
ane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.91		1.00	0.91		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1695		1770	1704		1612	3190		1612	3152	
Flt Permitted	0.57	1.00		0.64	1.00		0.26	1.00		0.48	1.00	
Satd. Flow (perm)	1069	1695		1199	1704		447	3190		811	3152	
Volume (vph)	75	40	60	40	50	65	40	410	30	95	810	14
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Adj. Flow (vph)	82	43	65	43	54	71	43	446	33	103	880	15
RTOR Reduction (vph)	0	58	0	0	63	0	0	3	0	0	7	
Lane Group Flow (vph)	82	50	0	43	62	0	43	476	0	103	1025	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	129
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.7	8.7		8.7	8.7		63.3	63.3		63.3	63.3	
Effective Green, g (s)	8.7	8.7		8.7	8.7		63.3	63.3		63.3	63.3	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.79	0.79		0.79	0.79	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	116	184		130	185		354	2524		642	2494	
v/s Ratio Prot		0.03			0.04			0.15			c0.33	
/s Ratio Perm	c0.08			0.04			0.10			0.13		
v/c Ratio	0.71	0.27		0.33	0.33		0.12	0.19		0.16	0.41	
Uniform Delay, d1	34.4	32.7		33.0	33.0		1.9	2.0		2.0	2.6	
Progression Factor	1.00	1.00		1.00	1.00		1.23	1.31		0.37	0.37	
Incremental Delay, d2	17.8	0.8		1.5	1.1		0.7	0.2		0.4	0.4	
Delay (s)	52.2	33.5		34.5	34.0		3.0	2.8		1.2	1.4	
Level of Service	D	С		С	С		А	А		А	А	
Approach Delay (s)		41.6			34.1			2.9			1.4	
Approach LOS		D			С			А			А	
ntersection Summary												
HCM Average Control E			8.3	H	ICM Le	vel of S	ervice		А			
HCM Volume to Capaci	ty ratio		0.45									
Actuated Cycle Length ((s)		80.0	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut	ilization		51.0%			el of Se			А			
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group

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Synchro 6 Report 3/4/2011

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Barrio Logan CPU

Barrio Logan CPU	Horizon Year Alt	1 with Grade Separat	ion and Coordination
16: Main St & Cesar E. Chavez	Pkwy		Timing Plan: AM Peak
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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	ň	ħ	19	ţ.	1	ň	47.	16	4 16	
Volume (vph)	150	190	70	330	190	70	340	150	580	
Turn Type	Perm		Perm		Perm	Perm		Perm		
Protected Phases		4		8			2		6	
Permitted Phases	4		8		8	2		6		
Detector Phases	4	4	8	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	38.0	38.0	38.0	38.0	38.0	42.0	42.0	42.0	42.0	
Total Split (%)	47.5%	47.5%	47.5%	47.5%	47.5%	52.5%	52.5%	52.5%	52.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None		C-Min	C-Min			
Act Effct Green (s)	23.1	23.1	23.1	23.1	23.1	48.9	48.9	48.9	48.9	
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.61	0.61	0.61	0.61	
v/c Ratio	0.72	0.42	0.25	0.67	0.36	0.30	0.25	0.36	0.45	
Control Delay	42.4	23.1	21.0	30.3	4.5	14.6	7.9	9.6	6.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.1	
Total Delay	42.4	23.1	21.0	30.3	4.5	14.6	8.2	9.6	6.7	
LOS	D	С	С	С	A	В	A	A	Α	
Approach Delay		31.2		20.8			9.1		7.2	
Approach LOS		С		С			A		А	
Intersection Summary										
Cycle Length: 80										
Actuated Cycle Length	n: 80									
Offset: 25 (31%), Refe		o phase	2:NBT	L and 6	SBTL.	Start of	Green			
Natural Cycle: 60					,					
Control Type: Actuated	d-Coordi	nated								
Maximum v/c Ratio: 0										
Intersection Signal De	lay: 14.6				ntersec	tion LO	S: B			
Intersection Capacity I				1	CU Lev	el of Se	ervice C			
Analysis Period (min)										
,										

Splits and Phases: 16:	Main St & Cesar E. Chavez Pl	wy
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42 s	38 s
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42 s	38 s

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU	Horizon Year Alt 1 with Gra	ade Separation and Coordination
16: Main St & Cesar E. Chave	ez Pkwy	Timing Plan: AM Peak

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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	163	223	76	359	207	76	468	163	826
v/c Ratio	0.72	0.42	0.25	0.67	0.36	0.30	0.25	0.36	0.45
Control Delay	42.4	23.1	21.0	30.3	4.5	14.6	7.9	9.6	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.1
Total Delay	42.4	23.1	21.0	30.3	4.5	14.6	8.2	9.6	6.7
Queue Length 50th (ft)	67	80	27	145	0	19	50	25	57
Queue Length 95th (ft)	122	122	52	203	38	59	91	90	77
Internal Link Dist (ft)		588		983			201		305
Turn Bay Length (ft)									
Base Capacity (vph)	332	785	448	792	761	254	1856	449	1834
Starvation Cap Reductn	0	0	0	0	0	0	741	0	175
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.28	0.17	0.45	0.27	0.30	0.42	0.36	0.50
Intersection Summary									

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Synchro 6 Report 3/4/2011

Barrio Logan CPU 16: Main St & Cesar	r E. Ch	avez F		izon Y	ear Alt	t 1 with	Grade	e Sepa			oordin lan: AM	
	۶	-	7	4	+	×	•	1	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ţ,		jk.	ţ.	7	Υ	416		7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.98	1.00		0.99	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1740	1839		1750	1863	1511	1537	2996		1549	2955	
Flt Permitted	0.31	1.00		0.51	1.00	1.00	0.30	1.00		0.47	1.00	
Satd. Flow (perm)	560	1839		941	1863	1511	484	2996		773	2955	
Volume (vph)	150	190	15	70	330	190	70	340	90	150	580	180
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	207	16	76	359	207	76	370	98	163	630	196
RTOR Reduction (vph)	0	4	0	0	0	147	0	22	0	0	27	0
Lane Group Flow (vph)	163	219	0	76	359	60	76	446	0	163	799	0
Confl. Peds. (#/hr)	38		18	18		38	26		5	5		26
Confl. Bikes (#/hr)	00/	001	2	001	001	1	100/	100/	1	100/	100/	2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4		0	8	0	0	2		0	6	_
Permitted Phases	4	00.4		8	00.4	8	2	40.0		6	40.0	
Actuated Green, G (s)	23.1	23.1		23.1	23.1	23.1	48.9	48.9		48.9	48.9	_
Effective Green, g (s)	23.1	23.1		23.1	23.1	23.1	48.9	48.9		48.9	48.9	
Actuated g/C Ratio	0.29 4.0	0.29		0.29	0.29	0.29	0.61 4.0	0.61 4.0		0.61 4.0	0.61 4.0	
Clearance Time (s)								4.0 3.0				
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph) v/s Ratio Prot	162	531		272	538	436	296	1831		472	1806	
v/s Ratio Perm	c0.29	0.12		0.08	0.19	0.04	0.16	0.15		0.21	c0.27	
v/c Ratio	1.01	0.41		0.08	0.67	0.04	0.10	0.24		0.21	0.44	
Uniform Delay, d1	28.4	23.0		22.0	25.1	21.1	7.2	7.1		7.7	8.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.68	0.64	
Incremental Delay, d2	72.3	0.5		0.6	3.1	0.1	2.1	0.3		1.9	0.7	
Delay (s)	100.8	23.5		22.6	28.2	21.2	9.3	7.4		7.1	6.0	
Level of Service	F	23.5 C		22.0 C	20.2 C	21.2 C	3.3 A	A		A	0.0 A	
Approach Delay (s)		56.1			25.3	5		7.7			6.2	
Approach LOS		E			20.0			A			A	
		_										
Intersection Summary		_	10.5					_		_		
HCM Average Control E			18.8	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.62	-			(-)		0.0			_
Actuated Cycle Length (80.0			ost time	· · /		8.0			
Intersection Capacity Ut	ilization		70.2%	10	UU Lev	el of Se	rvice		С			
Analysis Period (min)			15									

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ተቀ	1	36	ħ		*	1		4	ř
Volume (vph)	106	258	18	192	628	33	98	86	115	205	307
Turn Type	Prot		Perm	Prot		Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8		2			6	
Permitted Phases			4			2		2	6		6
Detector Phases	7	4	4	3	8	2	2	2	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vinimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	34.0	34.0	33.0	55.0	33.0	33.0	33.0	33.0	33.0	33.0
Total Split (%)	12.0%	34.0%	34.0%	33.0%	55.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lag	Lag	Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	C-Max	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	8.8	26.7	26.7	33.9	51.8		27.3	27.3		27.3	27.3
Actuated g/C Ratio	0.09	0.27	0.27	0.34	0.52		0.27	0.27		0.27	0.27
/c Ratio	0.73	0.30	0.05	0.47	0.86		0.40	0.19		0.92	0.52
Control Delay	72.5	29.1	10.7	32.8	32.4		40.4	14.4		66.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	72.5	29.1	10.7	32.8	32.4		40.4	14.4		66.5	7.0
LOS	E	С	В	С	С		D	В		E	А
Approach Delay		40.3			32.5		30.1			37.4	
Approach LOS		D			С		С			D	
ntersection Summary											
Cycle Length: 100											
Actuated Cycle Length	: 100										
Offset: 82 (82%), Refe		o phase	3:WBL	Start o	of Gree	ı					
Natural Cycle: 70				,							
Control Type: Actuated	d-Coordi	nated									
Maximum v/c Ratio: 0.											
ntersection Signal Del	ay: 35.0				ntersec	tion LO	S: D				
ntersection Capacity L		n 83.9%		1	CU Lev	el of Se	ervice E				
Analysis Period (min) 1	15										
Splits and Phases: 3	33: Natio	nal Ave	& 28th	St							
4							-4				
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1		33.8				04 5					

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Synchro 6 Report

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Barrio Logan CPU 33: National Ave & 2	28th St	t	Hor	izon Y	ear Alt	1 with	Grad	e Sepa		and Coordination
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR	
Lane Group Flow (vph)	115	280	20	209	817	143	93	348	334	
v/c Ratio	0.73	0.30	0.05	0.47	0.86	0.40	0.19	0.92	0.52	
Control Delay	72.5	29.1	10.7	32.8	32.4	40.4	14.4	66.5	7.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	72.5	29.1	10.7	32.8	32.4	40.4	14.4	66.5	7.0	
Queue Length 50th (ft)	73	71	0	113	441	76	13	210	6	
Queue Length 95th (ft)	#171	105	17	189	#694	135	59	#372	74	
Internal Link Dist (ft)		590			82	454		221		
Turn Bay Length (ft)										
Base Capacity (vph)	157	1062	489	441	958	375	504	400	665	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.73	0.26	0.04	0.47	0.85	0.38	0.18	0.87	0.50	
Intersection Summary										

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ተተ	1	×	Þ			4	ř		*	ţ,
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1299	1817			1754	1509		1744	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.68	1.00		0.76	1.00
Satd. Flow (perm)	1770	3539	1583	1299	1817			1216	1509		1349	1509
Volume (vph)	106	258	18	192	628	123	33	98	86	115	205	307
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	280	20	209	683	134	36	107	93	125	223	334
RTOR Reduction (vph)	0	0	15	0	7	0	0	0	68	0	0	233
Lane Group Flow (vph)	115	280	5	209	810	0	0	143	25	0	348	101
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		6
Actuated Green, G (s)	8.8	26.7	26.7	34.0	51.9			27.3	27.3		27.3	27.3
Effective Green, g (s)	8.8	26.7	26.7	34.0	51.9			27.3	27.3		27.3	27.3
Actuated g/C Ratio	0.09	0.27	0.27	0.34	0.52			0.27	0.27		0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	156	945	423	442	943			332	412		368	412
v/s Ratio Prot	c0.06	0.08		0.16	c0.45							
v/s Ratio Perm			0.00					0.12	0.02		c0.26	0.07
v/c Ratio	0.74	0.30	0.01	0.47	0.86			0.43	0.06		0.95	0.25
Uniform Delay, d1	44.5	29.2	27.0	26.0	20.9			29.9	26.9		35.6	28.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.25	2.29		1.00	1.00
Incremental Delay, d2	16.5	0.2	0.0	3.6	7.9			0.9	0.1		32.8	0.3
Delay (s)	61.0	29.3	27.0	29.6	28.8			38.4	61.7		68.5	28.6
Level of Service	E	С	С	С	С			D	E		E	С
Approach Delay (s)		38.0			28.9			47.5			49.0	
Approach LOS		D			С			D			D	
Intersection Summary												
HCM Average Control D	Delay		38.2	F	ICM Lev	vel of Se	ervice		D			
HCM Volume to Capaci	ty ratio		0.87									
Actuated Cycle Length	(s)		100.0	S	Sum of I	ost time	(s)		12.0			
Intersection Capacity U	tilization		83.9%	10	CU Leve	el of Sei	rvice		E			
Analysis Period (min)			15									

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Barrio	Logan CPU
34: Bos	ston Ave & 28th St

Horizon Year Alt 1 with Grade Separation and Coordination Timing Plan: AM Peak

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	ň	ţ,	35	Ъ	7	41.	μç	ተተኈ	
Volume (vph)	230	180	45	70	90	700	160	860	
Turn Type	Perm		Perm		Prot		Prot		
Protected Phases		4		8	5	2	1	6	
Permitted Phases	4		8						
Detector Phases	4	4	8	8	5	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	35.0	35.0	35.0	35.0	8.0	27.0	8.0	27.0	
Total Split (s)	43.0	43.0	43.0	43.0	16.0	36.0	21.0	41.0	
Total Split (%)	43.0%	43.0%	43.0%	43.0%	16.0%	36.0%	21.0%	41.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag					Lag	Lead	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	C-Max	None	C-Max	
Act Effct Green (s)	28.4	28.4	28.4	28.4	10.1	44.9	14.7	51.5	
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.10	0.45	0.15	0.52	
v/c Ratio	0.87	0.69	0.24	0.39	0.55	0.52	0.67	0.50	
Control Delay	61.8	33.6	27.1	14.7	59.1	18.1	49.1	14.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	9.4	0.6	
Total Delay	61.8	33.6	27.1	14.7	59.1	18.5	58.5	14.6	
LOS	E	С	С	В	E	В	E	В	
Approach Delay		45.4		17.1		22.9		19.9	
Approach LOS		D		В		С		В	
Intersection Summary									
Cycle Length: 100									
Actuated Cycle Length									
Offset: 86 (86%), Refe	erenced t	o phase	2:NBT	and 6:5	SBT, St	art of G	reen		
Natural Cycle: 75									
Control Type: Actuated		nated							
Maximum v/c Ratio: 0									
Intersection Signal De	121/ 25 3				ntorsoc	tion I O	S. C		

Intersection Signal Delay: 25.3 Intersection LOS: C Intersection Capacity Utilization 66.6% ICU Level of Service C Analysis Period (min) 15

Splits and Phases:	34: Boston Ave & 28th St	
† ø2	► _{ø1}	<i>→</i> _{ø4}
36 s	21 s	43 s
↓ ø6	▲ ₀5	₹ _{ø8}
41 s	16 s	43 s

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
ane Group Flow (vph)	250	348	49	206	98	804	174	1272	
v/c Ratio	0.87	0.69	0.24	0.39	0.55	0.52	0.67	0.50	
Control Delay	61.8	33.6	27.1	14.7	59.1	18.1	49.1	14.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	9.4	0.6	
Total Delay	61.8	33.6	27.1	14.7	59.1	18.5	58.5	14.6	
Queue Length 50th (ft)	151	171	24	51	65	168	110	156	
Queue Length 95th (ft)	219	230	48	95	m106	m305	m145	213	
nternal Link Dist (ft)		207		577		298		139	
Turn Bay Length (ft)									
Base Capacity (vph)	392	675	278	688	212	1551	301	2548	
Starvation Cap Reductn	0	0	0	0	0	302	94	801	
Spillback Cap Reductn	0	0	0	0	0	0	0	12	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.64	0.52	0.18	0.30	0.46	0.64	0.84	0.73	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	Ť.		34	1÷		Υç	朴志		×,	141	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.91	
Frt	1.00	0.93		1.00	0.91		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1659		1687	1608		1770	3447		1770	4848	
Flt Permitted	0.51	1.00		0.30	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	910	1659		526	1608		1770	3447		1770	4848	
Volume (vph)	230	180	140	45	70	120	90	700	40	160	860	310
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	196	152	49	76	130	98	761	43	174	935	337
RTOR Reduction (vph)	0	33	0	0	72	0	0	3	0	0	51	(
Lane Group Flow (vph)	250	315	0	49	134	0	98	801	0	174	1221	(
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	28.4	28.4		28.4	28.4		8.8	44.2		15.4	50.8	
Effective Green, g (s)	28.4	28.4		28.4	28.4		8.8	44.2		15.4	50.8	
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.09	0.44		0.15	0.51	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	258	471		149	457		156	1524		273	2463	
v/s Ratio Prot		0.19			0.08		0.06	c0.23		c0.10	0.25	
v/s Ratio Perm	c0.27			0.09								
v/c Ratio	0.97	0.67		0.33	0.29		0.63	0.53		0.64	0.50	
Uniform Delay, d1	35.4	31.6		28.3	28.0		44.0	20.3		39.7	16.2	
Progression Factor	1.00	1.00		1.00	1.00		1.14	0.76		1.00	0.79	
Incremental Delay, d2	46.8	3.6		1.3	0.4		7.3	1.2		3.3	0.5	
Delay (s)	82.2	35.2		29.6	28.3		57.3	16.5		43.0	13.3	
Level of Service	F	D		С	С		E	B		D	B	
Approach Delay (s)		54.9			28.6			21.0			16.9	
Approach LOS		D			С			С			В	
Intersection Summary	alau.		200.0						-			
HCM Average Control D			26.0	F		vel of Se	ervice		С			
HCM Volume to Capacit			0.69	~			(-)		10.0			
Actuated Cycle Length (100.0			ost time			12.0			
Intersection Capacity Uti Analysis Period (min)	inzation		66.6% 15	10	JU Lev	el of Sei	vice		С			

Horizon Year Alt 1 with Grade Separation and Coordination

	٦	-	4	-	1	t	1	1	Ļ
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	ň	仲弘	85	牛 協	7	44	Į.	34	ትኬ
Volume (vph)	190	400	90	490	45	170	120	180	750
Turn Type	Perm		Perm		Prot		Perm	Prot	
Protected Phases		4		8	5	2		1	6
Permitted Phases	4		8				2		
Detector Phases	4	4	8	8	5	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	35.0	35.0	35.0	35.0	8.0	34.0	34.0	8.0	35.0
Total Split (s)	49.0	49.0	49.0	49.0	8.0	35.0	35.0	16.0	43.0
Total Split (%)	49.0%	49.0%	49.0%	49.0%	8.0%	35.0%	35.0%	16.0%	43.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag					Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	46.2	46.2	46.2	46.2	5.0	21.9	21.9	19.9	38.8
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.05	0.22	0.22	0.20	0.39
v/c Ratio	0.97	0.33	0.27	0.46	0.57	0.24	0.32	0.57	0.88
Control Delay	85.9	17.5	19.8	17.9	70.0	34.7	10.0	33.9	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.9	17.5	19.8	17.9	70.0	34.7	10.0	33.9	22.8
LOS	F	В	В	В	E	С	В	С	С
Approach Delay		37.8		18.1		30.7			24.5
Approach LOS		D		В		С			С
ntersection Summary	,								
Cycle Length: 100									
Actuated Cycle Lengt	h: 100								
Offset: 90 (90%), Refe		o phase	2:NBT	and 6:S	BT, Sta	art of Gr	reen		
Natural Cycle: 90									
Control Type: Actuate	d-Coordi	nated							
/laximum v/c Ratio: 0).97								
Intersection Signal De	elay: 26.5			li li	ntersec	tion LOS	S: C		
ntersection Capacity		n 77.9%		10	CU Lev	el of Se	rvice D		
Analysis Period (min)	15								

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Barrio Logan CPU

Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 AM with Improvements Alt 1 without LRT.sy7

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	仲弘		Э¢	† I>		Υç	44	r.	×.	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.89	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1538	3219		1760	3375		1736	3471	1383	1736	3100	
Flt Permitted	0.29	1.00		0.42	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	468	3219		783	3375		1736	3471	1383	1736	3100	
Volume (vph)	190	400	50	90	490	180	45	170	120	180	750	250
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	435	54	98	533	196	49	185	130	196	815	272
RTOR Reduction (vph)	0	9	0	0	37	0	0	0	103	0	33	0
Lane Group Flow (vph)	207	480	0	98	692	0	49	185	27	196	1054	0
Confl. Peds. (#/hr)	10		12	12		10			72			27
Confl. Bikes (#/hr)			2			4			6			1
Heavy Vehicles (%)	17%	11%	2%	2%	2%	2%	4%	4%	4%	4%	4%	31%
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)	46.2	46.2		46.2	46.2		3.8	21.1	21.1	20.7	38.0	
Effective Green, g (s)	46.2	46.2		46.2	46.2		3.8	21.1	21.1	20.7	38.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.04	0.21	0.21	0.21	0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	216	1487		362	1559		66	732	292	359	1178	
v/s Ratio Prot		0.15			0.21		0.03	0.05		c0.11	c0.34	
v/s Ratio Perm	c0.44			0.13					0.02			
v/c Ratio	0.96	0.32		0.27	0.44		0.74	0.25	0.09	0.55	0.89	
Uniform Delay, d1	26.0	17.0		16.5	18.2		47.6	32.9	31.8	35.4	29.1	
Progression Factor	1.00	1.00		1.00	1.00		0.91	1.06	1.32	0.76	0.50	
Incremental Delay, d2	48.9	0.1		0.4	0.2		35.8	0.8	0.6	1.5	9.7	
Delay (s)	74.9	17.1		16.9	18.4		79.2	35.7	42.7	28.3	24.4	
Level of Service	E	В		В	В		E	D	D	С	С	
Approach Delay (s)		34.3			18.2			44.1			25.0	
Approach LOS		С			В			D			С	
Intersection Summary												
HCM Average Control E	Delay		27.5	H	ICM Lev	vel of Se	ervice		С			
HCM Volume to Capaci	ty ratio		0.89									
Actuated Cycle Length ((s)		100.0	S	um of l	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		77.9%	10	CU Leve	el of Ser	vice		D			
	ilization		77.9% 15	10	CU Leve	el of Ser	vice		D			

c Critical Lane Group

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Horizon Year Alt 1 with Grade Separation and Coordination

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SBL

196 1087

0.57

33.9

0.0

345 1253

0

0

0

0.25 0.57 0.87

SBT

0.88

22.8

0.0

22.8

275

298

0

0

0

#355

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NBR

130

0.32

10.0

0.0

0 111

519

0

0

0

10.0 33.9

51 m194

Timing Plan: AM Peak

Kimley-Horn and Associates, Inc.

Barrio Logan CPU

Lane Group

Control Delay

Queue Delay

Total Delay

v/c Ratio

35: Main St & 28th St

Lane Group Flow (vph)

Queue Length 50th (ft) 128

Queue Length 95th (ft) #281 Internal Link Dist (ft)

Turn Bay Length (ft) Base Capacity (vph)

Starvation Cap Reductn

Spillback Cap Reductn

Storage Cap Reductn

Intersection Summary

Reduced v/c Ratio

۶

EBL

207

0.97

85.9

0.0

85.9

€

98 729

0.27

19.8

0.0

38

78 200

359 1597

0

0

0

19.8

WBL WBT

0.46

17.9

0.0

17.9

149

314

0

1

0

-+

EBT

489

0.33

17.5

0.0

17.5

99

137

327

0

0

0

0.97 0.33 0.27 0.46

213 1496

95th percentile volume exceeds capacity, queue may be longer.

m Volume for 95th percentile queue is metered by upstream signal.

0

0

0

Queue shown is maximum after two cycles.

1

NBL

0.57

70.0

0.0

29

#92

86 1076

0

0 66

0

0.57

70.0

49

NBT

185

0.24

34.7

0.0

52

83

279

0

0

0.18

34.7

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Synchro 6 Report

3/4/2011

Barrio Logan CPU 36: Harbor Dr & 28th St Horizon Year Alt 1 with Grade Separation and Coordination Timing Plan: AM Peak .

Synchro 6 Report 3/4/2011

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR	
Lane Configurations	ሻሻ	ሳቀ	74)r	**	7	4	4.54	4	ř	
Volume (vph)	50	670	4	17	942	116	6	375	15	25	
Turn Type	Prot		Perm	Prot		Perm		Split		Perm	
Protected Phases	5	2		1	6		8	4	4		
Permitted Phases			2			6				4	
Detector Phases	5	2	2	1	6	6	8	4	4	4	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	10.0	46.0	46.0	10.0	46.0	46.0	21.0	23.0	23.0	23.0	
Total Split (%)			46.0%								
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5	3.5			
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	
Act Effct Green (s)	5.9	69.2	69.2	5.8	65.2	65.2	5.9	16.6	16.6	16.6	
Actuated g/C Ratio	0.06	0.69	0.69	0.06	0.65	0.65	0.06	0.17	0.17	0.17	
v/c Ratio	0.28	0.31	0.00	0.18		0.13	0.08	0.73	0.05	0.10	
Control Delay	48.8	8.2	6.5	49.1	11.0	2.3	41.2	26.1	16.2	4.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.8	8.2	6.5	49.1	11.0	2.3	41.2	26.1	16.2	4.9	
LOS	D	A	A	D		A	_	С		A	
Approach Delay		10.9			10.6		41.3		24.4		
Approach LOS		В			В		D		С		
Intersection Summary											
Cycle Length: 100											
Actuated Cycle Length											
Offset: 71 (71%), Refe	erenced t	to phase	e 2:EBT	and 6:\	NBT, S	tart of G	Green				
Natural Cycle: 75											
Control Type: Actuated		nated									
Maximum v/c Ratio: 0											
Intersection Signal De					Intersec						
Intersection Capacity I		n 50.1%			ICU Lev	el of Se	ervice A				
Analysis Period (min)	15										

Splits and Phases: 36: Harbor Dr & 28th St

→ o2	🖌 ø1	De 04	1 08
46 s	10 s	23 s	21 s
€	₅ ∕		
46 s	10 s		

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ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR
ane Group Flow (vph)	54	728	4	18	1024	126	9	408	16	27
c Ratio	0.28	0.31	0.00	0.18	0.46	0.13	0.08	0.73	0.05	0.10
ontrol Delay	48.8	8.2	6.5	49.1	11.0	2.3	41.2	26.1	16.2	4.9
ueue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
otal Delay	48.8	8.2	6.5	49.1	11.0	2.3	41.2	26.1	16.2	4.9
ueue Length 50th (ft)	17	64	0	11	155	0	4	116	7	4
ueue Length 95th (ft)	37	186	5	34	285	27	20	m125	m8	m6
ternal Link Dist (ft)		247			310		22		224	
urn Bay Length (ft)	150			75						210
ase Capacity (vph)	198	2358	950	103	2243	977	302	640	347	311
arvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
pillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
torage Cap Reductn	0	0	0	0	0	0	0	0	0	0
educed v/c Ratio	0.27	0.31	0.00	0.17	0.46	0.13	0.03	0.64	0.05	0.09

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Barrio Logan CPU	
36: Harbor Dr & 28th St	

Horizon Year Alt 1 with Grade Separation and Coordination Timing Plan: AM Peak

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	ተቀ	*5	jk.	44	7		de.		44	1	ام
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.93	1.00	1.00	0.95		0.98		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	3303	3406	1412	1719	3438	1457		1730		3367	1827	1520
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (perm)	3303	3406	1412	1719	3438	1457		1730		3367	1827	1520
Volume (vph)	50	670	4	17	942	116	0	6	2	375	15	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	728	4	18	1024	126	0	7	2	408	16	27
RTOR Reduction (vph)	0	0	1	0	0	51	0	2	0	0	0	23
Lane Group Flow (vph)	54	728	3	18	1024	75	0	7	0	408	16	4
Confl. Peds. (#/hr)			69			80						
Confl. Bikes (#/hr)						3			6			7
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	6.4	63.6	63.6	2.4	59.6	59.6		1.4		16.6	16.6	16.6
Effective Green, g (s)	6.4	63.6	63.6	2.4	59.6	59.6		1.4		16.6	16.6	16.6
Actuated g/C Ratio	0.06	0.64	0.64	0.02	0.60	0.60		0.01		0.17	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	211	2166	898	41	2049	868		24		559	303	252
v/s Ratio Prot	c0.02	0.21		0.01	c0.30			c0.00		c0.12	0.01	
v/s Ratio Perm			0.00			0.05						0.00
v/c Ratio	0.26	0.34	0.00	0.44	0.50	0.09		0.29		0.73	0.05	0.02
Uniform Delay, d1	44.5	8.4	6.6	48.1	11.6	8.6		48.8		39.6	35.1	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.53	0.47	0.35
Incremental Delay, d2	0.6	0.4	0.0	7.3	0.9	0.2		6.7		2.9	0.0	0.0
Delay (s)	45.2	8.8	6.6	55.5	12.5	8.8		55.5		24.0	16.7	12.3
Level of Service	D	Α	А	E	В	A		E		С	В	В
Approach Delay (s)		11.3			12.8			55.5			23.0	
Approach LOS		В			В			E			С	
Intersection Summary												
HCM Average Control D			14.4	F	ICM Le	vel of Se	ervice		В			
HCM Volume to Capacit			0.52				()		10.5			
Actuated Cycle Length (100.0			ost time	· · /		16.0			
Intersection Capacity Ut	ilization		50.1%	10	CU Lev	el of Ser	vice		A			_
Analysis Period (min)			15									

c Critical Lane Group

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Lane Group	EBL	EBT	NBL	NBT	NBR	SBT	SWL	
Lane Configurations	ä	Ţ.	¥,	4	77	44%	341	
Volume (vph)	25	235	70	505	55	694	735	
Turn Type	Perm		Prot		custom			
Protected Phases		4	5	2		6	3	
Permitted Phases	4				23			
Detector Phases	4	4	5	2	23	6	3	
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	36.0	36.0	27.0	27.0		36.0	27.0	
Total Split (s)	36.0	36.0	27.0	63.0	94.0	36.0	31.0	
Total Split (%)	27.7%	27.7%	20.8%	48.5%	72.3%	27.7%	23.8%	
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5	
Lead/Lag	Lead	Lead	Lag			Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	Min	Min		Min	C-Max	
Act Effct Green (s)	28.5	28.5	20.1	52.7	93.5	28.6	36.8	
Actuated g/C Ratio	0.22	0.22	0.15	0.41	0.72	0.22	0.28	
v/c Ratio	0.25	0.85	0.29	0.75	0.03	0.81	0.93	
Control Delay	41.8	65.5	48.2	37.1	7.1	54.7	63.1	
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0	
Total Delay	41.8	65.5	48.2	37.3	7.1	54.7	63.1	
LOS	D	E	D	D	А		E	
Approach Delay		60.2		35.9		54.7	63.1	
Approach LOS		E		D		D	E	
ntersection Summary								
Cycle Length: 130								
Actuated Cycle Length	: 130							
Offset: 104 (80%), Ref		to phas	se 3.SW	I Start	of Gree	en		
Natural Cycle: 130	0.011000	to pride		L, Otari				
Control Type: Actuated	d-Coordi	nated						
Maximum v/c Ratio: 0.								
Intersection Signal Del					ntersec	tion LO	S: D	
Intersection Capacity L)				ervice D	
Analysis Period (min)								
, ,, (iiiii)								
Splits and Phases: 3	39: 32nd	St & W	abash S	St				
` ♣				A			6	
l ø2				→ ₀	4		*	≥ø3
63 \$				36 s			31	S
↓ ø6	 1 	ø5						
	27 .	~-		1				

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Barrio Logan C	CPU
39: 32nd St &	Wabash S

Horizon Year Alt 1 with Grade Separation and Coordination Timing Plan: AM Peak

		+	•	1	۲	ţ	4	
Lane Group	EBL	EBT	NBL	NBT	NBR	SBT	SWL	
Lane Group Flow (vph)	98	342	76	549	60	871	881	
v/c Ratio	0.25	0.85	0.29	0.75	0.03	0.81	0.93	
Control Delay	41.8	65.5	48.2	37.1	7.1	54.7	63.1	
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0	
Total Delay	41.8	65.5	48.2	37.3	7.1	54.7	63.1	
Queue Length 50th (ft)	69	269	43	276	8	255	~441	
Queue Length 95th (ft)	111	354	m99	411	m21	299	#610	
Internal Link Dist (ft)		174		613		1629	472	
Turn Bay Length (ft)								
Base Capacity (vph)	447	465	311	821	2078	1196	946	
Starvation Cap Reductn	0	0	0	33	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.22	0.74	0.24	0.70	0.03	0.73	0.93	
Intersection Summary								
 Volume exceeds cap 	acity, d	queue is	theore	tically in	nfinite.			
Queue shown is maxi	imum a	after two	cycles.					
# 95th percentile volun	ne exce	eds ca	pacity, o	queue n	nay be l	onger.		
Queue shown is maxi	imum a	fter two	cycles.					

m Volume for 95th percentile queue is metered by upstream signal.

Barrio Logan CPU 39: 32nd St & Waba	ash St		Hor	izon Y	ear Alt	t 1 with	Grad	e Sepa			oordin Plan: AN	
	٦	_#	→	\mathbf{F}	•	Ť	۲	ŧ	~	¥	~	ŧ٧
Movement	EBL2	EBL	EBT	EBR	NBL	NBT	NBR	SBT	SBR	SWL	SWR \$	SWR2
Lane Configurations		ž	1		ž	4	71.75	种物		34		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		1.00	1.00		1.00	1.00	0.88	0.91		0.97		
Frt		1.00	0.96		1.00	1.00	0.85	0.98		0.99		
Flt Protected		0.95	1.00		0.95	1.00	1.00	1.00		0.96		
Satd. Flow (prot)		1760	1792		1719	1810	2707	4859		3343		
Flt Permitted		0.95	1.00		0.95	1.00	1.00	1.00		0.96		
Satd. Flow (perm)		1760	1792		1719	1810	2707	4859		3343		
Volume (vph)	65	25	235	80	70	505	55	694	108	735	65	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	27	255	87	76	549	60	754	117	799	71	11
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	98	332	0	76	549	60	871	0	881	0	0
Heavy Vehicles (%)	2%	4%	2%	2%	5%	5%	5%	5%	2%	4%	4%	4%
Turn Type	Perm	Perm			Prot		ustom					
Protected Phases			4		5	2		6		3		
Permitted Phases	4	4					23					
Actuated Green, G (s)		28.5	28.5		20.1	52.7	93.5	28.6		36.8		
Effective Green, g (s)		28.5	28.5		20.1	52.7	93.5	28.6		36.8		
Actuated g/C Ratio		0.22	0.22		0.15	0.41	0.72	0.22		0.28		
Clearance Time (s)		4.0	4.0		4.0	4.0		4.0		4.0		
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0		
Lane Grp Cap (vph)		386	393		266	734	1947	1069		946		
v/s Ratio Prot		0.00	c0.19		0.04	c0.30	0.00	c0.18		c0.26		
v/s Ratio Perm		0.06	0.04			0.75	0.02	0.04				
v/c Ratio		0.25	0.84		0.29	0.75	0.03	0.81		0.93		
Uniform Delay, d1		42.0	48.6		48.6	33.0	5.2	48.2		45.4		
Progression Factor		1.00	1.00		0.94	0.93	1.10	1.00		1.00		
Incremental Delay, d2		0.3	15.2		0.6	3.9	0.0	4.9		16.7		
Delay (s)		42.3	63.8		46.4	34.7	5.8	53.1		62.1		
Level of Service		D	E		D	C 33.5	A	D		E		
Approach Delay (s)			59.0 E			33.5 C		53.1 D		62.1 E		
Approach LOS			E			C		D		E		
Intersection Summary												
HCM Average Control E	Delay		52.1	F	ICM Le	vel of Se	ervice		D			
HCM Volume to Capaci			0.84									
Actuated Cycle Length ((s)		130.0	S	Sum of I	ost time	(s)		12.0			
Intersection Capacity Ut	ilizatior	ı	77.1%	10	CU Lev	el of Sei	vice		D			
Analysis Period (min)			15									

Analysis Period (min) c Critical Lane Group

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Synchro 6 Report 3/4/2011

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ane Group ane Configurations /olume (vph) furn Type	EBL	EBT		•	•			T.	1		•	*
/olume (vph)	ň	EDI	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
		ተተ	74	14	**	7	H.	44	٣	7	44	1
urn Type	70	657	140	300	735	390	30	160	30	130	1040	40
	Prot		om+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phases	5	2	3	1	6	6	3	8	8	7	4	4
/linimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
/linimum Split (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	20.0	20.0	20.0
otal Split (s)	16.0	37.0	8.0	34.0	55.0	55.0	8.0	36.0	36.0	23.0	51.0	51.0
otal Split (%)	12.3%				42.3%			27.7%				
'ellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
.ead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
.ead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Ye
Recall Mode	None	C-Min	None	Max	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	10.1	30.6	34.6	30.0	52.6	52.6	4.0	38.2	38.2	15.2	49.4	49.4
Actuated g/C Ratio	0.08	0.24	0.27	0.23	0.40	0.40	0.03	0.29	0.29	0.12	0.38	0.38
/c Ratio	0.57	0.88	0.33	0.84	0.59	0.50	0.62	0.17	0.07	0.70	0.87	0.07
Control Delay	73.8	61.1	13.6	67.3	32.8	5.0	106.7	36.5	12.4	63.0	16.2	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
otal Delay	73.8	61.1	13.6	67.3	32.8	5.0	106.7	36.5	12.4	63.0	16.2	1.2
.OS	E	E	В	E	С	A	F	D	В	E	В	A
Approach Delay		54.5			32.4			42.9			20.7	
Approach LOS		D			С			D			С	
ntersection Summary												
Cycle Length: 130												
Actuated Cycle Length												
Offset: 94 (72%), Refe	renced t	o phase	2:EBT	and 6:V	VBT, St	art of G	reen					
latural Cycle: 90												
Control Type: Actuated		nated										
/laximum v/c Ratio: 0.												
ntersection Signal Del						tion LOS						
ntersection Capacity L		า 80.2%		I	CU Lev	el of Se	rvice D					
Analysis Period (min) 1	5											



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Group Flow (vph)	76	714	152	326	799	424	33	174	33	141	1130	4
v/c Ratio	0.57	0.88	0.33	0.84	0.59	0.50	0.62	0.17	0.07	0.70	0.87	0.0
Control Delay	73.8	61.1	13.6	67.3	32.8	5.0	106.7	36.5	12.4	63.0	16.2	1.
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
Total Delay	73.8	61.1	13.6	67.3	32.8	5.0	106.7	36.5	12.4	63.0	16.2	1.
Queue Length 50th (ft)	62	300	28	264	276	6	28	59	0	100	293	
Queue Length 95th (ft)	115	376	67	#419	347	76	#85	94	28	m115 r	n#369	m
Internal Link Dist (ft)		710			294			151			613	
Turn Bay Length (ft)	230		200	200		200				200		
Base Capacity (vph)	159	873	459	389	1368	858	53	1010	463	251	1306	60
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	1	0	9	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.48	0.82	0.33	0.84	0.58	0.49	0.62	0.17	0.07	0.56	0.87	0.0

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal.

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011
Movement Lane Configurations Ideal Flow (vphpl) Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt	EBL 1900 4.0 1.00 1.00 1.00	EBT 1900 4.0 0.95	EBR 1900 4.0	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Ideal Flow (vphpl) Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes	1900 4.0 1.00 1.00	1900 4.0	1900		4.4					ODL	001	SDR
Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes	4.0 1.00 1.00	4.0		1000	44	7	Υ	44	P ⁴	7	44	ř
Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes	1.00 1.00		40	1900	1900	1900	1900	1900	1900	1900	1900	1900
Frpb, ped/bikes Flpb, ped/bikes	1.00	0.95	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Flpb, ped/bikes			1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
	1 00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Ert	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1518	1687	3374	1509	1719	3438	1501	1719	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1518	1687	3374	1509	1719	3438	1501	1719	3438	1538
Volume (vph)	70	657	140	300	735	390	30	160	30	130	1040	40
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	714	152	326	799	424	33	174	33	141	1130	43
RTOR Reduction (vph)	0	0	54	0	0	248	0	0	23	0	0	21
Lane Group Flow (vph)	76	714	98	326	799	176	33	174	10	141	1130	22
Confl. Bikes (#/hr)			3						16			
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	p	m+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.8	30.6	34.6	30.0	51.8	51.8	4.0	38.2	38.2	15.2	49.4	49.4
Effective Green, g (s)	8.8	30.6	34.6	30.0	51.8	51.8	4.0	38.2	38.2	15.2	49.4	49.4
Actuated g/C Ratio	0.07	0.24	0.27	0.23	0.40	0.40	0.03	0.29	0.29	0.12	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	116	809	404	389	1344	601	53	1010	441	201	1306	584
v/s Ratio Prot	0.04	c0.21	0.01	c0.19	0.24		c0.02	0.05		0.08	c0.33	
v/s Ratio Perm			0.06			0.12			0.01			0.01
v/c Ratio	0.66	0.88	0.24	0.84	0.59	0.29	0.62	0.17	0.02	0.70	0.87	0.04
Uniform Delay, d1	59.1	48.0	37.4	47.7	30.8	26.6	62.3	34.1	32.6	55.2	37.2	25.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.30	0.10
Incremental Delay, d2	12.5	13.3	0.3	19.0	1.9	1.2	20.6	0.1	0.0	5.0	3.0	0.0
Delay (s)	71.7	61.3	37.7	66.7	32.8	27.8	82.8	34.2	32.6	59.5	14.2	2.4
Level of Service	E	E	D	E	С	С	F	С	С	E	В	A
Approach Delay (s)		58.3			38.6			40.7			18.7	
Approach LOS		E			D			D			В	
Intersection Summary												
HCM Average Control D	elay		36.8	H	ICM Lev	vel of S	ervice		D			
HCM Volume to Capacit	y ratio		0.85									
Actuated Cycle Length (130.0	S	um of l	ost time	: (s)		16.0			
Intersection Capacity Uti		1	80.2%			el of Se			D			
Analysis Period (min)			15									
c Critical Lane Group												

Synchro 6 Report

3/4/2011

Horizon Year Alt 1 with Grade Separation and Coordination

Timing Plan: AM Peak

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU

40: Harbor Dr & 32nd St

42: I-5 SB Off-ran					Timing Plan: AM Pea
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Lane Group	EBR	NBT	SBT	ø2	
Lane Configurations	7	ሳቀ	***		
Volume (vph)	915	1050	415		
Turn Type	custom				
Protected Phases		24	6	2	
Permitted Phases	4				
Detector Phases	4	24	6		
Minimum Initial (s)	4.0		4.0	4.0	
Minimum Split (s)	20.0		20.0	20.0	
Total Split (s)		100.0		21.0	
Total Split (%)	79.0%1	00.0%	21.0%	21%	
Yellow Time (s)	3.5		3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None		C-Max	C-Max	
Act Effct Green (s)	73.2	100.0	18.8		
Actuated g/C Ratio	0.73	1.00			
v/c Ratio	0.84	0.32			
Control Delay	16.7	0.2			
Queue Delay	9.9	0.0			
Total Delay	26.6	0.2			
LOS	С	A	С		
Approach Delay		0.2			
Approach LOS		A	С		
Intersection Summar	y				
Cycle Length: 100					
Actuated Cycle Lengt	th: 100				
Offset: 4 (4%), Refer	enced to p	hase 2	:NBT an	d 6:SB	T, Start of Green
Natural Cycle: 65					
Control Type: Actuate	ed-Coordir	nated			
Maximum v/c Ratio:	0.84				
Intersection Signal De	elay: 14.7				Intersection LOS: B
Intersection Capacity	Utilization	171.3%)		CU Level of Service C

Splits and Phases: 42: I-5 SB Off-ramp & 28th St

1 ø2	a4
21 s	79 s
↓ ø6	
21 s	

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Barrio Logan CPU	
42: I-5 SB Off-ramp & 28th St	

Horizon Year Alt 1 with Grade Separation and Coordination Timing Plan: AM Peak

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Lane Group	EBR	NBT	SBT
Lane Group Flow (vph)	995	1141	451
v/c Ratio	0.84	0.32	0.47
Control Delay	16.7	0.2	25.1
Queue Delay	9.9	0.0	0.1
Total Delay	26.6	0.2	25.2
Queue Length 50th (ft)	330	0	100
Queue Length 95th (ft)	556	m0	m106
Internal Link Dist (ft)		139	454
Turn Bay Length (ft)			
Base Capacity (vph)	1216	3539	956
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	203	0	63
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.98	0.32	0.51
Intersection Summary			
m Volume for 95th per	centile	queue	is meter

Barrio Logan CPU 42: I-5 SB Off-ramp	& 28th	ı St	Hor	izon Y	ear Alt	t 1 with	Grade	e Sepa			oordin Plan: AN	
	۶	-	\mathbf{r}	4	+	•	1	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			1					44			444	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0					4.0			4.0	
Lane Util. Factor			1.00					0.95			0.91	
Frt			0.86					1.00			1.00	
Flt Protected			1.00					1.00			1.00	
Satd. Flow (prot)			1611					3539			5085	
Flt Permitted			1.00					1.00			1.00	
Satd. Flow (perm)			1611					3539			5085	
Volume (vph)	0	0	915	0	0	0	0	1050	0	0	415	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	995	0	0	0	0	1141	0	0	451	0
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	987	0	0	0	0	1141	0	0	451	0
Turn Type		C	ustom									
Protected Phases		-						24			6	
Permitted Phases			4								-	
Actuated Green, G (s)			73.2					100.0			18.8	
Effective Green, g (s)			73.2					100.0			18.8	
Actuated g/C Ratio			0.73					1.00			0.19	
Clearance Time (s)			4.0								4.0	
Vehicle Extension (s)			3.0								3.0	
Lane Grp Cap (vph)			1179					3539			956	
v/s Ratio Prot			1110					0.32			c0.09	
v/s Ratio Perm			c0.61					0.02			00.00	
v/c Ratio			0.84					0.32			0.47	
Uniform Delay, d1			9.3					0.0			36.2	
Progression Factor			1.00					1.00			0.64	
Incremental Delay, d2			5.3					0.0			1.2	
Delay (s)			14.6					0.0			24.5	
Level of Service			B					A			C	
Approach Delay (s)		14.6			0.0			0.0			24.5	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM Average Control D	HCM Average Control Delay		9.9	F	ICM Le	vel of Se	ervice		Α			
HCM Volume to Capacit	HCM Volume to Capacity ratio		0.76									
Actuated Cycle Length (s)		100.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		71.3%	10	CU Lev	el of Ser	vice		С			
Analysis Period (min)			15									
c Critical Lane Group												

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Synchro 6 Report 3/4/2011

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	7	Ŷ	1	76	t	7	H	作品	26	41 >	
Volume (vph)	300	400	290	110	270	275	120	1000	120	550	
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		
Protected Phases		4			8			2		6	
Permitted Phases	4		4	8		8	2		6		
Detector Phases	4	4	4	8	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	
Total Split (%)	42.5%	42.5%	42.5%					57.5%		57.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0	42.0	42.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.52	0.52	0.52	0.52	
v/c Ratio	0.99	0.62	0.42	0.56	0.42	0.47	0.76	0.71	1.07	0.62	
Control Delay	68.4	21.5	5.8	32.2	21.1	17.5	41.5	12.8	106.2	3.8	
Queue Delay	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.2	
Total Delay	71.5	21.5	5.8	32.2	21.1	17.5	41.5	13.2	106.2	4.9	
LOS	E	С	A	С	С	В	D	В	F	А	
Approach Delay		32.0			21.5			16.0		16.1	
Approach LOS		С			С			В		В	
Intersection Summary											
Cycle Length: 80											
Actuated Cycle Length	: 80										
Offset: 78 (98%), Refe	renced t	o phase	2:NBT	L and 6:	SBTL,	Start of	Green				
Natural Cycle: 80											
Control Type: Actuated		nated									
Maximum v/c Ratio: 1.											
Intersection Signal Del				1	ntersec	tion LO	S: C				
Intersection Capacity L		า 81.6%		I	CU Lev	el of Se	ervice D				
Analysis Period (min) [·]	15										
					-						
Splits and Phases: 2	14: Natio	nal Ave	& Cesa	ar E. Ch	avez Pl	(wy					

	<i>↓</i> ø4
46 s	34 s
↓ _{ø6}	● Ø8
46 s	34 s

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Barrio Logan CPU Horizon Year Alt 1 with Grade Separation and Coordination 14: National Ave & Cesar E. Chavez Pkwy Timing Plan: PM Per											
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	326	435	315	120	293	299	130	1196	130	1044	
v/c Ratio	0.99	0.62	0.42	0.56	0.42	0.47	0.76	0.71	1.07	0.62	
Control Delay	68.4	21.5	5.8	32.2	21.1	17.5	41.5	12.8	106.2	3.8	

Control Delay	00.4	21.0	0.0	JZ.Z	Z I. I	17.5	41.0	12.0	100.2	0.0	
Queue Delay	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.2	
Total Delay	71.5	21.5	5.8	32.2	21.1	17.5	41.5	13.2	106.2	4.9	
Queue Length 50th (ft)	146	113	11	45	104	81	29	137	~76	21	
Queue Length 95th (ft) m	n#321	230	m55	#111	181	162 n	n#148	163 i	m#115	m45	
Internal Link Dist (ft)		608			780			301		299	
Turn Bay Length (ft)											
Base Capacity (vph)	328	699	748	215	699	637	170	1678	121	1672	
Starvation Cap Reductn	0	0	0	0	0	0	0	119	0	375	
Spillback Cap Reductn	4	0	0	0	0	7	0	6	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.01	0.62	0.42	0.56	0.42	0.47	0.76	0.77	1.07	0.80	
Intersection Summany											

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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Synchro 6 Report

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	4	75	76	*	7	H.	41.		7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3179		1530	2863	
Flt Permitted	0.47	1.00	1.00	0.31	1.00	1.00	0.19	1.00		0.14	1.00	
Satd. Flow (perm)	875	1863	1583	572	1863	1583	325	3179		231	2863	
Volume (vph)	300	400	290	110	270	275	120	1000	100	120	550	410
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	435	315	120	293	299	130	1087	109	130	598	446
RTOR Reduction (vph)	0	0	154	0	0	43	0	10	0	0	169	0
Lane Group Flow (vph)	326	435	161	120	293	256	130	1187	0	130	875	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0		42.0	42.0	
Effective Green, g (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0		42.0	42.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.52	0.52		0.52	0.52	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	328	699	594	215	699	594	171	1669		121	1503	
v/s Ratio Prot		0.23			0.16			0.37			0.31	
v/s Ratio Perm	c0.37		0.10	0.21		0.16	0.40			c0.56		
v/c Ratio	0.99	0.62	0.27	0.56	0.42	0.43	0.76	0.71		1.07	0.58	
Uniform Delay, d1	24.9	20.4	17.4	19.8	18.5	18.6	15.0	14.4		19.0	13.0	
Progression Factor	0.86	0.86	0.92	1.02	1.02	1.02	0.68	0.71		0.56	0.31	
Incremental Delay, d2	42.3	1.4	0.2	3.1	0.4	0.5	25.3	2.4		85.0	1.0	
Delay (s)	63.7	19.0	16.2	23.3	19.2	19.5	35.5	12.7		95.6	5.1	
Level of Service	E	В	В	С	В	В	D	В		F	А	
Approach Delay (s)		31.7			20.0			15.0			15.1	
Approach LOS		С			С			В			В	
Intersection Summary												
HCM Average Control D	elay		20.1	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit	y ratio		1.04									
Actuated Cycle Length (s	s)		80.0	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Uti	lization		81.6%	10	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									

С	Critical	Lane	Group	
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Barrio Logan CPU	Horizon Year Alt 1	with Grade Separation and Coordination
15: Newton Ave & Cesar E.	Chavez Pkwy	Timing Plan: PM Peak

	٦	+	4	Ļ	•	1	1	Ļ
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	7	Ţ,	٣	1.	7	41.	H	作品
Volume (vph)	135	130	90	70	40	795	165	890
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0
Total Split (%)					61.3%			
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None		C-Min			
Act Effct Green (s)	15.6	15.6	15.6	15.6	56.4	56.4	56.4	56.4
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.70	0.70	0.70	0.70
v/c Ratio	0.72	0.58	0.49	0.49	0.17	0.41	0.61	0.46
Control Delay	48.7	29.3	35.6	15.9		6.2	18.6	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3
Total Delay	48.7	29.3	35.6	15.9	7.4	6.3	18.6	6.3
LOS	D	С	D	В	A	A	В	A
Approach Delay		37.1		22.3		6.4		8.1
Approach LOS		D		С		A		A
Intersection Summary								
Cycle Length: 80								
Actuated Cycle Length:								
Offset: 10 (13%), Refer	renced t	o phase	2:NBT	L and 6	:SBTL,	Start of	Green	
Natural Cycle: 75								
Control Type: Actuated		nated						
Maximum v/c Ratio: 0.	. –							
Intersection Signal Dela					ntersec			
Intersection Capacity U		n 64.9%			CU Lev	el of Se	ervice C	
Analysis Period (min) 1	5							
Calife and Dhases 4								

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy

↑ _{ø2}	<u>⊸</u> ø4
49 s	31 s
↓ > ø6	* ø8
49 s	31 s

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Synchro 6 Report

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Barrio Logan CPU 15: Newton Ave & Co	esar E	. Cha			ear Alt	1 with	Grad	e Sepa	aration and Coordination Timing Plan: PM Peak
	≯	-	4	+	•	1	*	ŧ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	147	217	98	206	43	929	179	1027	
v/c Ratio	0.72	0.58	0.49	0.49	0.17	0.41	0.61	0.46	
Control Delay	48.7	29.3	35.6	15.9	7.4	6.2	18.6	6.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	
Total Delay	48.7	29.3	35.6	15.9	7.4	6.3	18.6	6.3	
Queue Length 50th (ft)	69	82	44	39	7	79	37	98	
Queue Length 95th (ft)	118	132	81	87	m16	124 r	n#173	166	
Internal Link Dist (ft)		598		178		305		301	
Turn Bay Length (ft)									
Base Capacity (vph)	353	620	344	646	253	2255	294	2256	
Starvation Cap Reductn	0	0	0	0	0	446	0	554	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.42	0.35	0.28	0.32	0.17	0.51	0.61	0.60	
Intersection Summary									
# 95th percentile volun	ne exce	eds ca	pacity, o	queue m	ay be l	onger.			
Queue shown is maxi	imum a	fter two	cycles						
m Volume for 95th per	centile	queue i	s meter	ed by u	pstream	i signal.			

Barrio Logan CPU 15: Newton Ave & C	esar E	. Cha								and C Timing P		
	≯	+	*	4	Ļ	×	•	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	Ţ.		jk.	1×		H.	4 1>		7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.91		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1765		1770	1686		1612	3189		1612	3195	
Flt Permitted	0.45	1.00		0.43	1.00		0.25	1.00		0.28	1.00	
Satd. Flow (perm)	847	1765		801	1686		422	3189		477	3195	
Volume (vph)	135	130	70	90	70	120	40	795	60	165	890	55
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	141	76	98	76	130	43	864	65	179	967	60
RTOR Reduction (vph)	0	30	0	0	93	0	0	5	0	0	4	C
Lane Group Flow (vph)	147	187	0	98	113	0	43	924	0	179	1023	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.6	15.6		15.6	15.6		56.4	56.4		56.4	56.4	
Effective Green, q (s)	15.6	15.6		15.6	15.6		56.4	56.4		56.4	56.4	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.70	0.70		0.70	0.70	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	165	344		156	329		298	2248		336	2252	
v/s Ratio Prot		0.11			0.07			0.29			0.32	
v/s Ratio Perm	c0.17			0.12			0.10			c0.38		
v/c Ratio	0.89	0.54		0.63	0.34		0.14	0.41		0.53	0.45	
Uniform Delay, d1	31.4	29.0		29.5	27.8		3.9	4.9		5.6	5.1	
Progression Factor	1.00	1.00		1.00	1.00		0.99	0.99		0.89	0.90	
Incremental Delay, d2	40.3	1.8		7.7	0.6		0.9	0.5		5.3	0.6	
Delay (s)	71.7	30.8		37.2	28.4		4.7	5.4		10.3	5.2	
Level of Service	E	С		D	С		A	A		В	A	
Approach Delay (s)		47.3			31.2			5.3			5.9	
Approach LOS		D			С			А			А	
Intersection Summary												
HCM Average Control E	Delay		13.7	H	ICM Lev	vel of S	ervice		В			
HCM Volume to Capaci			0.61									
Actuated Cycle Length ((s)		80.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut			64.9%			el of Sei			С			
Analysis Period (min)			15									
Critical Lane Group												

c Critical Lane Group

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Barrio Logan CPU	Hori	zon Ye	ar Alt	1 with	h Grade	Sepa	aratio	on and Coordina	tion
16: Main St & Cesar E. Chavez F	Pkwy					-		Timing Plan: PM F	Peak
		ł				1	1		

Lane Group EBL EBT WBL WBT WBR NBL NBT SBL SB
Lane Configurations 🎁 🏠 🦌 🎁 🛉
Volume (vph) 120 290 70 230 270 70 640 250 54
Turn Type Perm Perm Perm Perm
Protected Phases 4 8 2
Permitted Phases 4 8 8 2 6
Detector Phases 4 4 8 8 8 2 2 6
Minimum Initial (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.
Minimum Split (s) 31.0 31.0 31.0 31.0 31.0 27.0 27.0 27.0 27.
Total Split (s) 36.0 36.0 36.0 36.0 36.0 44.0 44.0 44.0 44.
Total Split (%) 45.0% 45.0% 45.0% 45.0% 45.0% 55.0% 55.0% 55.0%
Yellow Time (s) 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5
All-Red Time (s) 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5
Lead/Lag
Lead-Lag Optimize?
Recall Mode None None None None C-Min C-Min C-Min C-Min
Act Effct Green (s) 20.1 20.1 20.1 20.1 20.1 51.9 51.9 51.9 51.
Actuated g/C Ratio 0.25 0.25 0.25 0.25 0.25 0.65 0.65 0.65 0.6
v/c Ratio 0.53 0.74 0.38 0.54 0.58 0.29 0.46 1.08 0.4
Control Delay 32.3 35.9 28.4 29.0 15.6 12.2 8.4 96.4 5.
Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 1.2 0.0 0.
Total Delay 32.3 35.9 28.4 29.0 15.6 12.2 9.6 96.4 5.
LOS C D C C B B A F
Approach Delay 34.9 22.6 9.8 26.
Approach LOS C C A
Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 5 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 22.1 Intersection LOS: C
Intersection Capacity Utilization 74.9% ICU Level of Service D

≤1 ₀2	<u>→</u> ₀4
44 s	36 s
↓ ∞6	◆
44 s	36 s

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Barrio Logan CPU	Horizon Year Alt 1 with Grade	Separation and Coordination
16: Main St & Cesar E. Chavez	Pkwy	Timing Plan: PM Peak

	۶	-	4	+	×	1	Ť	1	ŧ	
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	130	342	76	250	293	76	892	272	870	
v/c Ratio	0.53	0.74	0.38	0.54	0.58	0.29	0.46	1.08	0.45	
Control Delay	32.3	35.9	28.4	29.0	15.6	12.2	8.4	96.4	5.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.1	
Total Delay	32.3	35.9	28.4	29.0	15.6	12.2	9.6	96.4	5.1	
Queue Length 50th (ft)	58	159	32	111	57	13	86	~144	12	
Queue Length 95th (ft)	98	216	63	157	116	51	172	#319	90	
Internal Link Dist (ft)		588		279			201		305	
Turn Bay Length (ft)										
Base Capacity (vph)	393	738	316	745	709	261	1954	251	1943	
Starvation Cap Reductn	0	0	0	0	0	0	786	0	207	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.33	0.46	0.24	0.34	0.41	0.29	0.76	1.08	0.50	
Intersection Summary										
 Volume exceeds cap Output about is maximum is maximum is 					nfinite.					

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1 without LRT.sy7 Synch

Kimley-Horn and Associates, Inc.

Synchro 6 Report

3/4/2011

Barrio Logan CPU 16: Main St & Cesar	E. Ch	avez F		izon Y	ear An		Grade	e Sepa		iming P		
	۶	-	7	4	+	×	•	1	۲	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	ţ,)r	÷.	7	Υç	† Ъ		7	41>	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00	1.00	0.99	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1836		1751	1863	1535	1545	2974		1542	2915	
Flt Permitted	0.43	1.00		0.28	1.00	1.00	0.29	1.00		0.28	1.00	
Satd. Flow (perm)	800	1836		512	1863	1535	473	2974		459	2915	
Volume (vph)	120	290	25	70	230	270	70	640	180	250	540	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	315	27	76	250	293	76	696	196	272	587	283
RTOR Reduction (vph)	0	4	0	0	0	118	0	23	0	0	51	0
Lane Group Flow (vph)	130	338	0	76	250	175	76	869	0	272	819	0
Confl. Peds. (#/hr)	19		24	24		19	16		20	20		16
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	20.1	20.1		20.1	20.1	20.1	51.9	51.9		51.9	51.9	
Effective Green, g (s)	20.1	20.1		20.1	20.1	20.1	51.9	51.9		51.9	51.9	
Actuated g/C Ratio	0.25	0.25		0.25	0.25	0.25	0.65	0.65		0.65	0.65	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	201	461		129	468	386	307	1929		298	1891	
v/s Ratio Prot		c0.18										
	0.40			0.45	0.13	0.44	0.40	0.29		0.50	0.28	
v/s Ratio Perm	0.16			0.15		0.11	0.16			c0.59		
v/c Ratio	0.65	0.73		0.59	0.53	0.45	0.25	0.45		0.91	0.43	
v/c Ratio Uniform Delay, d1	0.65 26.8	27.5		0.59 26.3	0.53 25.9	0.45 25.3	0.25 5.9	0.45 7.0		0.91 12.1	0.43 6.9	
v/c Ratio Uniform Delay, d1 Progression Factor	0.65 26.8 1.00	27.5 1.00		0.59 26.3 1.00	0.53 25.9 1.00	0.45 25.3 1.00	0.25 5.9 1.00	0.45 7.0 1.00		0.91 12.1 0.66	0.43 6.9 0.64	
v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2	0.65 26.8 1.00 7.0	27.5 1.00 5.9		0.59 26.3 1.00 6.7	0.53 25.9 1.00 1.2	0.45 25.3 1.00 0.8	0.25 5.9 1.00 1.9	0.45 7.0 1.00 0.8		0.91 12.1 0.66 31.5	0.43 6.9 0.64 0.7	
v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s)	0.65 26.8 1.00 7.0 33.8	27.5 1.00 5.9 33.4		0.59 26.3 1.00 6.7 33.0	0.53 25.9 1.00 1.2 27.1	0.45 25.3 1.00 0.8 26.1	0.25 5.9 1.00 1.9 7.8	0.45 7.0 1.00 0.8 7.7		0.91 12.1 0.66 31.5 39.5	0.43 6.9 0.64 0.7 5.1	
v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service	0.65 26.8 1.00 7.0	27.5 1.00 5.9 33.4 C		0.59 26.3 1.00 6.7	0.53 25.9 1.00 1.2 27.1 C	0.45 25.3 1.00 0.8	0.25 5.9 1.00 1.9	0.45 7.0 1.00 0.8 7.7 A		0.91 12.1 0.66 31.5	0.43 6.9 0.64 0.7 5.1 A	
v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s)	0.65 26.8 1.00 7.0 33.8	27.5 1.00 5.9 33.4 C 33.5		0.59 26.3 1.00 6.7 33.0	0.53 25.9 1.00 1.2 27.1 C 27.4	0.45 25.3 1.00 0.8 26.1	0.25 5.9 1.00 1.9 7.8	0.45 7.0 1.00 0.8 7.7 A 7.7		0.91 12.1 0.66 31.5 39.5	0.43 6.9 0.64 0.7 5.1 A 13.3	
v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service	0.65 26.8 1.00 7.0 33.8	27.5 1.00 5.9 33.4 C		0.59 26.3 1.00 6.7 33.0	0.53 25.9 1.00 1.2 27.1 C	0.45 25.3 1.00 0.8 26.1	0.25 5.9 1.00 1.9 7.8	0.45 7.0 1.00 0.8 7.7 A		0.91 12.1 0.66 31.5 39.5	0.43 6.9 0.64 0.7 5.1 A	
v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s)	0.65 26.8 1.00 7.0 33.8	27.5 1.00 5.9 33.4 C 33.5		0.59 26.3 1.00 6.7 33.0	0.53 25.9 1.00 1.2 27.1 C 27.4	0.45 25.3 1.00 0.8 26.1	0.25 5.9 1.00 1.9 7.8	0.45 7.0 1.00 0.8 7.7 A 7.7		0.91 12.1 0.66 31.5 39.5	0.43 6.9 0.64 0.7 5.1 A 13.3	
v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s) Approach LOS	0.65 26.8 1.00 7.0 33.8 C	27.5 1.00 5.9 33.4 C 33.5	17.3	0.59 26.3 1.00 6.7 33.0 C	0.53 25.9 1.00 1.2 27.1 C 27.4 C	0.45 25.3 1.00 0.8 26.1	0.25 5.9 1.00 1.9 7.8 A	0.45 7.0 1.00 0.8 7.7 A 7.7	В	0.91 12.1 0.66 31.5 39.5	0.43 6.9 0.64 0.7 5.1 A 13.3	
v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s) Approach LOS Intersection Summary	0.65 26.8 1.00 7.0 33.8 C	27.5 1.00 5.9 33.4 C 33.5	17.3 0.86	0.59 26.3 1.00 6.7 33.0 C	0.53 25.9 1.00 1.2 27.1 C 27.4 C	0.45 25.3 1.00 0.8 26.1 C	0.25 5.9 1.00 1.9 7.8 A	0.45 7.0 1.00 0.8 7.7 A 7.7	В	0.91 12.1 0.66 31.5 39.5	0.43 6.9 0.64 0.7 5.1 A 13.3	
v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s) Approach LOS Intersection Summary HCM Average Control D	0.65 26.8 1.00 7.0 33.8 C	27.5 1.00 5.9 33.4 C 33.5		0.59 26.3 1.00 6.7 33.0 C	0.53 25.9 1.00 1.2 27.1 C 27.4 C	0.45 25.3 1.00 0.8 26.1 C	0.25 5.9 1.00 1.9 7.8 A	0.45 7.0 1.00 0.8 7.7 A 7.7	B 8.0	0.91 12.1 0.66 31.5 39.5	0.43 6.9 0.64 0.7 5.1 A 13.3	
v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service Approach Delay (s) Approach LOS Intersection Summary HCM Average Control ID HCM Volume to Capaci	0.65 26.8 1.00 7.0 33.8 C Delay ty ratio s)	27.5 1.00 5.9 33.4 C 33.5 C	0.86	0.59 26.3 1.00 6.7 33.0 C	0.53 25.9 1.00 1.2 27.1 C 27.4 C ICM Le	0.45 25.3 1.00 0.8 26.1 C	0.25 5.9 1.00 1.9 7.8 A ervice e(s)	0.45 7.0 1.00 0.8 7.7 A 7.7		0.91 12.1 0.66 31.5 39.5	0.43 6.9 0.64 0.7 5.1 A 13.3	

c Critical Lane Group

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 33: National Ave &	28th S	t	Hor	izon Y	ear Al	t 1 with	n Grad	le Sep			Coordin Plan: PM	
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	7	<u> </u>	7	ji,	Þ		4	7		ধ	۴	
Volume (vph)	94	612	85	463	427	18	98	168	199	210	102	
Turn Type	Prot		Perm	Prot		Perm		Perm	Perm		Perm	
Protected Phases	7	4		3	8		2			6		
Permitted Phases			4			2		2	6		6	
Detector Phases	7	4	4	3	8	2	2	2	6	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	35.0	35.0	8.0	35.0	27.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	12.0	30.0	30.0	36.0	54.0	34.0	34.0	34.0	34.0	34.0	34.0	
Total Split (%)		30.0%		36.0%						34.0%		
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lag	Lag	Lag	Lead	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Recall Mode	None	None		C-Max	None	Min	Min	Min	Min	Min	Min	
Act Effct Green (s)	12.4	23.2	23.2	32.0	42.9		32.8	32.8		32.8	32.8	
Actuated g/C Ratio	0.12	0.23	0.23	0.32	0.43		0.33	0.33		0.33	0.33	
v/c Ratio	0.47	0.81	0.21	0.98	0.93		0.30	0.30		1.02	0.20	
Control Delay	51.2	44.5	7.5	71.4	44.6		37.7	15.3		84.3	6.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.2	44.5	7.5	71.4	44.6		37.7	15.3		84.3	6.0	
LOS	D	D	A	E	D		D	В		F	А	
Approach Delay		41.3			55.6		24.5			68.7		
Approach LOS		D			E		С			E		
Intersection Summary												
Cycle Length: 100												
Actuated Cycle Length												
Offset: 98 (98%), Refe	renced to	o phase	3:WBL	, Start o	of Greer	า						
Natural Cycle: 120												
Control Type: Actuated		nated										
Maximum v/c Ratio: 1.												
Intersection Signal Del						tion LO						
Intersection Capacity L		1 81.3%			CU Lev	el of Se	ervice D					
Analysis Period (min) ?	15											
Splits and Phases: 3	33: Natio	nal Ave	& 28th	St								
A 02		•	3				📌 ø4					
34 s		36 s					30 s					
		-	9 8						▶.	97		
34 s		54 s	0						12 s	91		

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Synchro 6 Report

3/4/2011

33: National Ave & 2	8th St								Т	iming Plan: PM Peak
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR	
Lane Group Flow (vph)	102	665	92	503	725	127	183	444	111	
v/c Ratio	0.47	0.81	0.21	0.98	0.93	0.30	0.30	1.02	0.20	
Control Delay	51.2	44.5	7.5	71.4	44.6	37.7	15.3	84.3	6.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	51.2	44.5	7.5	71.4	44.6	37.7	15.3	84.3	6.0	
Queue Length 50th (ft)	62	208	0	316	397	67	45	~312	0	
Queue Length 95th (ft)	#148	268	38	#529	524	124	96	#517	39	
Internal Link Dist (ft)		590			82	454		221		
Turn Bay Length (ft)										
Base Capacity (vph)	219	920	480	511	901	425	618	435	569	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.47	0.72	0.19	0.98	0.80	0.30	0.30	1.02	0.20	
Intersection Summary										
 Volume exceeds cap 	oacity, o	queue is	theore	tically ir	nfinite.					
Queue shown is maxi	imum a	fter two	cycles							
# 95th perceptile volum		ode ca	and the other		av ha l	onger				

Horizon Year Alt 1 with Grade Separation and Coordination

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Barrio Logan CPU

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	/	-	•	•				T	1	*	÷	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ተቀ	14	74	To			4	P		4	٣
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1597	1762			1762	1509		1734	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.81	1.00		0.76	1.00
Satd. Flow (perm)	1770	3539	1583	1597	1762			1440	1509		1342	1509
Volume (vph)	94	612	85	463	427	240	18	98	168	199	210	102
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	665	92	503	464	261	20	107	183	216	228	111
RTOR Reduction (vph)	0	0	71	0	23	0	0	0	123	0	0	75
Lane Group Flow (vph)	102	665	21	503	702	0	0	127	60	0	444	36
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		6
Actuated Green, G (s)	12.4	23.3	23.3	31.9	42.8			32.8	32.8		32.8	32.8
Effective Green, g (s)	12.4	23.3	23.3	31.9	42.8			32.8	32.8		32.8	32.8
Actuated g/C Ratio	0.12	0.23	0.23	0.32	0.43			0.33	0.33		0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	219	825	369	509	754			472	495		440	495
v/s Ratio Prot	0.06	c0.19		c0.31	c0.40							
v/s Ratio Perm			0.01					0.09	0.04		c0.33	0.02
v/c Ratio	0.47	0.81	0.06	0.99	0.93			0.27	0.12		1.01	0.07
Uniform Delay, d1	40.7	36.2	29.8	33.9	27.2			24.8	23.5		33.6	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.34	3.36		1.00	1.00
Incremental Delay, d2	1.6	5.8	0.1	37.1	18.1			0.3	0.1		45.2	0.1
Delay (s)	42.3	42.0	29.9	71.0	45.3			33.5	79.2		78.8	23.2
Level of Service	D	D	C	E	D			C	E		E	C
Approach Delay (s)	-	40.7		_	55.8			60.5	-		67.7	
Approach LOS		D			E			E			E	
								_			_	
Intersection Summary							<u>.</u>					
HCM Average Control D			54.1	F	ICM Lev	vel of Se	ervice		D			
HCM Volume to Capacit			0.93	_			()		0.0			_
Actuated Cycle Length (100.0			ost time			8.0			
Intersection Capacity Ut	ilization	1	81.3%	10	CU Leve	el of Sei	vice		D			_
Analysis Period (min)			15									

Analysis Period (min) c Critical Lane Group

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Barrio	Logan CPU
34: Bos	ston Ave & 28th St

Horizon Year Alt 1 with Grade Separation and Coordination Timing Plan: PM Peak

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	7	ĥ	35	1.	7	4 1»	ЯÇ	ተተኈ
Volume (vph)	320	100	60	70	50	1050	250	1060
Turn Type	Perm		Perm		Prot		Prot	
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phases	4	4	8	8	5	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	35.0	35.0	35.0	35.0	8.0	27.0	8.0	27.0
Total Split (s)	38.0	38.0	38.0	38.0	12.0	42.0	20.0	50.0
Total Split (%)	38.0%		38.0%			42.0%		50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag					Lead	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	32.9	32.9	32.9	32.9	7.3	39.1	16.0	49.6
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.07	0.39	0.16	0.50
v/c Ratio	0.96	0.48	0.25	0.26	0.42	0.91	0.96	0.58
Control Delay	72.5	20.9	27.0	16.4	57.5	26.4	69.4	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	74.0	1.0
Total Delay	72.5	20.9	27.0	16.4	57.5	26.6	143.4	13.6
LOS	E	С	С	В	E	С	F	В
Approach Delay		49.4		19.6		27.8		34.1
Approach LOS		D		В		С		С
Intersection Summary								
Cycle Length: 100								
Actuated Cycle Length								
Offset: 98 (98%), Refe	renced t	o phase	2:NBT	and 6:8	SBT, St	art of G	reen	
Natural Cycle: 90								

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 33.7	Intersection LOS: C
Intersection Capacity Utilization 85.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 34: B	oston Ave & 28th St		
↑ _{ø2}	▶ ₀1	A @4	
42 s	20 s	38 s	
▲ ø5 ↓ ø6		* ø8	
12 s 50 s		38 s	

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	348	283	65	152	54	1250	272	1445	
v/c Ratio	0.96	0.48	0.25	0.26	0.42	0.91	0.96	0.58	
Control Delay	72.5	20.9	27.0	16.4	57.5	26.4	69.4	12.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	74.0	1.0	
Total Delay	72.5	20.9	27.0	16.4	57.5	26.6	143.4	13.6	
Queue Length 50th (ft)	212	95	30	43	34	250	174	161	
Queue Length 95th (ft)	#389	172	66	92	m58 r	n#503 ı	m#291	175	
Internal Link Dist (ft)		207		577		298		139	
Turn Bay Length (ft)									
Base Capacity (vph)	374	606	268	595	142	1372	283	2491	
Starvation Cap Reductn	0	0	0	0	0	3	53	714	
Spillback Cap Reductn	0	1	0	0	0	7	0	77	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.93	0.47	0.24	0.26	0.38	0.92	1.18	0.81	

Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal.

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Synchro 6 Report 3/4/2011

34: Boston Ave & 28										,	Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	T.		14	To		1	410		7	44T>	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.91	
Frt	1.00	0.91		1.00	0.92		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1612		1687	1643		1770	3493		1770	4931	
Flt Permitted	0.62	1.00		0.43	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1095	1612		771	1643		1770	3493		1770	4931	
Volume (vph)	320	100	160	60	70	70	50	1050	100	250	1060	270
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	109	174	65	76	76	54	1141	109	272	1152	293
RTOR Reduction (vph)	0	58	0	0	37	0	0	7	0	0	42	C
Lane Group Flow (vph)	348	225	0	65	115	0	54	1243	0	272	1403	C
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	32.9	32.9		32.9	32.9		6.2	38.4		16.7	48.9	
Effective Green, g (s)	32.9	32.9		32.9	32.9		6.2	38.4		16.7	48.9	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.06	0.38		0.17	0.49	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	360	530		254	541		110	1341		296	2411	
v/s Ratio Prot		0.14			0.07		0.03	c0.36		c0.15	0.28	
v/s Ratio Perm	c0.32			0.08								
v/c Ratio	0.97	0.42		0.26	0.21		0.49	0.93		0.92	0.58	
Uniform Delay, d1	33.0	26.2		24.6	24.2		45.4	29.5		41.0	18.2	
Progression Factor	1.00	1.00		1.00	1.00		1.11	0.54		0.77	0.67	
Incremental Delay, d2	38.2	0.5		0.5	0.2		3.0	11.0		23.3	0.7	
Delay (s)	71.2	26.7		25.1	24.4		53.2	26.9		55.0	12.9	
Level of Service	E	С		С	С		D	С		D	В	
Approach Delay (s)		51.3			24.6			28.0			19.6	
Approach LOS		D			С			С			В	
Intersection Summary												
HCM Average Control E	Delay		27.9	H	ICM Le	vel of Se	ervice		С			
HCM Volume to Capaci	ty ratio		0.94									
Actuated Cycle Length ((s)		100.0	S	Sum of I	ost time	(s)		12.0			
Intersection Capacity Ut			85.1%	10	CU Lev	el of Sei	vice		E			
Analysis Period (min)			15									
Analysis Period (min) c Critical Lane Group			15									

Horizon Year Alt 1 with Grade Separation and Coordination

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Synchro 6 Report 3/4/2011

Kimley-Horn and Associates, Inc.

Barrio Logan CPU

Barrio Logan CPU 35: Main St & 28th			TIO			L I WILI	i Grau	e Sep		and Coo
	٦	-	1	+	1	Ť	1	1	ţ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Configurations	۲	仲孙	35	410	7	**	r"	34	412	
Volume (vph)	220	730	150	290	65	450	230	360	500	
Furn Type	Perm		Perm		Prot		Perm	Prot		
Protected Phases		4		8	5	2		1	6	
Permitted Phases	4		8				2			
Detector Phases	4	4	8	8	5	2	2	1	6	
Vinimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vinimum Split (s)	35.0	35.0	35.0	35.0	8.0	27.0	27.0	8.0	27.0	
Fotal Split (s)	45.0	45.0	45.0	45.0	9.0	28.0	28.0	27.0	46.0	
Fotal Split (%)			45.0%			28.0%				
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
_ead/Lag					Lead	Lead	Lead	Lag	Lag	
_ead-Lag Optimize?					Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None		C-Min			C-Min	
Act Effct Green (s)	42.4	42.4	42.4	42.4	5.0	21.5	21.5	24.0	40.6	
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.05	0.22	0.22	0.24	0.41	
//c Ratio	0.95	0.56	0.97	0.40	0.82	0.65	0.69		0.96dr	
Control Delay	76.0	23.7	95.4	11.1	100.4	35.8	28.3	55.9	17.9	
Queue Delay	6.2	0.0	0.0	0.0	0.0	0.2	0.0	1.6	0.5	
Fotal Delay	82.2	23.7	95.4	11.1	100.4	36.0	28.3	57.5	18.4	
LOS	F	С	F	В	F	D	С	E	В	
Approach Delay		36.7		28.7		39.3			28.4	
Approach LOS		D		С		D			С	
ntersection Summary										
Cycle Length: 100										
Actuated Cycle Length	n: 100									
Offset: 6 (6%), Refere		hase 2	NBT ar	d 6:SB	T. Start	of Gree	n			
Vatural Cycle: 90					,					
Control Type: Actuate	d-Coordii	nated								
/laximum v/c Ratio: 0										
ntersection Signal De				1	ntersec	tion LO	S: C			
ntersection Capacity		n 87.4%		I	CU Lev	el of Se	rvice E			
Analysis Period (min)										
dr Defacto Right Lar		de with	1 thoug	h lane a	as a rigi	nt lane.				
Ū.					Ũ					
Splits and Phases:	35: Main	St & 28	th St							

Splits and Phases:	35: Main St & 28th St		
↑ ø2	▶ _{ø1}	→ ₀4	
28 s	27 s	45 s	
↑ ø5 ↓ ø6		★ ø8	
9s 46s		45 s	

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	239	836	163	619	71	489	250	391	1141	
v/c Ratio	0.95	0.56	0.97	0.40	0.82	0.65	0.69	0.94	0.96dr	
Control Delay	76.0	23.7	95.4	11.1	100.4	35.8	28.3	55.9	17.9	
Queue Delay	6.2	0.0	0.0	0.0	0.0	0.2	0.0	1.6	0.5	
Total Delay	82.2	23.7	95.4	11.1	100.4	36.0	28.3	57.5	18.4	
Queue Length 50th (ft)	147	210	~103	70	42	150	94	203	49	
Queue Length 95th (ft)	#309	272	#239		m#120	198	m170	#426	#101	
Internal Link Dist (ft)		327		314		290			298	
Turn Bay Length (ft)										
Base Capacity (vph)	252	1492	168	1533	87	833	396	417	1301	
Starvation Cap Reductn		0	0	0	0	0	0	5	24	
Spillback Cap Reductn	8	0	0	36	0	39	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.98	0.56	0.97	0.41	0.82	0.62	0.63	0.95	0.89	
Intersection Summary										
 Volume exceeds cap 	pacity, o	queue is	s theore	tically i	nfinite.					
Queue shown is max										
# 95th percentile volur					nav be l	onaer.				
Queue shown is max						0				
m Valuma for OEth par										

Volume for 95th percentile queue is metered by upstream signal.
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	7	仲弘		36	† Ъ		٩ç	44	r	7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00	0.88	1.00	0.86	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.93		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	3507		1765	3216		1736	3471	1360	1736	2653	
Flt Permitted	0.33	1.00		0.22	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	605	3507		410	3216		1736	3471	1360	1736	2653	
Volume (vph)	220	730	40	150	290	280	65	450	230	360	500	550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	793	43	163	315	304	71	489	250	391	543	598
RTOR Reduction (vph)	0	4	0	0	169	0	0	0	71	0	191	(
Lane Group Flow (vph)	239	832	0	163	450	0	71	489	179	391	950	(
Confl. Peds. (#/hr)	27	002	12	12		27			88		000	200
Confl. Bikes (#/hr)			8			3			00			6
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	4%	4%	4%	4%	4%	11%
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2		-	
Actuated Green, G (s)	42.4	42.4		42.4	42.4		5.0	21.5	21.5	24.1	40.6	
Effective Green, g (s)	42.4	42.4		42.4	42.4		5.0	21.5	21.5	24.1	40.6	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.05	0.22	0.22	0.24	0.41	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	257	1487		174	1364		87	746	292	418	1077	
v/s Ratio Prot	201	0.24			0.14		0.04	c0.14	202	0.23	c0.36	
v/s Ratio Perm	0.39			c0.40					0.13			
v/c Ratio	0.93	0.56		0.94	0.33		0.82	0.66	0.61	0.94	0.96dr	
Uniform Delay, d1	27.4	21.7		27.5	19.3		47.0	35.9	35.5	37.2	27.5	
Progression Factor	1.00	1.00		1.00	1.00		0.90	0.88	0.82	0.66	0.40	
Incremental Delay, d2	37.2	0.5		49.6	0.1		42.1	4.4	9.2	25.8	9.3	
Delay (s)	64.6	22.2		77.1	19.4		84.6	36.2	38.1	50.2	20.2	
Level of Service	E	С		E	В		F	D	D	D	С	
Approach Delay (s)		31.6			31.5			41.0			27.9	
Approach LOS		С			С			D			С	
Intersection Summary												
HCM Average Control D	elay		32.0	H	ICM Lev	vel of Se	ervice		С			
HCM Volume to Capacit			0.91									
Actuated Cycle Length (100.0	S	Sum of I	ost time	(s)		12.0			
Intersection Capacity Uti			87.4%			el of Ser			E			

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Synchro 6 Report

3/4/2011

Barrio Logan CPU 36: Harbor Dr & 28th St

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Horizon Year Alt 1 with Grade Separation and Coordination Timing Plan: PM Peak .

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Synchro 6 Report 3/4/2011

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR	
Lane Configurations	ሻሻ	<u> </u>	7	γí	**	7	4	42.94	4	ř	
Volume (vph)	140	1390	2	14	524	278	134	505	12	13	
Turn Type	Prot		Perm	Prot		pm+ov		Split		Perm	
Protected Phases	5	2		1	6	4	8	4	4		
Permitted Phases			2			6				4	
Detector Phases	5	2	2	1	6	4	8	4	4	4	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	8.0	8.0	8.0	8.0	8.0	
Total Split (s)	13.0	53.0	53.0	8.0	48.0	23.0	16.0	23.0	23.0	23.0	
Total Split (%)		53.0%							23.0%		
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode		C-Max			C-Max	None	None	None	None	None	
Act Effct Green (s)	8.6	54.8	54.8	4.3	45.5	64.0	11.4	18.5	18.5	18.5	
Actuated g/C Ratio	0.09	0.55	0.55	0.04	0.46	0.64	0.11	0.18	0.18	0.18	
v/c Ratio	0.54	0.81	0.00	0.20	0.36	0.30	0.75	0.88	0.04	0.05	
Control Delay	51.0	24.0	9.5	53.0	19.1	3.2	65.7	50.0	29.2	13.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	51.0	24.0	9.5	53.0	19.1	3.2	65.7	50.0	29.2	13.0	
LOS	D	С	A	D	В	A	E	D	С	В	
Approach Delay		26.5			14.2		65.7		48.7		
Approach LOS		С			В		E		D		
Intersection Summary											
Cycle Length: 100											
Actuated Cycle Length	n: 100										
Offset: 94 (94%), Refe	erenced t	o phase	2:EBT	and 6:V	NBT, St	art of G	reen				
Natural Cycle: 90											
Control Type: Actuated		nated									
Maximum v/c Ratio: 0.											
Intersection Signal Del						tion LO					
Intersection Capacity L		n 77.1%)	1	CU Lev	el of Se	rvice D				
Analysis Period (min) '	15										

Splits and Phases: 36: Harbor Dr & 28th St



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	152	1511	2	15	570	302	157	549	13	14
v/c Ratio	0.54	0.81	0.00	0.20	0.36	0.30	0.75	0.88	0.04	0.05
Control Delay	51.0	24.0	9.5	53.0	19.1	3.2	65.7	50.0	29.2	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	24.0	9.5	53.0	19.1	3.2	65.7	50.0	29.2	13.0
Queue Length 50th (ft)	48	367	0	10	124	22	98	166	6	1
Queue Length 95th (ft)	81	#612	4	31	167	52	#192 r	n#205	m12	m5
Internal Link Dist (ft)		247			310		22		214	
Turn Bay Length (ft)	150			75						210
Base Capacity (vph)	297	1868	761	74	1563	1025	219	640	347	302
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.81	0.00	0.20	0.36	0.29	0.72	0.86	0.04	0.05

Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ار لر	<u> </u>	*5	76	**	7		et.		44	4	٣
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.97		1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	3303	3406	1393	1719	3438	1485		1821		3367	1827	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (perm)	3303	3406	1393	1719	3438	1485		1821		3367	1827	1531
Volume (vph)	140	1390	2	14	524	278	10	134	0	505	12	13
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	1511	2	15	570	302	11	146	0	549	13	14
RTOR Reduction (vph)	0	0	1	0	0	69	0	0	0	0	0	11
Lane Group Flow (vph)	152	1511	1	15	570	233	0	157	0	549	13	3
Confl. Peds. (#/hr)			69			80						
Confl. Bikes (#/hr)			2						4			2
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm	Prot		om+ov	Split			Split		Perm
Protected Phases	5	2		1	6	4	. 8	8		. 4	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	8.6	52.5	52.5	1.6	45.5	64.0		11.4		18.5	18.5	18.5
Effective Green, g (s)	8.6	52.5	52.5	1.6	45.5	64.0		11.4		18.5	18.5	18.5
Actuated g/C Ratio	0.09	0.52	0.52	0.02	0.46	0.64		0.11		0.18	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	284	1788	731	28	1564	1010		208		623	338	283
v/s Ratio Prot	c0.05	c0.44		0.01	0.17	0.04		c0.09		c0.16	0.01	
v/s Ratio Perm			0.00			0.11						0.00
v/c Ratio	0.54	0.85	0.00	0.54	0.36	0.23		0.75		0.88	0.04	0.01
Uniform Delay, d1	43.8	20.3	11.3	48.8	17.8	7.6		42.9		39.7	33.4	33.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.90	0.87	0.79
Incremental Delay, d2	1.9	5.1	0.0	18.3	0.7	0.1		14.4		11.8	0.0	0.0
Delay (s)	45.7	25.4	11.3	67.1	18.5	7.7		57.3		47.3	29.2	26.4
Level of Service	D	С	В	E	В	A		E		D	С	С
Approach Delay (s)	_	27.2			15.6			57.3		_	46.4	-
Approach LOS		C			B			E			D	
Intersection Summary					_			_			-	
HCM Average Control E	Jolay		28.9			vel of Se	onvice		С			
HCM Volume to Capaci			0.84				GIVICE		0			
Actuated Cycle Length			100.04	C	um of I	ost time	(s)		16.0			
Intersection Capacity U		,	77.1%			el of Ser			10.0 D			
Analysis Period (min)	inzati01	1	15	IV.	SO Levi		vice		U			
Analysis Period (IIIII)			10									

Horizon Year Alt 1 with Grade Separation and Coordination Timing Plan: PM Peak

c Critical Lane Group

Barrio Logan CPU

36: Harbor Dr & 28th St

K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1 without LRT.sy7

Kimley-Horn and Associates, Inc.

	_#	-	1	t	۲	Ļ	¥	
Lane Group	EBL	EBT	NBL	NBT	NBR	SBT	SWL	
Lane Configurations	2	ţ.	34	4	76	14 %	äM	
Volume (vph)	115	195	140	600		619	140	
Turn Type	Perm		Prot		custom			
Protected Phases		4	5	2		6	3	
Permitted Phases	4				23			
Detector Phases	4	4	5	2	23	6	3	
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	36.0	36.0	20.0	27.0		27.0	27.0	
Total Split (s)	36.0	36.0	20.0	47.0	74.0	27.0	27.0	
Total Split (%)	32.7%	32.7%	18.2%	42.7%	67.3%	24.5%	24.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5	
Lead/Lag	Lead	Lead	Lag			Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	Min	C-Min		C-Min	None	
Act Effct Green (s)	20.2	20.2	15.9	65.5	81.8	45.6	12.3	
Actuated g/C Ratio	0.18	0.18	0.14	0.60	0.74	0.41	0.11	
v/c Ratio	0.78	0.62	0.61	0.60	0.33	0.38	0.61	
Control Delay	58.6	48.5	37.5	8.4		35.8	53.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	58.6	48.5	37.5	8.4	2.3	35.8	53.6	
LOS	E	D	D	A		D	D	
Approach Delay		54.0		8.6		35.8	53.6	
Approach LOS		D		A		D		
••							-	
Intersection Summary								
Cycle Length: 110	1.10							
Actuated Cycle Length								
Offset: 69 (63%), Refe	erenced t	o pnase	2:NBT	and 6:	SBI, Sta	art of Gi	reen	
Natural Cycle: 110								
Control Type: Actuate		nated						
Maximum v/c Ratio: 0							0.0	
Intersection Signal De					Intersec			
Intersection Capacity		100.4%			CU Lev		ervice B	
Analysis Period (min)	15							
Splits and Phases:	39: 32nd	C+ 2 \//	abach (*				
	39. 32Hu	SIAW	abasha	51				
T ø2			- 24	ø4			12	ø3

K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1 without LRT.sy7

Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Barrio	Logan CPU	
39: 32r	nd St & Wabash St	

Horizon Year Alt 1 with Grade Separation and Coordination Timing Plan: PM Peak

	-	-	•	1	۲	ţ	¥	
Lane Group	EBL	EBT	NBL	NBT	NBR	SBT	SWL	
Lane Group Flow (vph)	250	212	152	652	674	759	223	
v/c Ratio	0.78	0.62	0.61	0.60	0.33	0.38	0.61	
Control Delay	58.6	48.5	37.5	8.4	2.3	35.8	53.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	58.6	48.5	37.5	8.4	2.3	35.8	53.6	
Queue Length 50th (ft)	170	140	111	78	25	171	78	
Queue Length 95th (ft)	237	199	m145	m212	m56	m182	113	
Internal Link Dist (ft)		174		613		1629	472	
Turn Bay Length (ft)								
Base Capacity (vph)	510	542	258	1078	2013	2020	682	
Starvation Cap Reductn	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.49	0.39	0.59	0.60	0.33	0.38	0.33	
Intersection Summary								
m Volume for 95th per	centile	queue	is meter	red by u	pstrean	n signal.		

39: 32nd St & Wabash St Timing Plan: PM Peak Image of the state of th	Barrio Logan CPU	ob Ct		Hor	izon Y	ear Alt	1 with	Grade	e Sepa			Coordina	
Lane Configurations N	<u>59. 5210 St & Waba</u>		_#	-	1	1	۲	ţ	~	4	~	•••	Cak
Ideal Flow (vphpl) 1900 <td>Movement</td> <td>EBL2</td> <td>EBL</td> <td>EBT</td> <td>NBL</td> <td>NBT</td> <td>NBR</td> <td>SBT</td> <td>SBR</td> <td>SWL</td> <td>SWR</td> <td>SWR2</td> <td></td>	Movement	EBL2	EBL	EBT	NBL	NBT	NBR	SBT	SBR	SWL	SWR	SWR2	
Total Lost time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Lane Util, Factor 1.00 1.00 1.00 1.00 0.88 0.91 0.97 Fit 1.00 1.00 0.00 0.85 0.98 0.95 Fit Protected 0.95 1.00 0.95 1.00 0.00 0.97 Satd. Flow (prot) 1752 1863 1719 1810 2707 4872 3264 Volume (vph) 115 115 195 140 600 620 619 79 140 55 10 Peak-hour factor, PHF 0.92 <td></td> <td></td> <td>ž</td> <td>To.</td> <td>J.</td> <td>*</td> <td>10</td> <td>447.</td> <td></td> <td>Nº N</td> <td></td> <td></td> <td></td>			ž	To.	J.	*	10	447.		Nº N			
Lane Util. Factor 1.00 1.00 1.00 1.00 0.88 0.91 0.97 Frt 1.00 1.00 1.00 0.85 0.98 0.95 1.00 0.97 Satd. Flow (prot) 1752 1863 1719 1810 2707 4872 3264 Fit Permitted 0.95 1.00 0.95 1.00 1.00 0.97 Satd. Flow (perm) 1752 1863 1719 1810 2707 4872 3264 Volume (vph) 115 115 195 140 600 620 619 79 140 55 10 Peak-hour factor, PHF 0.92 0 </td <td>Ideal Flow (vphpl)</td> <td>1900</td> <td></td>	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Frt 1.00 1.00 1.00 0.05 0.98 0.98 0.95 Fit Protected 0.95 1.00 0.95 1.00 1.00 1.00 0.97 Satd. Flow (prot) 1752 1863 1719 1810 2707 4872 3264 Fit Permitted 0.95 1.00 0.95 1.00 1.00 0.97 3264 Fit Permitted 0.95 1.00 0.95 1.00 1.00 0.97 3264 Volume (vph) 115 115 115 115 115 115 100 0.92													
Fit Protected 0.95 1.00 0.95 1.00 1.00 0.97 Satd. Flow (prot) 1752 1863 1719 1810 2707 4872 3264 Fitl Permitted 0.95 1.00 0.95 1.00 1.00 0.97 3264 Volume (vph) 115 115 195 140 600 620 619 79 140 55 10 Peak-hour factor, PHF 0.92													
Satd. Flow (prot) 1752 1863 1719 1810 2707 4872 3264 Flt Permitted 0.95 1.00 0.95 1.00 1.00 1.00 0.97 Satd. Flow (perm) 1752 1863 1719 1810 2707 4872 3264 Volume (vph) 115 115 195 140 600 620 619 79 140 55 10 Peak-hour factor, PHF 0.92													_
Fit Permitted 0.95 1.00 0.95 1.00 1.00 1.00 0.97 Satd. Flow (perm) 1752 1863 1719 1810 2707 4872 3264 Volume (vph) 115 115 195 140 600 620 619 79 140 55 10 Peak-hour factor, PHF 0.92<													
Satd. Flow (perm) 1752 1863 1719 1810 2707 4872 3264 Volume (vph) 115 115 195 140 600 620 619 79 140 55 10 Peak-hour factor, PHF 0.92 0.9													
Volume (vph) 115 115 195 140 600 620 619 79 140 55 10 Peak-hour factor, PHF 0.92													
Peak-hour factor, PHF 0.92 0.00 0 <th0< th=""> 0 0 0<!--</td--><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th0<>													
Adj. Flow (vph) 125 125 212 152 652 674 673 86 152 60 11 RTOR Reduction (vph) 0													
RTOR Reduction (vph) 0													_
Lane Group Flow (vph)0250212152652674759022300Heavy Vehicles (%)2%4%2%5%5%5%5%2%4%4%4%Turn TypePermPermProtcustom4%4%Protected Phases442.3 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Heavy Vehicles (%) 2% 4% 2% 5% 5% 5% 2% 4% 4% 4% Turn Type Perm Perm Perm Custom 7 7 6 3 Permitted Phases 4 5 2 6 3 7 Actuated Green, G (s) 20.2 20.2 15.9 65.5 81.8 45.6 12.3 Actuated Green, G (s) 20.2 20.2 15.9 65.5 81.8 45.6 12.3 Actuated g/C Ratio 0.18 0.18 0.14 0.60 0.74 0.41 0.11 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0													
Turn Type Perm Perm Prot custom Protected Phases 4 5 2 6 3 Permitted Phases 4 4 23													
Protected Phases 4 5 2 6 3 Permitted Phases 4 4 23				Z%				5%	2%	4%	4%	4%	
Permitted Phases 4 4 2.3 Actuated Green, G (s) 20.2 20.2 15.9 65.5 81.8 45.6 12.3 Effective Green, g (s) 20.2 20.2 15.9 65.5 81.8 45.6 12.3 Actuated g/C Ratio 0.18 0.14 0.60 0.74 0.41 0.11 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 322 342 248 1078 2013 2020 365 v/s Ratio Prot 0.11 0.09 c0.36 0.16 c0.07 v/s Ratio Perm c0.14 0.25 v/c Ratio 0.78 0.62 0.61 0.60 0.33 0.30 3.0 Uniform Delay, d1 42.7 41.4 44.2 14.1 4.8 22.3 46.6 Progression Factor 1.00 0.69 0.4		Perm	Perm				ustom	0		0			
Actuated Green, G (s) 20.2 20.2 15.9 65.5 81.8 45.6 12.3 Effective Green, g (s) 20.2 20.2 15.9 65.5 81.8 45.6 12.3 Actuated g/C Ratio 0.18 0.18 0.14 0.60 0.74 0.41 0.11 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 322 342 248 1078 2013 2020 365 v/s Ratio Prot 0.11 0.09 c0.36 0.16 c0.07 v/s Ratio Perm c0.14 0.25 v/c Ratio 0.78 0.62 0.61 0.60 0.33 0.38 0.61 Uniform Delay, d1 42.7 41.4 44.2 14.1 4.8 22.3 46.6 Progression Factor 1.00 1.00 0.69 0.41 0.36 1.47 1.00 Incremental Delay, d2 11.1 3.3 2.7 1.5 <td< td=""><td></td><td></td><td></td><td>4</td><td>5</td><td>2</td><td>0.0</td><td>6</td><td></td><td>3</td><td></td><td></td><td></td></td<>				4	5	2	0.0	6		3			
Effective Green, g (s) 20.2 20.2 15.9 65.5 81.8 45.6 12.3 Actuated g/C Ratio 0.18 0.18 0.14 0.60 0.74 0.41 0.11 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 322 342 248 1078 2013 2020 365 v/s Ratio Perm c0.14 0.25		4		20.2	15.0	CE E		45.6		10.0			
Actuated g/C Ratio 0.18 0.18 0.14 0.60 0.74 0.41 0.11 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 322 342 248 1078 2013 2020 365 v/s Ratio Prot 0.11 0.09 c0.36 0.16 c0.07 v/s Ratio Perm c0.14 0.25 0.61 0.00 0.33 0.38 0.61 Uniform Delay, d1 42.7 41.4 44.2 14.1 4.8 22.3 46.6 Progression Factor 1.00 1.00 0.69 0.41 0.36 1.47 1.00 Incremental Delay, d2 11.1 3.3 2.7 1.5 0.1 0.3 3.0 Level of Service D D C A C D Approach Delay (s) 49.7 7.5 33.2 49.6 Approach LOS D A C D													
Clearance Time (s) 4.0 3.0													
Vehicle Extension (s) 3.0							0.74						
Lane Grp Cap (vph) 322 342 248 1078 2013 2020 365 v/s Ratio Prot 0.11 0.09 c0.36 0.16 c0.07 v/s Ratio Perm c0.14 0.25 0.25 0.46 c0.07 v/c Ratio 0.78 0.62 0.61 0.60 0.33 0.38 0.61 Uniform Delay, d1 42.7 41.4 44.2 14.1 4.8 22.3 46.6 Progression Factor 1.00 1.00 0.69 0.41 0.36 1.47 1.00 Incremental Delay, d2 11.1 3.3 2.7 1.5 0.1 0.3 3.0 Delay (s) 53.9 44.7 33.2 7.4 1.8 33.2 49.6 Level of Service D D C A C D Approach Delay (s) 49.7 7.5 33.2 49.6 Approach LOS D A C D Intersection Summary HCM Average Control													
v/s Ratio Prot 0.11 0.09 c0.36 0.16 c0.07 v/s Ratio Perm c0.14 0.25							2013						
v/s Ratio Perm c0.14 0.25 v/c Ratio 0.78 0.62 0.61 0.60 0.33 0.38 0.61 Uniform Delay, d1 42.7 41.4 44.2 14.1 4.8 22.3 46.6 Progression Factor 1.00 0.69 0.41 0.36 1.47 1.00 Incremental Delay, d2 11.1 3.3 2.7 1.5 0.1 0.3 3.0 Delay (s) 53.9 44.7 33.2 7.4 1.8 33.2 49.6 Level of Service D D C A C D Approach Delay (s) 49.7 7.5 33.2 49.6 Approach LOS D A C D Intersection Summary HCM Average Control Delay 24.0 HCM Level of Service C HCM Volume to Capacity ratio 0.64			522				2013						
v/c Ratio 0.78 0.62 0.61 0.60 0.33 0.38 0.61 Uniform Delay, d1 42.7 41.4 44.2 14.1 4.8 22.3 46.6 Progression Factor 1.00 1.00 0.69 0.41 0.36 1.47 1.00 Incremental Delay, d2 11.1 3.3 2.7 1.5 0.1 0.3 3.0 Delay (s) 53.9 44.7 33.2 7.4 1.8 33.2 49.6 Level of Service D D C A A C D Approach Delay (s) 49.7 7.5 33.2 49.6 Approach LOS D A C D Intersection Summary HCM Average Control Delay 24.0 HCM Level of Service C HCM Volume to Capacity ratio 0.64 Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 60.4% ICU Level of Service B			c0 14	0.11	0.00	00.00	0.25	0.10		00.07			
Uniform Delay, d1 42.7 41.4 44.2 14.1 4.8 22.3 46.6 Progression Factor 1.00 1.00 0.69 0.41 0.36 1.47 1.00 Incremental Delay, d2 11.1 3.3 2.7 1.5 0.1 0.3 3.0 Delay (s) 53.9 44.7 33.2 7.4 1.8 33.2 49.6 Level of Service D D C A A C D Approach Delay (s) 49.7 7.5 33.2 49.6 Approach LOS D A C D Intersection Summary HCM Average Control Delay 24.0 HCM Level of Service C HCM Volume to Capacity ratio 0.64 Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 60.4% ICU Level of Service B B				0.62	0.61	0.60		0.38		0.61			
Progression Factor 1.00 1.00 0.69 0.41 0.36 1.47 1.00 Incremental Delay, d2 11.1 3.3 2.7 1.5 0.1 0.3 3.0 Delay (s) 53.9 44.7 33.2 7.4 1.8 33.2 49.6 Level of Service D D C A C D Approach Delay (s) 49.7 7.5 33.2 49.6 Approach LOS D A C D Intersection Summary U A C D HCM Average Control Delay 24.0 HCM Level of Service C HCM Volume to Capacity ratio 0.64 C D Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 60.4% ICU Level of Service B													
Incremental Delay, d2 11.1 3.3 2.7 1.5 0.1 0.3 3.0 Delay (s) 53.9 44.7 33.2 7.4 1.8 33.2 49.6 Level of Service D D C A C D Approach Delay (s) 49.7 7.5 33.2 49.6 Approach LOS D A C D Intersection Summary HCM Average Control Delay 24.0 HCM Level of Service C HCM Volume to Capacity ratio 0.64													
Delay (s) 53.9 44.7 33.2 7.4 1.8 33.2 49.6 Level of Service D D C A C D Approach Delay (s) 49.7 7.5 33.2 49.6 Approach Delay (s) 49.7 7.5 33.2 49.6 Intersection Summary D A C D Intersection Summary 24.0 HCM Level of Service C HCM Average Control Delay 24.0 0.64 Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 60.4% ICU Level of Service B			11.1	3.3	2.7	1.5	0.1	0.3		3.0			
Level of Service D D C A C D Approach Delay (s) 49.7 7.5 33.2 49.6 Approach LOS D A C D Intersection Summary HCM Average Control Delay 24.0 HCM Level of Service C HCM Average Control Delay 0.64 Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 60.4% ICU Level of Service B			53.9	44.7	33.2	7.4	1.8	33.2		49.6			
Approach LOS D A C D Intersection Summary HCM Average Control Delay 24.0 HCM Level of Service C HCM Volume to Capacity ratio 0.64 Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 60.4% ICU Level of Service B			D	D	С	А	А	С		D			
Intersection Summary HCM Average Control Delay 24.0 HCM Level of Service C HCM Volume to Capacity ratio 0.64 Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 60.4% ICU Level of Service B	Approach Delay (s)			49.7		7.5		33.2		49.6			
HCM Average Control Delay 24.0 HCM Level of Service C HCM Volume to Capacity ratio 0.64 Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 60.4% ICU Level of Service B	Approach LOS			D		А		С		D			
HCM Volume to Capacity ratio 0.64 Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 60.4% ICU Level of Service B	Intersection Summary												
Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 60.4% ICU Level of Service B					H	ICM Lev	el of S	ervice		С			
Intersection Capacity Utilization 60.4% ICU Level of Service B													
Analysis Period (min) 15		ilizatior	1		1	CU Leve	el of Se	rvice		В			_
c. Critical Lane Group				15									

c Critical Lane Group

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1 without LRT.sy7

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	ž	ተተ	1	36	**	7	Υc	44	ř	2	^	1
Volume (vph)	140	1185	100	40	436	460	70	690	140	310	280	200
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phases	5	2	3	1	6	6	3	8	8	7	-	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	17.0	47.0	14.0	8.0	38.0	38.0	14.0	29.0	29.0	26.0	41.0	41.0
Total Split (%)		42.7%			34.5%							
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode		C-Max	None		C-Max		None	None	None	None	None	None
Act Effct Green (s)	13.0	43.0	51.9	4.0	34.0	34.0	8.9	25.0	25.0	22.0	38.1	38.1
Actuated g/C Ratio	0.12	0.39	0.47	0.04	0.31	0.31	0.08	0.23	0.23	0.20	0.35	0.35
v/c Ratio	0.75	0.96	0.14	0.70	0.45	0.62	0.54	0.96	0.35	0.98	0.26	0.33
Control Delay	70.0	49.7	3.5	104.7	32.3	6.4	63.0	66.5	13.5	71.8	8.9	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.0	49.7	3.5	104.7	32.3	6.4	63.0	66.5	13.5	71.8	8.9	5.1
LOS	E	D	А	F	C	A	E	E	В	E	A	A
Approach Delay		48.4			22.6 C			58.0			32.6	
Approach LOS		D			C			E			С	
Intersection Summary												
Cycle Length: 110												
Actuated Cycle Length	n: 110											
Offset: 2 (2%), Refere	nced to p	hase 2:	EBT an	d 6:WE	T, Star	of Gre	en					
Natural Cycle: 90												
Control Type: Actuated		nated										
Maximum v/c Ratio: 0	.98											
ntersection Signal De					ntersec							
Intersection Capacity l	Itilizatio	n 85 7%			CILLAV	ol of Se	rvice E					

Splits and Phases: 40: Harbor Dr & 32nd St

→ ø2		🖌 ø1	\$ ø3	🗣 ø4	
47 s		8 s	14 s	41 s	
▲ ø6	<u>_</u>	5	1 ø8		▶ ø7
38 s	17 s		29 s		26 s

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Group Flow (vph)	152	1288	109	43	474	500	76	750	152	337	304	21
v/c Ratio	0.75	0.96	0.14	0.70	0.45	0.62	0.54	0.96	0.35	0.98	0.26	0.3
Control Delay	70.0	49.7	3.5	104.7	32.3	6.4	63.0	66.5	13.5	71.8	8.9	5.
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
Total Delay	70.0	49.7	3.5	104.7	32.3	6.4	63.0	66.5	13.5	71.8	8.9	5.
Queue Length 50th (ft)	105	459	5	31	141	0	52	276	21	243	78	6
Queue Length 95th (ft)	#205	#613	27	#95	191	83	101	#400	77	#429	33	1
Internal Link Dist (ft)		710			294			45			613	
Turn Bay Length (ft)	230		200	200		200				200		
Base Capacity (vph)	203	1344	788	61	1043	804	156	781	429	344	1189	66
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.75	0.96	0.14	0.70	0.45	0.62	0.49	0.96	0.35	0.98	0.26	0.3

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Synchro 6 Report 3/4/2011

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EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
ž	<u>^</u>	ž	ž	**	7	¥,	44	ř	×	44	
1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.
1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.0
1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.9
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.8
0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.0
											151
0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.0
1719	3438	1538	1687	3374	1484	1719	3438	1502	1719	3438	151
140	1185	100	40	436	460	70	690	140	310	280	20
0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
152	1288	109	43	474	500	76	750	152	337	304	21
0	0	48		0	345		0		0	0	14
152	1288	61	43	474	155	76	750	64	337	304	7
											1
5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Prot			Prot		Perm	Prot		Perm	Prot		Perr
5	2		1	6		3	8		7	4	
											38.
											38.
											0.3
											4.
											3.
					459			341			52
c0.09	c0.37		0.03	0.14		0.04	c0.22		c0.20	0.09	
											0.0
											0.1
											24.
											1.0
											0.
											26.
E		В	F		С	D		С	E		(
	D			С			E			D	
			F	ICM Le	vel of Se	ervice		D			
			-			(.)		10.0			
						· · ·					
ilizatior	1	85.7% 15	10	CU Lev	el of Sei	rvice		E			
	EBL 1900 4.0 1.00 1.00 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 1719 140 0.95 172 152 152 152 152 152 152 152 15	▶ → EBL EBT 1900 1900 100 1900 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1719 3438 140 1185 0.92 0.92 152 1288 5% 5% Prot F 5 2 13.0 43.0 0.12 0.39 4.0 4.0 203 1344 c0.09 c0.37 0.75 0.96 46.9 32.6 1.00 1.00 14.0 16.4 60.9 47.9 D Helay s) S	EBL EBT EBR ↑ ↑ ↑ 1900 1900 1900 4.0 4.0 4.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.01 1.00 1.00 1.02 1.00 1.00 1.03 1.00 1.00 1.04 1.85 100 0.92 0.92 0.92 152 1288 109 0 0 48 152 1288 61 5% 5% 5% Protm+ov 5 2 13.0 43.0 51.9 0.12 0.39 0.47 4.0 4.0 4.0 3.0 3.0 3.0 3.0 3	EBL EBT EBR WBL 1900 1900 1900 1900 1900 1900 1900 1900 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 0.95 1.00 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1719 3438 1538 1687 0.95 1.00 1.00 0.95 1719 3438 1538 1687 140 1185 100 40 0.92 0.92 0.92 0.92 152 1288 109 43 0 0 4.8 0 152 1288 61 43 5%	EBL EBT EBR WBL WBT 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1.00 1719 3438 1538 1687 3374 140 1185 100 40 436 0.92 0.92 0.92 0.92 0.92	EBL EBT EBR WBL WBT WBR 1900 1900 1900 1900 1900 1900 1000 1900 1900 1900 1900 1900 4.0 4.0 4.0 4.0 4.0 4.0 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 0.98 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.01 1.00 0.95 1.00 1.00 1.00 1719 3438 1538 1687 3374 1484 140 1185 100 4.0 436 460 0.92 0.92 0.92 0.92 0.92 0.92 152 1288 61 43	EBL EBT EBR WBL WBT WBR NBL 1900 1900 1900 1900 1900 1900 1900 1900 4.0 4.0 4.0 4.0 4.0 4.0 4.0 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 0.95 1.01 1.00 0.95 1.00 1.00 0.95 1.00 0.00 95 1.01 1.00 0.95 1.00 1.00 0.95 1.00 0.00 95 1.01 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.05 1.10 1.00 0.95 0.92 0.92 0.	EBL EBT EBR WBL WBT WBR NBL NBT 1900 1900 1900 1900 1900 1900 1900 1900 1900 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.01 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.95 1.01 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 1.10 1.00	EBL EBT EBR WBL WBT WBR NBL NBT NBR 1900 100 100 100 1000 1000 1000	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL 1900 100 1.00	EBL EBT EBR WBL WBT VBR NBL NBT NBR SBL SBT 1900 100 1.00

Horizon Year Alt 1 with Grade Separation and Coordination

Timing Plan: PM Peak

Synchro 6 Report

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 40: Harbor Dr & 32nd St

42: I-5 SB Off-ram					Timing Plan: PM Pea
	\rightarrow	Ť	Ŧ		
Lane Group	EBR	NBT	SBT	ø2	
Lane Configurations	7	ተቀ	***		
Volume (vph)	822	1440	758		
Turn Type	custom				
Protected Phases		24	6	2	
Permitted Phases	4				
Detector Phases	4	24	6		
Minimum Initial (s)	4.0		4.0	4.0	
Minimum Split (s)	20.0		20.0	20.0	
Total Split (s)		100.0	28.0	28.0	
Total Split (%)	72.0%1	00.0%	28.0%	28%	
Yellow Time (s)	3.5		3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None		C-Max	C-Max	
Act Effct Green (s)	67.7	100.0	24.3		
Actuated g/C Ratio	0.68	1.00	0.24		
v/c Ratio	0.82	0.44	0.67		
Control Delay	19.3	0.2	17.5		
Queue Delay	13.4	0.0	0.7		
Total Delay	32.7	0.2	18.3		
LOS	С	A	_		
Approach Delay		0.2	18.3		
Approach LOS		A	В		
Intersection Summar	/				
Cycle Length: 100					
Actuated Cycle Lengt	:h: 100				
Offset: 18 (18%), Ref		o phase	2:NBT	and 6:8	BBT, Start of Green
Natural Cycle: 60					
Control Type: Actuate	ed-Coordi	nated			
Maximum v/c Ratio: (0.82				
Intersection Signal De	elay: 13.6				ntersection LOS: B
Intersection Capacity	Utilization	1 72.2%	,	1	CU Level of Service C

Splits and Phases: 42: I-5 SB Off-ramp & 28th St

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28 s	72 s
↓ _{ø6}	
28 s	

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU	
42: I-5 SB Off-ramp & 28th St	

Horizon Year Alt 1 with Grade Separation and Coordination Timing Plan: PM Peak

	\mathbf{r}	t.	Ŧ
Lane Group	EBR	NBT	SBT
Lane Group Flow (vph)	893	1565	824
v/c Ratio	0.82	0.44	0.67
Control Delay	19.3	0.2	17.5
Queue Delay	13.4	0.0	0.7
Total Delay	32.7	0.2	18.3
Queue Length 50th (ft)	357	0	123
Queue Length 95th (ft)	568	m0	m131
Internal Link Dist (ft)		139	454
Turn Bay Length (ft)			
Base Capacity (vph)	1099	3522	1236
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	202	0	158
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.00	0.44	0.76
Intersection Summary			
m Volume for 95th per	centile	queue	is meter

Barrio Logan CPU 42: I-5 SB Off-ramp	& 28th	ı St	Hor	izon Y	ear Al	t 1 with	Grad	e Sepa			oordin Plan: PM	
	۶	-	$\mathbf{\hat{z}}$	4	+	×	•	1	1	1	Ļ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			74					44			444	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0					4.0			4.0	
Lane Util. Factor			1.00					0.95			0.91	
Frt			0.86					1.00			1.00	
Flt Protected			1.00					1.00			1.00	
Satd. Flow (prot)			1611					3539			5085	
Flt Permitted			1.00					1.00			1.00	
Satd. Flow (perm)			1611					3539			5085	
Volume (vph)	0	0	822	0	0	0	0	1440	0	0	758	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	893	0	0	0	0	1565	0	0	824	0
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	890	0	0	0	0	1565	0	0	824	0
Turn Type		-	ustom									
Protected Phases			actorn					24			6	
Permitted Phases			4								Ū	
Actuated Green, G (s)			67.7					100.0			24.3	
Effective Green, g (s)			67.7					100.0			24.3	
Actuated g/C Ratio			0.68					1.00			0.24	
Clearance Time (s)			4.0								4.0	
Vehicle Extension (s)			3.0								3.0	
Lane Grp Cap (vph)			1091					3539			1236	
v/s Ratio Prot			1001					0.44			c0.16	
v/s Ratio Perm			c0.55					0.11			00.10	
v/c Ratio			0.82					0.44			0.67	
Uniform Delay, d1			11.6					0.0			34.2	
Progression Factor			1.00					1.00			0.47	
Incremental Delay, d2			4.8					0.0			1.2	
Delay (s)			16.4					0.0			17.4	
Level of Service			В					A			В	
Approach Delay (s)		16.4			0.0			0.0			17.4	
Approach LOS		В			А			А			В	
Intersection Summary												
HCM Average Control E	Delay		8.9	ŀ	ICM Le	vel of S	ervice		A			
HCM Volume to Capaci			0.78									
Actuated Cycle Length (100.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut			72.2%			el of Sei			С			
Analysis Period (min)			15									
c Critical Lane Group												

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al1 PM with Improvements Alt 1 without LRT.sy7

Kimley-Horn and Associates, Inc.

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ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
ane Configurations	7	4	7*	14	÷	7	H	作品	76	41 >	
/olume (vph)	190	250	190	120	350	110	100	570	60	765	
Furn Type	Perm		Perm	Perm		Perm	Perm		Perm		
Protected Phases		4			8			2		6	
Permitted Phases	4		4	8		8	2		6		
Detector Phases	4	4	4	8	8	8	2	2	6	6	
Vinimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vinimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	
Fotal Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	45.0	45.0	45.0	45.0	
Fotal Split (%)				43.8%							
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
_ead/Lag											
_ead-Lag Optimize?											
Recall Mode	None	None	None	None	None			C-Min			
Act Effct Green (s)	26.2	26.2	26.2	26.2	26.2	26.2	45.8	45.8	45.8	45.8	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.57	0.57	0.57	0.57	
//c Ratio	0.90	0.45	0.34	0.42	0.62	0.20	0.77	0.37	0.21	0.68	
Control Delay	63.5	22.5	8.8	24.0	26.7	4.3	51.9	8.0	5.0	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
Fotal Delay	63.5	22.5	8.8	24.0	26.7	4.3	51.9	8.0	5.0	6.5	
LOS	E	С	A	С	C	A	D	A	A	A	
Approach Delay		30.8 C			21.9 C			14.1 B		6.5 A	
Approach LOS		U U			U U			В		A	
ntersection Summary											
Cycle Length: 80											
Actuated Cycle Length:	80										
Offset: 79 (99%), Refer	enced t	o phase	2:NBT	L and 6	SBTL,	Start of	Green				
Vatural Cycle: 80											
Control Type: Actuated		nated									
Maximum v/c Ratio: 0.9											
ntersection Signal Dela					ntersec						
ntersection Capacity U	tilizatio	n 78.9%		1	CU Lev	el of Se	rvice D				

↑	ø4
45 s	35 s
↓ ≻ ø6	⊲ ø8
45 s	35 s

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011
 Barrio Logan CPU
 Horizon Year Alt 2 with Grade Separation and Coordination

 14: National Ave & Cesar E. Chavez Pkwy
 Timing Plan: AM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	207	272	207	130	380	120	109	674	65	1169	
v/c Ratio	0.90	0.45	0.34	0.42	0.62	0.20	0.77	0.37	0.21	0.68	
Control Delay	63.5	22.5	8.8	24.0	26.7	4.3	51.9	8.0	5.0	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
Total Delay	63.5	22.5	8.8	24.0	26.7	4.3	51.9	8.0	5.0	6.5	
Queue Length 50th (ft)	89	97	25	46	146	0	39	79	6	46	
Queue Length 95th (ft)	#203	156	69	91	225	31 ı	m#142	100	m11	71	
Internal Link Dist (ft)		608			780			301		299	
Turn Bay Length (ft)											
Base Capacity (vph)	274	722	692	362	722	687	142	1832	316	1726	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	143	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.76	0.38	0.30	0.36	0.53	0.17	0.77	0.37	0.21	0.74	
Intersection Summary											

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 14: National Ave & 0	Cesar E	E. Cha			ear Al	t 2 with	n Grad	e Sepa			Coordin Plan: AM	
	۶	-	7	4	+	•	1	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	4	7*	74	*	7	h	朴		7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3184		1530	2927	
Flt Permitted	0.32	1.00	1.00	0.47	1.00	1.00	0.17	1.00		0.36	1.00	
Satd. Flow (perm)	602	1863	1583	868	1863	1583	287	3184		576	2927	
Volume (vph)	190	250	190	120	350	110	100	570	50	60	765	310
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	272	207	130	380	120	109	620	54	65	832	337
RTOR Reduction (vph)	0	0	86	0	0	81	0	7	0	0	48	0
Lane Group Flow (vph)	207	272	121	130	380	39	109	667	0	65	1121	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2	-		6	Ŭ	
Actuated Green, G (s)	26.2	26.2	26.2	26.2	26.2	26.2	45.8	45.8		45.8	45.8	
Effective Green, g (s)	26.2	26.2	26.2	26.2	26.2	26.2	45.8	45.8		45.8	45.8	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.57	0.57		0.57	0.57	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	610	518	284	610	518	164	1823		330	1676	
v/s Ratio Prot		0.15			0.20			0.21			c0.38	
v/s Ratio Perm	c0.34	0.10	0.08	0.15	0.20	0.02	0.38	0.21		0.11	00.00	
v/c Ratio	1.05	0.45	0.23	0.46	0.62	0.08	0.66	0.37		0.20	0.67	
Uniform Delay, d1	26.9	21.2	19.6	21.3	22.7	18.6	11.8	9.2		8.2	11.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.77	0.73		0.34	0.37	
Incremental Delay, d2	78.1	0.5	0.2	1.2	2.0	0.1	19.1	0.6		1.1	1.7	
Delay (s)	105.0	21.7	19.8	22.5	24.7	18.6	28.2	7.3		3.9	6.1	
Level of Service	F	C	B	C	C	B	C	A		A	A	
Approach Delay (s)		46.3		-	23.1		-	10.2			6.0	
Approach LOS		D			С			В			A	
Intersection Summary												
HCM Average Control E	Delay		18.5	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.81									
Actuated Cycle Length	(s)		80.0	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut	ilization		78.9%	10	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

С	Critical	Lane	Group	
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Synchro 6 Report 3/4/2011
 Barrio Logan CPU
 Horizon Year Alt 2 with Grade Separation and Coordination

 15: Newton Ave & Cesar E. Chavez Pkwy
 Timing Plan: AM Peak

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	7	Ta	34	To	3	41.	A.	ŧЪ	
Volume (vph)	80	40	40	50	40	420	100	825	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	36.0	36.0	36.0	36.0	44.0	44.0	44.0	44.0	
Total Split (%)			45.0%						
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None		C-Min				
Act Effct Green (s)	10.1	10.1	10.1	10.1	64.6	64.6	64.6	64.6	
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.81	0.81	0.81	0.81	
v/c Ratio	0.55	0.40	0.27	0.46	0.18	0.19	0.18	0.42	
Control Delay	44.9	18.8	34.2	20.1	5.0	2.8	1.7		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay	44.9	18.8	34.2	20.1	5.0	2.8	1.7	1.7	
LOS	D	В	С	С	A		A		
Approach Delay		30.5		23.6		3.0		1.7	
Approach LOS		С		С		A		A	
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	n: 80								
Offset: 32 (40%), Refe	erenced t	o phase	2:NBT	L and 6	:SBTL,	Start of	Green		
Natural Cycle: 60									
Control Type: Actuated	d-Coordi	nated							
Maximum v/c Ratio: 0	.55								
Intersection Signal Del					ntersec				
Intersection Capacity L	Jtilizatio	n 52.0%	1		CU Lev	el of Se	ervice A		
Analysis Period (min)	15								

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy

↑ ₀2	<u>_</u> ₀4
44 s	36 s
↓ _{ø6}	€ ø8
44 s	36 s

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Barrio Logan CPU 15: Newton Ave & C	esar E	. Cha			ear Alt	aration and Coordination Timing Plan: AM Peak			
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	87	108	43	130	43	490	109	1060	
v/c Ratio	0.55	0.40	0.27	0.46	0.18	0.19	0.18	0.42	
Control Delay	44.9	18.8	34.2	20.1	5.0	2.8	1.7	1.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay	44.9	18.8	34.2	20.1	5.0	2.8	1.7	1.7	
Queue Length 50th (ft)	42	20	20	25	4	24	3	16	
Queue Length 95th (ft)	82	61	47	70	m15	47	m11	63	
Internal Link Dist (ft)		598		178		305		301	
Turn Bay Length (ft)									
Base Capacity (vph)	502	717	512	725	242	2580	604	2551	
Starvation Cap Reductn	0	0	0	0	0	0	0	678	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.15	0.08	0.18	0.18	0.19	0.18	0.57	
Intersection Summary									
m Volume for 95th per	centile	queue i	s meter	ed by u	pstream	signal.			

Total Lost time (s) 4.0		≯	+	*	4	t	×	~	†	*	1	ţ	~
Lane Configurations h	Movement	FBI	FBT	FBR	WBI	WBT	WBR	NBI	NBT	NBR	SBI	SBT	SBR
Ideal Flow (vphpl) 1900 1				2011									0.0.
Total Lost time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 ane Util, Factor 1.00 1.00 1.00 1.00 0.95 1.00 0.92 <				1900			1900			1900			1900
Frit 1.00 0.91 1.00 0.91 1.00 0.99 1.00 0.98 FIL Protected 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 Statl. Flow (prot) 1770 1695 1770 1699 1612 3191 1612 3149 Fit Permitted 0.56 1.00 0.65 1.00 0.25 1.00 0.47 1.00 Satd. Flow (perm) 1042 1695 1205 1699 432 3191 803 3149 Volume (vph) 80 40 60 40 50 70 40 420 30 100 825 150 Peak-hour factor, PHF 0.92 12% 12% 12% 12% 12% <t< td=""><td>Total Lost time (s)</td><td>4.0</td><td></td><td></td><td>4.0</td><td>4.0</td><td></td><td>4.0</td><td></td><td></td><td></td><td></td><td></td></t<>	Total Lost time (s)	4.0			4.0	4.0		4.0					
Fit Protected 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 Satd. Flow (prot) 1770 1695 1770 1699 1612 3191 1612 3149 Fit Permitted 0.56 1.00 0.65 1.00 0.47 1.00 Satd. Flow (perm) 1042 1695 1205 1699 432 3191 803 3149 Volume (vph) 80 40 60 40 50 70 40 420 30 100 825 150 Peak-hour factor, PHF 0.92 2% 2% 2% 2% 2% 2% 12% 12% <td>Lane Util. Factor</td> <td>1.00</td> <td>1.00</td> <td></td> <td>1.00</td> <td>1.00</td> <td></td> <td>1.00</td> <td>0.95</td> <td></td> <td>1.00</td> <td>0.95</td> <td></td>	Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Satd. Flow (prot) 1770 1695 1770 1699 1612 3191 1612 3149 FIL Permitted 0.56 1.00 0.65 1.00 0.25 1.00 0.47 1.00 FIL Permitted 0.56 1.00 0.65 1.00 0.25 1.00 0.47 1.00 Satd. Flow (prot) 1042 1695 1205 1699 432 3191 803 3149 Volume (vph) 80 40 60 40 50 70 40 420 30 100 825 150 Peak-hour factor, PHF 0.92 12% 12% 12% 12% <	Frt	1.00	0.91		1.00	0.91		1.00	0.99		1.00	0.98	
Fit Permitted 0.56 1.00 0.65 1.00 0.25 1.00 0.47 1.00 Satd. Flow (perm) 1042 1695 1205 1699 432 3191 803 3149 Volume (vph) 80 40 60 40 50 70 40 420 30 100 825 156 Peak-hour factor, PHF 0.92 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% </td <td>Flt Protected</td> <td>0.95</td> <td>1.00</td> <td></td> <td>0.95</td> <td>1.00</td> <td></td> <td>0.95</td> <td>1.00</td> <td></td> <td>0.95</td> <td>1.00</td> <td></td>	Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm) 1042 1695 1205 1699 432 3191 803 3149 Volume (vph) 80 40 60 40 50 70 40 420 30 100 825 156 Peak-hour factor, PHF 0.92 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% 12% <td< td=""><td>Satd. Flow (prot)</td><td>1770</td><td>1695</td><td></td><td>1770</td><td>1699</td><td></td><td>1612</td><td>3191</td><td></td><td>1612</td><td>3149</td><td></td></td<>	Satd. Flow (prot)	1770	1695		1770	1699		1612	3191		1612	3149	
Volume (vph) 80 40 60 40 50 70 40 420 30 100 825 150 Peak-hour factor, PHF 0.92 12%	Flt Permitted	0.56	1.00		0.65	1.00		0.25	1.00		0.47	1.00	
Peak-hour factor, PHF 0.92 0.93 0	Satd. Flow (perm)	1042	1695		1205	1699		432	3191		803	3149	
Adj. Flow (vph) 87 43 65 43 54 76 43 457 33 109 897 163 RTOR Reduction (vph) 0 58 0 0 67 0 0 3 0 0 8 0 Lane Group Flow (vph) 87 50 0 43 63 0 43 487 0 109 1052 0 Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 12% <td>Volume (vph)</td> <td>80</td> <td>40</td> <td>60</td> <td>40</td> <td>50</td> <td>70</td> <td>40</td> <td>420</td> <td>30</td> <td>100</td> <td>825</td> <td>150</td>	Volume (vph)	80	40	60	40	50	70	40	420	30	100	825	150
RTOR Reduction (vph) 0 58 0 0 67 0 0 3 0 0 8 0 Lane Group Flow (vph) 87 50 0 43 63 0 43 487 0 109 1052 0 Heavy Vehicles (%) 2% 2% 2% 2% 2% 12%	Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Lane Group Flow (vph) 87 50 0 43 63 0 43 487 0 109 1052 0 Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 12%	Adj. Flow (vph)	87	43	65	43	54	76	43	457	33	109	897	163
Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 2% 12% <th< td=""><td>RTOR Reduction (vph)</td><td>0</td><td>58</td><td>0</td><td>0</td><td>67</td><td>0</td><td>0</td><td>3</td><td>0</td><td>0</td><td>8</td><td>0</td></th<>	RTOR Reduction (vph)	0	58	0	0	67	0	0	3	0	0	8	0
Turn Type Perm Perm Perm Perm Protected Phases 4 8 2 6 Actuated Green, G (s) 9.0 9.0 9.0 63.0 63.0 63.0 63.0 Actuated Green, G (s) 9.0 9.0 9.0 63.0 63.0 63.0 63.0 63.0 Actuated Green, G (s) 9.0 9.0 9.0 63.0 63.0 63.0 63.0 63.0 Actuated g/C Ratio 0.11 0.11 0.11 0.11 0.79 0.79 0.79 0.79 Clearance Time (s) 4.0	Lane Group Flow (vph)			-			-			-			0
Protected Phases 4 8 2 6 Permitted Phases 4 8 2 6 Actuated Green, G (s) 9.0 9.0 9.0 63.0 63.0 63.0 63.0 Actuated Green, G (s) 9.0 9.0 9.0 9.0 63.		2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Permitted Phases 4 8 2 6 Actuated Green, G (s) 9.0 9.0 9.0 63.0	Turn Type	Perm			Perm			Perm			Perm		
Actuated Green, G (s) 9.0 9.0 9.0 9.0 63.0 63.0 63.0 63.0 Effective Green, g (s) 9.0 9.0 9.0 9.0 63.0 63.0 63.0 63.0 Actuated g/C Ratio 0.11 0.11 0.11 0.11 0.79 0.79 0.79 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 117 191 136 191 340 2513 632 2480 v/s Ratio Perm 0.03 0.04 0.15 c0.33 .03 .04 0.14 v/c Ratio 0.74 0.26 0.32 0.33 0.13 0.19 0.17 0.42 Uniform Delay, d1 34.4 32.5 32.7 32.7 2.0 2.1 2.1 2.7 Progression Factor 1.00 1.00 1.00 0.77 0.2 0.5 0.4 Delay (s)	Protected Phases		4			8			2			6	
Effective Green, g (s) 9.0 9.0 9.0 63.0 63.0 63.0 63.0 Actuated g/C Ratio 0.11 0.11 0.11 0.11 0.79 0.79 0.79 Clearance Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Lane Grp Cap (vph) 117 191 136 191 340 2513 632 2480 v/s Ratio Prot 0.03 0.04 0.15 c0.33 .0													
Actuated g/C Ratio 0.11 0.11 0.11 0.79 0.79 0.79 0.79 Clearance Time (s) 4.0 3.0													
Clearance Time (s) 4.0													
Vehicle Extension (s) 3.0													
Lane Grp Cap (vph) 117 191 136 191 340 2513 632 2480 v/s Ratio Prot 0.03 0.04 0.15 c0.33 v/s Ratio Perm c0.08 0.04 0.15 c0.33 v/s Ratio Perm c0.08 0.04 0.10 0.14 v/c Ratio 0.74 0.26 0.32 0.33 0.13 0.19 0.17 0.42 Uniform Delay, d1 34.4 32.5 32.7 32.7 2.0 2.1 2.1 2.7 Progression Factor 1.00 1.00 1.00 0.97 1.04 0.37 0.33 Incremental Delay, d2 22.3 0.7 1.3 1.0 0.7 0.2 0.5 0.4 Delay (s) 56.7 33.2 34.0 33.7 2.7 2.4 1.3 1.3 Level of Service E C C C A A A Approach LOS D C A A<													
v/s Ratio Prot 0.03 0.04 0.15 c0.33 v/s Ratio Perm c0.08 0.04 0.10 0.14 v/c Ratio 0.74 0.26 0.32 0.33 0.13 0.19 0.17 0.42 Uniform Delay, d1 34.4 32.5 32.7 32.7 2.0 2.1 2.1 2.7 Progression Factor 1.00 1.00 1.00 0.07 0.2 0.5 0.4 Delay (s) 56.7 33.2 34.0 33.7 2.7 2.4 1.3 1.3 Level of Service E C C A A A Approach Delay (s) 43.7 33.8 2.4 1.3 1.3 Approach LOS D C A A A HCM Average Control Delay 8.3 HCM Level of Service A A HCM Volume to Capacity ratio 0.46	(/												
v/s Ratio Perm c0.08 0.04 0.10 0.14 v/c Ratio 0.74 0.26 0.32 0.33 0.13 0.19 0.17 0.42 Uniform Delay, d1 34.4 32.5 32.7 32.7 2.0 2.1 2.1 2.7 Progression Factor 1.00 1.00 1.00 0.97 1.04 0.37 0.33 Incremental Delay, d2 22.3 0.7 1.3 1.0 0.7 0.2 0.5 0.4 Delay (s) 56.7 33.2 34.0 33.7 2.7 2.4 1.3 1.3 Level of Service E C C C A A A Approach Delay (s) 43.7 33.8 2.4 1.3 Approach LOS D C A A HCM Average Control Delay 8.3 HCM Level of Service A A A HCM Volume to Capacity ratio 0.46		117			136			340			632		
v/c Ratio 0.74 0.26 0.32 0.33 0.13 0.19 0.17 0.42 Uniform Delay, d1 34.4 32.5 32.7 32.7 2.0 2.1 2.1 2.7 Progression Factor 1.00 1.00 1.00 0.97 1.04 0.37 0.33 Incremental Delay, d2 22.3 0.7 1.3 1.0 0.7 0.2 0.5 0.4 Delay (s) 56.7 33.2 34.0 33.7 2.7 2.4 1.3 1.3 Level of Service E C C A A A Approach LOS D C A A A Intersection Summary 8.3 HCM Level of Service A A HCM Volume to Capacity ratio 0.46 - - - Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 - Intersection Capacity Utilization 52.0% ICU Level of Service A - </td <td></td> <td></td> <td>0.03</td> <td></td> <td></td> <td>0.04</td> <td></td> <td></td> <td>0.15</td> <td></td> <td></td> <td>c0.33</td> <td></td>			0.03			0.04			0.15			c0.33	
Uniform Delay, d1 34.4 32.5 32.7 32.7 2.0 2.1 2.1 2.7 Progression Factor 1.00 1.00 1.00 0.97 1.04 0.37 0.33 Incremental Delay, d2 22.3 0.7 1.3 1.0 0.7 0.2 0.5 0.4 Delay (s) 56.7 33.2 34.0 33.7 2.7 2.4 1.3 1.3 Level of Service E C C A A A Approach Delay (s) 43.7 33.8 2.4 1.3 1.3 Approach LOS D C A A A Intersection Summary HCM Average Control Delay 8.3 HCM Level of Service A HCM Volume to Capacity ratio 0.46													
Progression Factor 1.00 1.00 1.00 0.97 1.04 0.37 0.33 Incremental Delay, d2 22.3 0.7 1.3 1.0 0.7 0.2 0.5 0.4 Delay (s) 56.7 33.2 34.0 33.7 2.7 2.4 1.3 1.3 Level of Service E C C A A A Approach Delay (s) 43.7 33.8 2.4 1.3 1.3 Approach LOS D C A A A Intersection Summary HCM Average Control Delay 8.3 HCM Level of Service A HCM Volume to Capacity ratio 0.46 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 52.0% ICU Level of Service A A													
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Approach Delay (s) 43.7 33.8 2.4 1.3 Approach LOS D C A A Intersection Summary Key Structure Key Structure A HCM Average Control Delay 8.3 HCM Level of Service A HCM Volume to Capacity ratio 0.46 A Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 52.0% ICU Level of Service A Analysis Period (min) 15													
Approach LOS D C A A Intersection Summary Intersection Summary Intersection Service A HCM Average Control Delay 8.3 HCM Level of Service A HCM Volume to Capacity ratio 0.46 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 52.0% ICU Level of Service A Analysis Period (min) 15		E			U			A			A		
Intersection Summary HCM Average Control Delay 8.3 HCM Level of Service A HCM Volume to Capacity ratio 0.46 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 52.0% ICU Level of Service A Analysis Period (min) 15													
HCM Average Control Delay 8.3 HCM Level of Service A HCM Volume to Capacity ratio 0.46 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 52.0% ICU Level of Service A Analysis Period (min) 15	Approach LOS		U			U			A			A	
HCM Volume to Capacity ratio 0.46 Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 52.0% ICU Level of Service A Analysis Period (min) 15													
Actuated Cycle Length (s) 80.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 52.0% ICU Level of Service A Analysis Period (min) 15					H	ICM Lev	vel of S	ervice		А			
Intersection Capacity Utilization 52.0% ICU Level of Service A Analysis Period (min) 15				0.46									
Analysis Period (min) 15								· · /					
		ilization			10	CU Leve	el of Se	rvice		А			
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Barrio Logan CPU	Horizon Year A	t 2 with Grade	Separa	ation and Coordination
16: Main St & Cesar E. Chavez Pl	kwy		-	Timing Plan: AM Peak
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			•			``		-	•
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	7	Ţ,	84	Ť	r	ň	47.	16	41,
Volume (vph)	150	190	70	350	190	85	340	150	580
Turn Type	Perm		Perm		Perm	Perm		Perm	
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Detector Phases	4	4	8	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0	41.0	41.0	41.0	41.0
Total Split (%)	48.8%	48.8%	48.8%	48.8%	48.8%	51.3%	51.3%	51.3%	51.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None			C-Min	
Act Effct Green (s)	23.5	23.5	23.5	23.5	23.5	48.5	48.5	48.5	48.5
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.61	0.61	0.61	0.61
v/c Ratio	0.73	0.41	0.24	0.69	0.35	0.38	0.25	0.37	0.46
Control Delay	43.3	22.7	20.6	31.0	4.3	17.5	8.2	9.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.1
Total Delay	43.3	22.7	20.6	31.0	4.3	17.5	8.4	9.2	6.4
LOS	D	С	С	С	A	В	A	A	
Approach Delay		31.4		21.5			9.9		6.9
Approach LOS		С		С			A		А
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length	n: 80								
Offset: 18 (23%), Refe	erenced t	o phase	2:NBT	L and 6	:SBTL,	Start of	Green		
Natural Cycle: 60									
Control Type: Actuated	d-Coordir	nated							
Maximum v/c Ratio: 0.	.73								
Intersection Signal Del					ntersec				
Intersection Capacity L	Jtilizatior	ז 70.6 <mark>%</mark>			CU Lev	el of Se	ervice C		

Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 14.8	Intersection LOS: B
Intersection Capacity Utilization 70.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases:	16: Main St & Cesar E. Chavez Pkwy

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41 s	39 s
₽6	◆ ø8
41 s	39 s

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Barrio Logan CPU	Horizon Year Alt 2 with	Grade Separation and Coordination
16: Main St & Cesar E. Chavez	Pkwy	Timing Plan: AM Peak

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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	163	223	76	380	207	92	468	163	842	
v/c Ratio	0.73	0.41	0.24	0.69	0.35	0.38	0.25	0.37	0.46	
Control Delay	43.3	22.7	20.6	31.0	4.3	17.5	8.2	9.2	6.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.1	
Total Delay	43.3	22.7	20.6	31.0	4.3	17.5	8.4	9.2	6.4	
Queue Length 50th (ft)	68	80	27	156	0	24	51	29	70	
Queue Length 95th (ft)	122	119	51	213	38	79	93	53	93	
Internal Link Dist (ft)		588		983			201		305	
Turn Bay Length (ft)										
Base Capacity (vph)	331	808	465	815	778	240	1839	442	1816	
Starvation Cap Reductn	0	0	0	0	0	0	734	0	161	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.49	0.28	0.16	0.47	0.27	0.38	0.42	0.37	0.51	
ntersection Summary										

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Barrio Logan CPU 16: Main St & Cesar	E. Ch	avez F		izon Y	ear Al	2 with	Grade	e Sepa			oordin lan: AM	
	۶	-	7	4	+	×	•	1	1	1	Ŧ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	Т.		jk.	ţ.	7	Υŗ	4 b		7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.98	1.00		0.99	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1742	1839		1750	1863	1511	1537	2996		1549	2945	
Flt Permitted	0.28	1.00		0.51	1.00	1.00	0.29	1.00		0.47	1.00	
Satd. Flow (perm)	518	1839		947	1863	1511	472	2996		772	2945	
Volume (vph)	150	190	15	70	350	190	85	340	90	150	580	195
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	207	16	76	380	207	92	370	98	163	630	212
RTOR Reduction (vph)	0	4	0	0	0	146	0	22	0	0	30	0
Lane Group Flow (vph)	163	219	0	76	380	61	92	446	0	163	812	0
Confl. Peds. (#/hr)	38		18	18		38	26		5	5		26
Confl. Bikes (#/hr)			2			1			1			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	23.5	23.5		23.5	23.5	23.5	48.5	48.5		48.5	48.5	
Effective Green, g (s)	23.5	23.5		23.5	23.5	23.5	48.5	48.5		48.5	48.5	
Actuated g/C Ratio	0.29	0.29		0.29	0.29	0.29	0.61	0.61		0.61	0.61	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	152	540		278	547	444	286	1816		468	1785	
v/s Ratio Prot		0.12			0.20			0.15			c0.28	
v/s Ratio Perm	c0.31			0.08		0.04	0.19			0.21		
v/c Ratio	1.07	0.41		0.27	0.69	0.14	0.32	0.25		0.35	0.45	
Uniform Delay, d1	28.2	22.6		21.7	25.1	20.8	7.7	7.3		7.9	8.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.62	0.59	
Incremental Delay, d2	93.6	0.5		0.5	3.8	0.1	3.0	0.3		1.9	0.8	
Delay (s)	121.9	23.1		22.2	28.9	20.9	10.7	7.6		6.8	5.9	
Level of Service	F	С		С	С	С	В	А		А	А	
Approach Delay (s)		64.8			25.6			8.1			6.0	
Approach LOS		E			С			А			А	
Intersection Summary												
HCM Average Control E	Delav		20.1	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit	0.66											
Actuated Cycle Length (80.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut			70.6%			el of Se	()		С			
			15									
Analysis Period (min)			15									

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Barrio Logan CPU 33: National Ave 8	28th S	t	Hor	izon Y	'ear Al	t 2 with	n Grad	e Sep			Coordina Plan: AM	
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ň	ሳቀ	7	γí	Þ		4	74		4	74	
Volume (vph)	106	245	18	186	599	33	102	82	118	213	307	
Turn Type	Prot		Perm	Prot		Perm		Perm	Perm		Perm	
Protected Phases	7	4		3	8		2			6		
Permitted Phases			4			2		2	6		6	
Detector Phases	7	4	4	3	8	2	2	2	6	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	35.0	35.0	8.0	35.0	27.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	12.0	40.0	40.0	24.0	52.0	36.0	36.0	36.0	36.0	36.0	36.0	
Total Split (%)	12.0%	40.0%	40.0%	24.0%	52.0%	36.0%	36.0%	36.0%	36.0%	36.0%	36.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Recall Mode	None	None	None	C-Max	None	Min	Min	Min	Min	Min	Min	
Act Effct Green (s)	8.7	33.1	33.1	26.3	50.7		28.6	28.6		28.6	28.6	
Actuated g/C Ratio	0.09	0.33	0.33	0.26	0.51		0.29	0.29		0.29	0.29	
v/c Ratio	0.74	0.23	0.04	0.59	0.85		0.37	0.18		0.89	0.50	
Control Delay	73.8	24.0	8.9	44.0	32.7		42.5	18.9		59.1	6.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	73.8	24.0	8.9	44.0	32.7		42.5	18.9		59.1	6.3	
LOS	E	С	A	D	С		D	В		E	А	
Approach Delay		37.5			35.0		33.6			33.7		
Approach LOS		D			D		С			С		
Intersection Summary												
Cycle Length: 100												
Actuated Cycle Length												
Offset: 97 (97%), Refe	erenced t	o phase	3:WBL	., Start o	of Greer	า						
Natural Cycle: 90												
Control Type: Actuate		nated										
Maximum v/c Ratio: 0												
Intersection Signal De					ntersec							
Intersection Capacity		1 83.3%			CU Lev	el of Se	ervice E					
Analysis Period (min)	15											
Splits and Phases:	33: Natio	nal Ave	& 28th	St								
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36 S		128		52 S								

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Barrio Logan CPU 33: National Ave & 2	8th St	t	Hor	izon Y	ear Alt	2 with	Grade	e Sepa		and Coordination
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR	
Lane Group Flow (vph)	115	266	20	202	788	147	89	360	334	
v/c Ratio	0.74	0.23	0.04	0.59	0.85	0.37	0.18	0.89	0.50	
Control Delay	73.8	24.0	8.9	44.0	32.7	42.5	18.9	59.1	6.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	73.8	24.0	8.9	44.0	32.7	42.5	18.9	59.1	6.3	
Queue Length 50th (ft)	73	61	0	123	436	75	16	208	4	
Queue Length 95th (ft)	#171	91	16	#238	#690	167	82	#356	67	
Internal Link Dist (ft)		590			82	359		221		
Turn Bay Length (ft)										
Base Capacity (vph)	155	1274	583	342	927	440	543	451	703	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.74	0.21	0.03	0.59	0.85	0.33	0.16	0.80	0.48	
Intersection Summary										

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	44	W	1000	1	WDIX	NDL	1001	11011	ODL	4	#
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1299	1814			1754	1509		1745	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.70	1.00		0.76	1.00
Satd. Flow (perm)	1770	3539	1583	1299	1814			1239	1509		1355	1509
Volume (vph)	106	245	18	186	599	126	33	102	82	118	213	307
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	266	20	202	651	137	36	111	89	128	232	334
RTOR Reduction (vph)	0	0	13	0	7	0	0	0	64	0	0	231
Lane Group Flow (vph)	115	266	7	202	781	0	0	147	25	0	360	103
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		6
Actuated Green, G (s)	8.7	33.1	33.1	26.3	50.7			28.6	28.6		28.6	28.6
Effective Green, g (s)	8.7	33.1	33.1	26.3	50.7			28.6	28.6		28.6	28.6
Actuated g/C Ratio	0.09	0.33	0.33	0.26	0.51			0.29	0.29		0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	154	1171	524	342	920			354	432		388	432
v/s Ratio Prot	c0.06	0.08		0.16	c0.43							
v/s Ratio Perm			0.00					0.12	0.02		c0.27	0.07
v/c Ratio	0.75	0.23	0.01	0.59	0.85			0.42	0.06		0.93	0.24
Uniform Delay, d1	44.6	24.2	22.5	32.2	21.3			28.9	25.9		34.7	27.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.44	3.25		1.00	1.00
Incremental Delay, d2	17.8	0.1	0.0	7.3	7.4			0.7	0.1		28.0	0.3
Delay (s)	62.3	24.3	22.5	39.5	28.7			42.4	84.3		62.6	27.6
Level of Service	E	С	С	D	С			D	F		E	С
Approach Delay (s)		35.1			30.9			58.2			45.8	
Approach LOS		D			С			E			D	
Intersection Summary												
HCM Average Control E	Delay		38.8	F	ICM Lev	vel of S	ervice		D			
HCM Volume to Capaci			0.86									
			400.0	0			(-)		40.0			
Actuated Cycle Length ((S)		100.0	5	sum of I	ost time	: (S)		12.0			
Actuated Cycle Length (Intersection Capacity Ut			83.3%			el of Se	· · /		12.0 E			

c Critical Lane Group

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Barrio Logan CPU 34: Boston Ave & 28th St

Horizon Year Alt 2 with Grade Separation and Coordination Timing Plan: AM Peak

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	ň	4	7*)r	1÷	3	4%	ji	4 416
Volume (vph)	250	200	150	50	80	90	720	170	880
Turn Type	Perm		Perm	Perm		Prot		Prot	
Protected Phases		4			8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phases	4	4	4	8	8	5	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	35.0	35.0	35.0	35.0	35.0	8.0	27.0	8.0	27.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	16.0	35.0	20.0	39.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	16.0%	35.0%	20.0%	39.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag						Lag	Lead	Lag	Lead
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.0	31.0	31.0	31.0	31.0	10.4	42.8	14.2	48.8
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31	0.10	0.43	0.14	0.49
v/c Ratio	0.90	0.39	0.28	0.18	0.40	0.54	0.56	0.74	0.53
Control Delay	63.8	27.6	4.5	23.2	15.3	59.0	22.2	55.2	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.3
Total Delay	63.8	27.6	4.5	23.2	15.3	59.0	22.7	55.2	15.0
LOS	E	С	А	С	В	E	С	E	В
Approach Delay		36.9			16.8		26.5		20.0
Approach LOS		D			В		С		С
Intersection Summary									
Cycle Length: 100									
Actuated Cycle Length									
Offset: 99 (99%), Refe	erenced t	o phase	2:NBT	and 6:8	SBT, Sta	art of G	reen		
Natural Cycle: 75									
Control Type: Actuated		nated							
Maximum v/c Ratio: 0.									
Intersection Signal Del					ntersec				
Intersection Capacity L		n 70.0%)		CU Lev	el of Se	ervice C		

Analysis Period (min) 15

Splits and Phases:	34: Boston Ave & 28th St		
1 ø2	▶ _{ø1}	📣 ø4	
35 s	20 s	45 s	
↓ ø6	▲ ₀5	↓ ø8	
39 s	16 s	45 s	

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	272	217	163	54	228	98	826	185	1283	
v/c Ratio	0.90	0.39	0.28	0.18	0.40	0.54	0.56	0.74	0.53	
Control Delay	63.8	27.6	4.5	23.2	15.3	59.0	22.2	55.2	14.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.3	
Total Delay	63.8	27.6	4.5	23.2	15.3	59.0	22.7	55.2	15.0	
Queue Length 50th (ft)	162	106	0	24	60	64	215	118	175	
Queue Length 95th (ft)	242	147	38	47	107	m106	m316	#193	254	
Internal Link Dist (ft)		207			577		298		234	
Turn Bay Length (ft)										
Base Capacity (vph)	399	728	715	408	719	212	1480	283	2418	
Starvation Cap Reductn	0	0	0	0	0	0	262	0	490	
Spillback Cap Reductn	0	0	5	0	0	0	0	0	164	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.68	0.30	0.23	0.13	0.32	0.46	0.68	0.65	0.67	

Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	4	r,	N.	1×		H.	作		×	44%	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1776	1509	1687	1611		1770	3447		1770	4856	
Flt Permitted	0.50	1.00	1.00	0.51	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	882	1776	1509	911	1611		1770	3447		1770	4856	
Volume (vph)	250	200	150	50	80	130	90	720	40	170	880	300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	217	163	54	87	141	98	783	43	185	957	326
RTOR Reduction (vph)	0	0	112	0	68	0	0	3	0	0	49	(
Lane Group Flow (vph)	272	217	51	54	160	0	98	823	0	185	1234	(
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	4%	2%	2%	3%	2%
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	31.0	31.0	31.0	31.0	31.0		9.0	42.0		15.0	48.0	
Effective Green, g (s)	31.0	31.0	31.0	31.0	31.0		9.0	42.0		15.0	48.0	
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31		0.09	0.42		0.15	0.48	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	273	551	468	282	499		159	1448		266	2331	
v/s Ratio Prot		0.12			0.10		0.06	c0.24		c0.10	0.25	
v/s Ratio Perm	c0.31		0.03	0.06								
v/c Ratio	1.00	0.39	0.11	0.19	0.32		0.62	0.57		0.70	0.53	
Uniform Delay, d1	34.4	27.1	24.6	25.3	26.4		43.8	22.1		40.3	18.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.16	0.86		0.95	0.73	
Incremental Delay, d2	53.1	0.5	0.1	0.3	0.4		6.5	1.5		6.9	0.8	
Delay (s)	87.6	27.6	24.7	25.6	26.8		57.3	20.6		45.4	14.0	
Level of Service	F	С	С	С	С		E	С		D	В	
Approach Delay (s)		51.9			26.6			24.5			17.9	
Approach LOS		D			С			С			В	
Intersection Summary												
HCM Average Control D			27.1	H	ICM Lev	vel of Se	ervice		С			
HCM Volume to Capacit			0.74									
Actuated Cycle Length (100.0	S	Sum of I	ost time	(S)		12.0			
Intersection Capacity Ut	ilization		70.0%	10	CU Leve	el of Ser	vice		С			
Analysis Period (min)			15									

Horizon Year Alt 2 with Grade Separation and Coordination

Kimley-Horn and Associates, Inc.

Barrio Logan CPU

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	7	仲孙	15	牛 Т»	3	41.	1	朴饰	
Volume (vph)	190	400	90	500	40	170	190	750	
Turn Type	Perm		Perm		Prot		Prot		
Protected Phases		4		8	5	2	1	6	
Permitted Phases	4		8						
Detector Phases	4	4	8	8	5	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	35.0	35.0	35.0	35.0	8.0	34.0	8.0	35.0	
Total Split (s)	50.0	50.0	50.0	50.0	8.0	34.0	16.0	42.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	8.0%	34.0%	16.0%	42.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag					Lag	Lead	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	C-Min	None	C-Min	
Act Effct Green (s)	47.2	47.2	47.2	47.2	4.4	21.3	19.4	38.4	
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.04	0.21	0.19	0.38	
v/c Ratio	0.98	0.32	0.27	0.46	0.57	0.41	0.61	0.90	
Control Delay	85.7	16.8	19.0	17.3	75.8	17.3	34.3	25.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	
Total Delay	85.7	16.8	19.0	17.3	75.8	17.3	34.3	25.4	
LOS	F	В	В	В	E	В	С	С	
Approach Delay		37.3		17.5		24.4		26.8	
Approach LOS		D		В		С		С	
Intersection Summary									
Cycle Length: 100									
Actuated Cycle Length	100								
Offset: 2 (2%), Referen		hase 2	NRT ar	d 6.SB1	Start	of Gree	m		
Natural Cycle: 100		11030 2			, otart				
Control Type: Actuated	-Coordi	nated							
Maximum v/c Ratio: 0.		natou							
Intersection Signal Dela				l,	ntersec	tion LO	S+ C		
Intersection Capacity U							ervice D		
Analysis Period (min) 1					00 100	0. 01 00			
	0								
Splits and Phases: 3	5: Main	St & 28	th St						
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	×	仲弘		×	41		H.	410		K	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	190
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.95		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1538	3219		1760	3371		1736	3109		1736	3090	
Flt Permitted	0.28	1.00		0.43	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	458	3219		788	3371		1736	3109		1736	3090	
Volume (vph)	190	400	50	90	500	190	40	170	120	190	750	26
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	435	54	98	543	207	43	185	130	207	815	28
RTOR Reduction (vph)	0	10	0	0	39	0	0	103	0	0	35	(
Lane Group Flow (vph)	207	479	0	98	711	0	43	212	0	207	1063	(
Confl. Peds. (#/hr)	10		12	12		10			72			2
Confl. Bikes (#/hr)			2			4			6			
Heavy Vehicles (%)	17%	11%	2%	2%	2%	2%	4%	4%	4%	4%	4%	31%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	47.2	47.2		47.2	47.2		3.2	20.5		20.3	37.6	
Effective Green, g (s)	47.2	47.2		47.2	47.2		3.2	20.5		20.3	37.6	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.03	0.20		0.20	0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	216	1519		372	1591		56	637		352	1162	
v/s Ratio Prot	210	0.15		012	0.21		0.02	0.07		c0.12	c0.34	
v/s Ratio Perm	c0.45	0.10		0.12	0.21		0.02	0.07		00.12	00.01	
v/c Ratio	0.96	0.32		0.26	0.45		0.77	0.33		0.59	0.91	
Uniform Delay, d1	25.5	16.4		15.9	17.7		48.0	33.9		36.1	29.7	
Progression Factor	1.00	1.00		1.00	1.00		0.98	0.82		0.71	0.52	
Incremental Delay, d2	48.9	0.1		0.4	0.2		46.0	1.4		2.3	11.7	
Delay (s)	74.3	16.5		16.3	17.9		93.1	29.2		27.9	27.1	
Level of Service	74.5 E	B		B	В		50.1	C		C	C	
Approach Delay (s)		33.7		U	17.7			36.9		0	27.2	
Approach LOS		00.7 C			B			D.5			C	
Intersection Summary		U						U			U	
			07.0						С			
HCM Average Control D			27.2 0.90	F		vel of Se	ervice		C			
HCM Volume to Capacit					um of I	a at time -	(\mathbf{a})		8.0			
Actuated Cycle Length (100.0			ost time						
Intersection Capacity Ut Analysis Period (min)	inzation		78.7%	10	JU Leve	el of Sei	vice		D			
MILAIVSIS PERIOU (IIIIII)			10									

c Critical Lane Group

Synchro 6 Report

3/4/2011

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Synchro 6 Report

3/4/2011

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Timing Plan: AM Peak 35: Main St & 28th St ۶ € + ŧ 1 ↘ -+ Lane Group EBL EBT WBL WBT NBL NBT SBL SBT Lane Group Flow (vph) 207 489 98 750 43 315 207 1098 v/c Ratio 0.98 0.32 0.27 0.46 0.57 0.41 0.61 0.90 Control Delay 25.4 85.7 16.8 19.0 17.3 75.8 17.3 34.3 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.1 0.0 0.0 Total Delay 85.7 16.8 19.0 17.3 75.8 17.3 34.3 25.4 Queue Length 50th (ft) 128 96 37 150 27 54 128 296 Queue Length 95th (ft) #281 Internal Link Dist (ft) 134 76 201 #83 63 209 #461 327 314 279 298 Turn Bay Length (ft) Base Capacity (vph) 212 1529 369 1631 75 1024 338 1220 Starvation Cap Reductn 0 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 3 0 80 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Reduced v/c Ratio 0.98 0.32 0.27 0.46 0.57 0.33 0.61 0.90

Horizon Year Alt 2 with Grade Separation and Coordination

Intersection Summary

Barrio Logan CPU

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Barrio Logan CPU 36: Harbor Dr & 28th St

Horizon Year Alt 2 with Grade Separation and Coordination Timing Plan: AM Peak

Synchro 6 Report 3/4/2011

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR	
Lane Configurations	ሻሻ	<u> </u>	74	24	**	7	4.	4.54	Ť	ř	
Volume (vph)	70	670	4	18	943	115	6	339	15	22	
Turn Type	Prot		Perm	Prot		Perm		Split		Perm	
Protected Phases	5	2		1	6		8	4	4		
Permitted Phases			2			6				4	
Detector Phases	5	2	2	1	6	6	8	4	4	4	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	35.0	8.0	8.0	8.0	
Total Split (s)	8.0	38.0	38.0	9.0	39.0	39.0	35.0	18.0	18.0	18.0	
Total Split (%)	8.0%	38.0%	38.0%	9.0%	39.0%	39.0%	35.0%	18.0%	18.0%	18.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	
Act Effct Green (s)	5.7	60.8	60.8	5.0	56.6	56.6	15.7	13.6	13.6	13.6	
Actuated g/C Ratio	0.06	0.61	0.61	0.05	0.57	0.57	0.16	0.14	0.14	0.14	
v/c Ratio	0.40	0.35	0.00	0.23	0.53	0.15	0.03	0.80	0.06	0.11	
Control Delay	52.9	16.1	14.0	52.4	19.7	4.7	24.4	32.4	18.1	5.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	16.1	14.0	52.4	19.7	4.7	24.4	32.4	18.1	5.9	
LOS	D	В	В	D	В	A	С	С	В	A	
Approach Delay		19.5			18.7		24.4		30.3		
Approach LOS		В			В		С		С		
Intersection Summary											
Cycle Length: 100											
Actuated Cycle Length:	100										
Offset: 2 (2%), Reference	ced to p	phase 2	:EBT an	d 6:WE	BT, Star	of Gree	en				
Natural Cycle: 90											
Control Type: Actuated-	-Coordi	nated									
Maximum v/c Ratio: 0.8											
Intersection Signal Dela	y: 21.0			1	ntersec	tion LO	S: C				
	CE	- 52 00/			CILL -	el of Se	mileo A				
Intersection Capacity Ut	tilizatioi	1 53.0%	0		CU Lev	er or Se	IVICE A				

Splits and Phases: 36: Harbor [Dr & 28th St		
→ ø2	💉 ø1	* ø4	◄ ∞8
38 s	9 s	18 s	35 s
🔺 ø5 🗲 ø6			
8 s 39 s			

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	76	728	4	20	1025	125	9	368	16	24
v/c Ratio	0.40	0.35	0.00	0.23	0.53	0.15	0.03	0.80	0.06	0.11
Control Delay	52.9	16.1	14.0	52.4	19.7	4.7	24.4	32.4	18.1	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	16.1	14.0	52.4	19.7	4.7	24.4	32.4	18.1	5.9
Queue Length 50th (ft)	24	54	0	13	148	0	4	108	7	4
Queue Length 95th (ft)	#55	266	8	37	#403	38	15	m118	m9	m6
Internal Link Dist (ft)		247			310		22		224	
Turn Bay Length (ft)	150			75						210
Base Capacity (vph)	189	2070	817	86	1945	854	549	471	256	233
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.35	0.00	0.23	0.53	0.15	0.02	0.78	0.06	0.10

Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal.

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Kimley-Horn and Associates, Inc.

36: Harbor Dr & 28t	n St							-	Т	iming P	lan: AM	l Peak
	≯	-	\mathbf{F}	•	+	•	•	Ť	۴	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	<u> </u>	ž	×	**	7		1		44	4	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.94		0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	3303	3406	1401	1719	3438	1450		1763		3367	1827	1516
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (perm)	3303	3406	1401	1719	3438	1450		1763		3367	1827	1516
Volume (vph)	70	670	4	18	943	115	0	6	2	339	15	22
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	728	4	20	1025	125	0	7	2	368	16	24
RTOR Reduction (vph)	0	0	2	0	0	58	0	2	0	0	0	21
Lane Group Flow (vph)	76	728	2	20	1025	67	0	7	0	368	16	3
Confl. Peds. (#/hr)			69			80						
Confl. Bikes (#/hr)						3			6			7
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	Ū	-	2	·	Ű	6	Ū	Ű				4
Actuated Green, G (s)	4.6	56.0	56.0	2.0	53.4	53.4		12.4		13.6	13.6	13.6
Effective Green, q (s)	4.6	56.0	56.0	2.0	53.4	53.4		12.4		13.6	13.6	13.6
Actuated g/C Ratio	0.05	0.56	0.56	0.02	0.53	0.53		0.12		0.14	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	152	1907	785	34	1836	774		219		458	248	206
v/s Ratio Prot	0.02	c0.21	100	0.01	c0.30			c0.00		c0.11	0.01	200
v/s Ratio Perm	0.02	00.21	0.00	0.01	00.00	0.05		00.00		00.11	0.01	0.00
v/c Ratio	0.50	0.38	0.00	0.59	0.56	0.09		0.03		0.80	0.06	0.02
Uniform Delay, d1	46.6	12.3	9.7	48.6	15.5	11.4		38.5		41.9	37.7	37.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.55	0.47	0.36
Incremental Delay, d2	2.6	0.6	0.0	23.4	1.2	0.2		0.1		5.9	0.1	0.0
Delay (s)	49.2	12.9	9.7	72.0	16.7	11.6		38.6		29.0	17.8	13.3
Level of Service	10.2	B	A	72.0 E	10.7 B	B		D		20.0 C	B	B
Approach Delay (s)	-	16.3		-	17.1			38.6			27.7	-
Approach LOS		B			B			D			C	
		5			5			5			5	
Intersection Summary												
HCM Average Control D			18.7	F	ICM Le	vel of Se	ervice		В			
HCM Volume to Capacit			0.52									_
Actuated Cycle Length (100.0			ost time	· · /		16.0			
Intersection Capacity Ut	ilization		53.0%	10	CU Lev	el of Sei	vice		Α			
Analysis Period (min)			15									

Horizon Year Alt 2 with Grade Separation and Coordination

c Critical Lane Group

Barrio Logan CPU

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	_#	-	1	1	۲	ŧ	¥	
ane Group	EBL	EBT	NBL	NBT	NBR	SBT	SWL	
ane Configurations	10	τ.	35	Ŷ	12	44T»	3M	
'olume (vph)	25	235	70	505	55	694	735	
Furn Type	Perm		Prot		custom			
Protected Phases		4	5	2		6	3	
ermitted Phases	4		_		23			
Detector Phases	4	4	5	2	23	6	3	
Ainimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	36.0	36.0	27.0	27.0		36.0	27.0	
Fotal Split (s)	36.0	36.0	27.0	63.0	94.0	36.0	31.0	
Fotal Split (%)					72.3%	27.7%		
Yellow Time (s)	3.5 0.5	3.5 0.5	3.5 0.5	3.5 0.5		3.5 0.5	3.5 0.5	
Lead/Lag	Lag	Lag	Lead	0.5		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	Min	Min		Min		
Act Effct Green (s)	17.9	17.9	9.5	36.8	68.7	23.2	27.8	
Actuated g/C Ratio	0.19	0.19	0.10	0.39	0.72	0.24	0.29	
/c Ratio	0.30	0.72	0.44	0.78	0.03	0.73	0.90	
Control Delay	37.0	49.7	52.0	34.6	4.7	37.6	48.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	37.0	49.7	52.0	34.6	4.7	37.6	48.2	
OS	D	D	D	С	А	D	D	
Approach Delay		46.2		33.9		37.6	48.2	
Approach LOS		D		С		D	D	
ntersection Summary								
Cycle Length: 130								
Actuated Cycle Length	n: 94.8							
latural Cycle: 130								
Control Type: Actuated		dinated						
Maximum v/c Ratio: 0								
ntersection Signal De						tion LOS		
ntersection Capacity I		ז 72.3% 1	1	I	CU Lev	el of Se	rvice C	
Analysis Period (min)	15							
		~ ~ ~						
Splits and Phases:	39: 32nd	St & W	abash S					
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				31 s			00	

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

Barrio	Logan CPU	
39: 32r	nd St & Wabas	sh S

Horizon Year Alt 2 with Grade Separation and Coordination Timing Plan: AM Peak

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Lane Group	EBL	EBT	NBL	NBT	NBR	SBT	SWL
Lane Group Flow (vph)	98	255	76	549	60	871	881
v/c Ratio	0.30	0.72	0.44	0.78	0.03	0.73	0.90
Control Delay	37.0	49.7	52.0	34.6	4.7	37.6	48.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	49.7	52.0	34.6	4.7	37.6	48.2
Queue Length 50th (ft)	50	144	43	279	4	173	260
Queue Length 95th (ft)	110	263	105	470	14	265	#544
Internal Link Dist (ft)		174		613		1629	472
Turn Bay Length (ft)							
Base Capacity (vph)	524	554	371	920	2098	1527	979
Starvation Cap Reductn	0	0	0	13	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.46	0.20	0.61	0.03	0.57	0.90
Intersection Summarv							

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Barrio Logan CPU 39: 32nd St & Waba	ish St		Hor	izon Y	ear Alt	2 with	Grade	e Sepa			Coordina Plan: AM I	
	۶	_#	-	•	1	۲	Ŧ	~	¥	~	t	
Movement	EBL2	EBL	EBT	NBL	NBT	NBR	SBT	SBR	SWL	SWR	SWR2	
Lane Configurations		25	To	74	t	77	牛牛 荪		24			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0		4.0			
Lane Util. Factor		1.00	1.00	1.00	1.00	0.88	0.91		0.97			
Frt		1.00	1.00	1.00	1.00	0.85	0.98		0.99			
Flt Protected		0.95	1.00	0.95	1.00	1.00	1.00		0.96			
Satd. Flow (prot)		1760	1863	1719	1810	2707	4859		3343			
Flt Permitted		0.95	1.00	0.95	1.00	1.00	1.00		0.96			
Satd. Flow (perm)		1760	1863	1719	1810	2707	4859		3343			
Volume (vph)	65	25	235	70	505	55	694	108	735	65	10	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	71	27	255	76	549	60	754	117	799	71	11	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	98	255	76	549	60	871	0	881	0	0	
Heavy Vehicles (%)	2%	4%	2%	5%	5%	5%	5%	2%	4%	4%	4%	
Turn Type	Perm	Perm		Prot		ustom						
Protected Phases			4	5	2		6		3			
Permitted Phases	4	4				23						
Actuated Green, G (s)		17.9	17.9	9.5	36.8	68.6	23.3		27.8			
Effective Green, g (s)		17.9	17.9	9.5	36.8	68.6	23.3		27.8			
Actuated g/C Ratio		0.19	0.19	0.10	0.39	0.73	0.25		0.29			
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0			
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0			
Lane Grp Cap (vph)		333	353	173	705	1965	1198		983			
v/s Ratio Prot			c0.14	0.04	c0.30		0.18		c0.26			
v/s Ratio Perm		0.06				0.02						
v/c Ratio		0.29	0.72	0.44	0.78	0.03	0.73		0.90			
Uniform Delay, d1		32.9	36.0	40.0	25.3	3.6	32.7		32.0			
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.5	7.1	1.8	5.4	0.0	2.2		10.6			
Delay (s)		33.4	43.1	41.8	30.7	3.6	34.9		42.6			
Level of Service		С	D	D	С	A	С		D			
Approach Delay (s)			40.4		29.6		34.9		42.6			
Approach LOS			D		С		С		D			
Intersection Summary												
HCM Average Control E	Delay		36.7	H	ICM Lev	vel of S	ervice		D			
HCM Volume to Capaci			0.81									
Actuated Cycle Length (s)		94.5	S	Sum of l	ost time	(s)		12.0			
Intersection Capacity Ut		1	72.3%	10	CU Leve	el of Sei	vice		С			
Analysis Period (min)			15									

Analysis Period (min) c Critical Lane Group

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Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al2 AM with Improvements without LRT.sy7

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Barrio Logan CPU 40: Harbor Dr & 32	2nd St		Но	rizon Y	'ear Al	t 2 with	Grad	le Sep		n and (Timing I		
	۶	+	7	4	+	•	•	t	*	1	ţ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	44	r.	J.	**	7	H	44	٣	ž	44	ř
Volume (vph)	90	641	140	300	756	390	30	160	30	130	1040	60
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phases	5	2	3	1	6	6	3	8	8	7	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0	20.0	8.0	20.0	20.0	8.0	8.0	8.0
Total Split (s)	12.0	26.0	8.0	24.0	38.0	38.0	8.0	26.0	26.0	19.0	37.0	37.0
Total Split (%)	12.6%	27.4%	8.4%	25.3%	40.0%	40.0%	8.4%	27.4%	27.4%	20.0%	38.9%	38.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	Max	None	None	None	None	None	Max	Max	Max
Act Effct Green (s)	7.8	21.4	25.4	20.0	35.8	35.8	4.0	22.0	22.0	15.0	33.0	33.0
Actuated g/C Ratio	0.08	0.23	0.27	0.21	0.38	0.38	0.04	0.23	0.23	0.16	0.35	0.35
v/c Ratio	0.71	0.90	0.33	0.91	0.64	0.51	0.45	0.22	0.09	0.52	0.94	0.11
Control Delay	69.9	51.1	10.4	68.0	27.6	4.6	64.6	30.3	10.9	44.1	45.8	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	51.1	10.4	68.0	27.6	4.6	64.6	30.3		44.1	45.8	6.2
LOS	E	D	В	E	С	А	E	С		D	D	A
Approach Delay		46.5			29.8			32.4			43.7	
Approach LOS		D			С			С			D	
Intersection Summary												
Cycle Length: 95												
Actuated Cycle Length	n: 94.4											
Natural Cycle: 90												
Control Type: Semi Ac	ct-Uncool	rd										
Maximum v/c Ratio: 0												
Intersection Signal De	lay: 38.4			1	ntersec	tion LOS	S: D					
Intersection Capacity I		<mark>ז 79.8%</mark> ו		1	CU Lev	el of Se	rvice D					
Analysis Period (min)	15											

Splits and Phases: 40: Harbor Dr & 32nd St

• ø2		🖌 ø1	*	ø3	🔹 ø4		
26 s		24 s	8 s		37 s		
⊅ _	≁ ø6		1	ø7		1 ø8	
12 s	38 s		19:			26 s	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Group Flow (vph)	98	697	152	326	822	424	33	174	33	141	1130	6
v/c Ratio	0.71	0.90	0.33	0.91	0.64	0.51	0.45	0.22	0.09	0.52	0.94	0.1
Control Delay	69.9	51.1	10.4	68.0	27.6	4.6	64.6	30.3	10.9	44.1	45.8	6.
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
Total Delay	69.9	51.1	10.4	68.0	27.6	4.6	64.6	30.3	10.9	44.1	45.8	6.
Queue Length 50th (ft)	58	214	22	194	218	0	20	44	0	79	344	
Queue Length 95th (ft)	#134	#312	51	#355	286	62	#58	73	24	140	#483	2
Internal Link Dist (ft)		710			294			151			613	
Turn Bay Length (ft)	230		200	200		200				200		
Base Capacity (vph)	142	796	456	357	1281	836	73	801	374	273	1202	58
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	(
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.69	0.88	0.33	0.91	0.64	0.51	0.45	0.22	0.09	0.52	0.94	0.1

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Synchro 6 Report

3/4/2011

40: Harbor Dr & 32n	d St		1101	2011 1			oraa	o oopt			Plan: AN	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ሳቀ	r,	λ.	44	7	¥.	44	ř	×	44	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1519	1687	3374	1509	1719	3438	1496	1719	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1519	1687	3374	1509	1719	3438	1496	1719	3438	1538
Volume (vph)	90	641	140	300	756	390	30	160	30	130	1040	60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	697	152	326	822	424	33	174	33	141	1130	65
RTOR Reduction (vph)	0	0	48	0	0	265	0	0	25	0	0	42
Lane Group Flow (vph)	98	697	104	326	822	159	33	174	8	141	1130	23
Confl. Bikes (#/hr)			3						16			
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		om+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	6.4	21.4	25.4	20.8	35.8	35.8	4.0	22.0	22.0	15.0	33.0	33.0
Effective Green, g (s)	6.4	21.4	25.4	20.8	35.8	35.8	4.0	22.0	22.0	15.0	33.0	33.0
Actuated g/C Ratio	0.07	0.22	0.27	0.22	0.38	0.38	0.04	0.23	0.23	0.16	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	116	773	405	369	1269	567	72	794	346	271	1192	533
v/s Ratio Prot	0.06	c0.20	0.01	c0.19	0.24		0.02	0.05		c0.08	c0.33	
v/s Ratio Perm			0.06			0.11			0.01			0.01
v/c Ratio	0.84	0.90	0.26	0.88	0.65	0.28	0.46	0.22	0.02	0.52	0.95	0.04
Uniform Delay, d1	43.9	35.9	27.5	36.0	24.5	20.7	44.5	29.6	28.3	36.8	30.3	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.0	13.7	0.3	25.0	1.1	0.3	4.6	0.1	0.0	7.0	16.2	0.1
Delay (s)	83.9	49.6	27.8	61.1	25.6	21.0	49.1	29.8	28.3	43.8	46.5	20.8
Level of Service	F	D	С	E	С	С	D	С	С	D	D	С
Approach Delay (s)		49.6			31.7			32.2			45.0	
Approach LOS		D			С			С			D	
Intersection Summary												
HCM Average Control D	elay		40.2	H	ICM Le	vel of Se	ervice		D			
HCM Volume to Capacit			0.91									
Actuated Cycle Length (s)		95.2			ost time			16.0			
Intersection Capacity Ut	ilizatior	1 I	79.8%	10	CU Lev	el of Sei	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

Horizon Year Alt 2 with Grade Separation and Coordination

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Barrio Logan CPU

42: I-5 SB off-ram	J p & 28th	n St	Hor		Timing Plan: AM Pea
	\rightarrow	t	ŧ		
Lane Group	EBR	NBT	SBT	ø4	
Lane Configurations	7	<u> </u>	444		
Volume (vph)	933	1100	417		
Turn Type	custom				
Protected Phases		2	6	4	
Permitted Phases	46				
Detector Phases	46	2	6		
Minimum Initial (s)		4.0	4.0	4.0	
Minimum Split (s)		20.0	20.0	20.0	
Total Split (s)	100.0	50.0	50.0	50.0	
Total Split (%)	100.0%	50.0%	50.0%	50%	
Yellow Time (s)		3.5	3.5	3.5	
All-Red Time (s)		0.5	0.5	0.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode		C-Max	C-Max	None	
Act Effct Green (s)	100.0	72.9	72.9		
Actuated g/C Ratio	1.00	0.73	0.73		
v/c Ratio	0.63	0.46	0.12		
Control Delay	1.9	1.8	0.9		
Queue Delay	0.1	0.1	0.0		
Total Delay	1.9	1.9	0.9		
LOS	A	A	А		
Approach Delay		1.9	0.9		
Approach LOS		A	A		
Intersection Summar	/				
Cycle Length: 100	,				
Actuated Cycle Lengt	h: 100				
Offset: 91 (91%), Ref		o phase	2:NBT	and 6.S	BT. Start of Green
Natural Cycle: 50		- p.1.2.00			
Control Type: Actuate	ed-Coordi	nated			
Maximum v/c Ratio: (
Intersection Signal De				h	ntersection LOS: A
Intersection Capacity		n 72.5%)		CU Level of Service C
Analysis Period (min)					

Splits and Phases: 42: I-5 SB off-ramp & 28th St

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50 s	50 s
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50 s	

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Barrio Logan CPU
42: I-5 SB off-ramp & 28th St

Horizon Year Alt 2 with Grade Separation and Coordination Timing Plan: AM Peak

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Lane Group	EBR	NBT	SBT
Lane Group Flow (vph)	1014	1196	453
v/c Ratio	0.63	0.46	0.12
Control Delay	1.9	1.8	0.9
Queue Delay	0.1	0.1	0.0
Total Delay	1.9	1.9	0.9
Queue Length 50th (ft)	0	4	1
Queue Length 95th (ft)	0	m125	m26
Internal Link Dist (ft)		234	359
Turn Bay Length (ft)			
Base Capacity (vph)	1611	2578	3705
Starvation Cap Reductn		402	0
Spillback Cap Reductn	47	0	148
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.65	0.55	0.13
Intersection Summary			
m Volume for 95th per	centile	queue i	s meter

42: I-5 SB off-ramp	& 28th	St					Timing Plan: AM Pea
	۶	\rightarrow	1	t.	Ŧ	1	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		p#		44	***		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0		
Lane Util. Factor		1.00		0.95	0.91		
Frt		0.86		1.00	1.00		
Flt Protected		1.00		1.00	1.00		
Satd. Flow (prot)		1611		3539	5085		
Flt Permitted		1.00		1.00	1.00		
Satd. Flow (perm)		1611		3539	5085		
Volume (vph)	0	933	0	1100	417	0	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	1014	0	1196	453	0	
RTOR Reduction (vph)	0	0	0	0	0	0	
Lane Group Flow (vph)	0	1014	0	1196	453	0	
Turn Type	(ustom					
Protected Phases	-			2	6		
Permitted Phases		46		-			
Actuated Green, G (s)		100.0		72.9	72.9		
Effective Green, g (s)		100.0		72.9	72.9		
Actuated g/C Ratio		1.00		0.73	0.73		
Clearance Time (s)				4.0	4.0		
Vehicle Extension (s)				3.0	3.0		
Lane Grp Cap (vph)		1611		2580	3707		
v/s Ratio Prot		1011		0.34	0.09		
v/s Ratio Perm		c0.63		0.01	0.00		
v/c Ratio		0.63		0.46	0.12		
Uniform Delay, d1		0.0		5.5	4.0		
Progression Factor		1.00		0.17	0.14		
Incremental Delay, d2		0.8		0.5	0.0		
Delay (s)		0.8		1.4	0.6		
Level of Service		A		A	A		
Approach Delay (s)	0.8	~		1.4	0.6		
Approach LOS	A			A	A		
Intersection Summary							
HCM Average Control D	elay		1.0	F	ICM Lev	el of Service	A
HCM Volume to Capacit	ty ratio		0.63				
Actuated Cycle Length (s)		100.0	S	Sum of lo	ost time (s)	0.0
Intersection Capacity Ut	ilizatior	I	72.5%	10	CU Leve	el of Service	С
Analysis Period (min)			15				
c Critical Lane Group							

Horizon Year Alt 2 with Grade Separation and Coordination

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Barrio Logan CPU

Synchro 6 Report 3/4/2011

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	7	4	74	14	t	7	H	作汤	34	4 12	
Volume (vph)	300	400	290	110	270	275	120	1000	120	550	
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		
Protected Phases		4			8			2		6	
Permitted Phases	4		4	8		8	2		6		
Detector Phases	4	4	4	8	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	48.0	48.0	48.0	48.0	
Total Split (%)	43.5%	43.5%	43.5%			43.5%		56.5%			
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None			C-Min			
Act Effct Green (s)	32.3	32.3	32.3	32.3	32.3	32.3	44.7	44.7	44.7	44.7	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.53	0.53	0.53	0.53	
v/c Ratio	0.97	0.62	0.42	0.54	0.41	0.47	0.78	0.71	1.10	0.63	
Control Delay	71.8	25.7	6.8	30.8	21.4	17.8	46.1	14.4	120.2	4.0	
Queue Delay	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.7	
Total Delay	74.9	25.7	6.8	30.8	21.4	17.8	46.1	14.8	120.2	4.7	
LOS	E	С	A	С	С	В	D	В	F	A	
Approach Delay		35.1			21.4			17.9		17.4	
Approach LOS		D			С			В		В	
Intersection Summary											
Cycle Length: 85											
Actuated Cycle Length	n: 85										
Offset: 82 (96%), Refe	erenced t	o phase	2:NBT	L and 6:	SBTL,	Start of	Green				
Natural Cycle: 80											
Control Type: Actuate		nated									
Maximum v/c Ratio: 1											
Intersection Signal De						tion LO					
Intersection Capacity	Jtilizatio	n 81.6%		I	CU Lev	el of Se	ervice D				
Analysis Period (min)	15										
o											
Splits and Phases:	14: Natio	nal Ave	& Cesa	ar E. Ch	avez Pl	wy					

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48 s	37 s
↓ ø6	● Ø8
48 s	37 s

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	326	435	315	120	293	299	130	1196	130	1044	
v/c Ratio	0.97	0.62	0.42	0.54	0.41	0.47	0.78	0.71	1.10	0.63	
Control Delay	71.8	25.7	6.8	30.8	21.4	17.8	46.1	14.4	120.2	4.0	
Queue Delay	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.7	
Total Delay	74.9	25.7	6.8	30.8	21.4	17.8	46.1	14.8	120.2	4.7	
Queue Length 50th (ft)	165	181	25	48	111	88	48	224	~84	21	
Queue Length 95th (ft)	#333	277	82	107	178	160 r	n#158	203	m#132	m46	
Internal Link Dist (ft)		608			780			301		299	
Turn Bay Length (ft)											
Base Capacity (vph)	342	723	763	229	723	655	167	1681	118	1663	
Starvation Cap Reductn	0	0	0	0	0	0	0	140	0	282	
Spillback Cap Reductn	6	0	0	0	0	11	0	10	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.97	0.60	0.41	0.52	0.41	0.46	0.78	0.78	1.10	0.76	
Intersection Summary Volume exceeds cap 				tically ir	nfinite.						

Horizon Year Alt 2 with Grade Separation and Coordination

Timing Plan: PM Peak

Queue shown is maximum after two cycles.

14: National Ave & Cesar E. Chavez Pkwy

Barrio Logan CPU

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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14: National Ave & 0	Cesar I	E. Cha	avez P	kwy					Т	iming F	Plan: PM	l Peak
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	4	7*	74	÷	7	μ	41>		7	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3179		1530	2863	
Flt Permitted	0.47	1.00	1.00	0.31	1.00	1.00	0.19	1.00		0.14	1.00	
Satd. Flow (perm)	873	1863	1583	573	1863	1583	323	3179		229	2863	
Volume (vph)	300	400	290	110	270	275	120	1000	100	120	550	410
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	435	315	120	293	299	130	1087	109	130	598	446
RTOR Reduction (vph)	0	0	150	0	0	41	0	9	0	0	156	0
Lane Group Flow (vph)	326	435	165	120	293	258	130	1187	0	130	888	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	32.3	32.3	32.3	32.3	32.3	32.3	44.7	44.7		44.7	44.7	
Effective Green, g (s)	32.3	32.3	32.3	32.3	32.3	32.3	44.7	44.7		44.7	44.7	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.53	0.53		0.53	0.53	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	332	708	602	218	708	602	170	1672		120	1506	
v/s Ratio Prot		0.23			0.16			0.37			0.31	
v/s Ratio Perm	c0.37		0.10	0.21		0.16	0.40			c0.57		
v/c Ratio	0.98	0.61	0.27	0.55	0.41	0.43	0.76	0.71		1.08	0.59	
Uniform Delay, d1	26.1	21.3	18.2	20.7	19.4	19.5	16.0	15.2		20.2	13.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.77		0.48	0.29	
Incremental Delay, d2	44.3	1.6	0.2	3.0	0.4	0.5	26.0	2.4		92.4	1.2	
Delay (s)	70.3	22.9	18.5	23.6	19.8	20.0	37.9	14.1		102.1	5.1	
Level of Service	E	С	В	С	В	С	D	В		F	A	
Approach Delay (s)		36.0			20.5			16.5			15.9	
Approach LOS		D			С			В			В	
Intersection Summary												
HCM Average Control E	Delay		21.9	H	ICM Le	vel of S	ervice		С			
HCM Volume to Capaci	ty ratio		1.04									
Actuated Cycle Length ((s)		85.0	S	um of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		81.6%	10	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

С	Critical	Lane	Group	
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Horizon Year Alt 2 with Grade Separation and Coordination Barrio Logan CPU Timing Plan: PM Peak 15: Newton Ave & Cesar E. Chavez Pkwy

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	ž	ţ,	N.	Ъ	ž	41.	H	朴饰	,
Volume (vph)	120	130	90	70	40	790	170	910	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	31.0	31.0	31.0	31.0	54.0	54.0	54.0	54.0	
Total Split (%)					63.5%				
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None		C-Min				
Act Effct Green (s)	15.6	15.6	15.6	15.6	61.4	61.4	61.4	61.4	
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.72	0.72	0.72	0.72	
v/c Ratio	0.71	0.62	0.54	0.54	0.17	0.40	0.59	0.46	
Control Delay	52.7	33.6	40.9	18.9	5.0	3.9	16.1	5.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	
Total Delay	52.7	33.6	40.9	18.9	5.0	4.1	16.1	5.4	
LOS	D	С	D	В	A	A	В	A	
Approach Delay		40.8		25.7		4.1		7.0	
Approach LOS		D		С		A		A	
Intersection Summary									
Cycle Length: 85									
Actuated Cycle Length	: 85								
Offset: 11 (13%), Refe	renced t	o phase	2:NBT	L and 6	:SBTL,	Start of	Green		
Natural Cycle: 80									
Control Type: Actuated	I-Coordii	nated							
Maximum v/c Ratio: 0.	71								
Intersection Signal Del					ntersec				
Intersection Capacity L		1 64.8%		1	CU Lev	el of Se	ervice C		
Analysis Period (min) 1	15								

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy

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54 s	31 s
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54 s	31 s

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Barrio Logan CPU 15: Newton Ave & Co	esar E	. Cha			ear Alt	2 with	Grad	e Sepa	aration and Coordination Timing Plan: PM Pea
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	130	217	98	217	43	924	185	1054	
v/c Ratio	0.71	0.62	0.54	0.54	0.17	0.40	0.59	0.46	
Control Delay	52.7	33.6	40.9	18.9	5.0	3.9	16.1	5.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	
Total Delay	52.7	33.6	40.9	18.9	5.0	4.1	16.1	5.4	
Queue Length 50th (ft)	66	91	48	48	5	65	31	82	
Queue Length 95th (ft)	114	144	87	102	m9	56 r	n#178	151	
Internal Link Dist (ft)		598		178		305		301	
Turn Bay Length (ft)									
Base Capacity (vph)	314	583	314	613	256	2307	311	2310	
Starvation Cap Reductn	0	0	0	0	0	537	0	599	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.41	0.37	0.31	0.35	0.17	0.52	0.59	0.62	
Intersection Summary									
# 95th percentile volun	ne exce	eds ca	pacity, o	queue m	ay be l	onger.			
Queue shown is maxi	mum a	fter two	cycles						
m Volume for 95th per	centile	queue i	s meter	ed by u	pstream	n signal.			

Barrio Logan CPU 15: Newton Ave & C	esar E	. Cha				. Z WIU		5 0000			Coordin Plan: PM	
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ž	ĥ		×	ħ		Ϋ́	作る		ž	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.90		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1765		1770	1681		1612	3189		1612	3193	
Flt Permitted	0.40	1.00		0.40	1.00		0.24	1.00		0.29	1.00	
Satd. Flow (perm)	750	1765		750	1681		412	3189		484	3193	
Volume (vph)	120	130	70	90	70	130	40	790	60	170	910	60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	141	76	98	76	141	43	859	65	185	989	65
RTOR Reduction (vph)	0	27	0	0	94	0	0	4	0	0	4	0
Lane Group Flow (vph)	130	190	0	98	123	0	43	920	0	185	1050	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.6	15.6		15.6	15.6		61.4	61.4		61.4	61.4	
Effective Green, g (s)	15.6	15.6		15.6	15.6		61.4	61.4		61.4	61.4	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.72	0.72		0.72	0.72	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	138	324		138	309		298	2304		350	2306	
v/s Ratio Prot		0.11			0.07			0.29			0.33	
v/s Ratio Perm	c0.17			0.13			0.10			c0.38		
v/c Ratio	0.94	0.59		0.71	0.40		0.14	0.40		0.53	0.46	
Uniform Delay, d1	34.3	31.7		32.6	30.6		3.7	4.6		5.3	4.9	
Progression Factor	1.00	1.00		1.00	1.00		0.62	0.63		0.81	0.79	
Incremental Delay, d2	58.8	2.7		15.8	0.8		1.0	0.5		5.1	0.6	
Delay (s)	93.1	34.5		48.4	31.4		3.2	3.4		9.4	4.4	
Level of Service	F	С		D	С		Α	А		А	Α	
Approach Delay (s)		56.4			36.7			3.4			5.2	
Approach LOS		E			D			А			А	
Intersection Summary												
HCM Average Control E	Delay		14.2	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.61									
Actuated Cycle Length			85.0	S	Sum of I	ost time	e (s)		8.0			
Intersection Capacity Ut	ilization		64.8%	10	CU Lev	el of Se	rvice		С			
Analysis Period (min) c Critical Lane Group			15									

c Critical Lane Group

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Barrio Logan CPU	Horizon Year Alt 2 with Grade Separa	tion and Coordination
16: Main St & Cesar E. Chavez	Pkwy	Timing Plan: PM Peak

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	ž	ţ,	N.	Ŷ	ž	41.	H	朴ト	_
Volume (vph)	120	290	70	250	85	640	250	540	
Turn Type	Perm		Perm		Perm		Perm		
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		
Detector Phases	4	4	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	31.0	31.0	31.0	31.0	54.0	54.0	54.0	54.0	
Total Split (%)						63.5%			
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None			C-Min			
Act Effct Green (s)	20.8	20.8	20.8	20.8	56.2	56.2	56.2	56.2	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.66	0.66	0.66	0.66	
v/c Ratio	0.64	0.75	0.47	0.60	0.32	0.45	0.95	0.45	
Control Delay	41.8	39.5	35.5	33.0	12.0	8.0	56.7	4.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.1	
Total Delay	41.8	39.5	35.5	33.0	12.0	9.3	56.7	4.1	
LOS	D	D	D	С	В	A	E	A	
Approach Delay		40.2		33.5		9.6		16.4	
Approach LOS		D		С		A		В	
Intersection Summary									
Cycle Length: 85									
Actuated Cycle Length	: 85								
Offset: 3 (4%), Referer	nced to p	hase 2	NBTL a	and 6:SE	BTL, Sta	art of G	reen		
Natural Cycle: 90									
Control Type: Actuated		nated							
Maximum v/c Ratio: 0.									
Intersection Signal Del						tion LO			
Intersection Capacity L		1 75.2%			CU Lev	el of Se	ervice D		
Analysis Period (min) 1	15								

Splits and Phases:	16: Main St & Cesar E. Chavez Pkwy	
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54 s	31 s
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54 s	31 s

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Barrio Logan CPU	Horizon Year Alt 2 with Grade Separation and Coordination
16: Main St & Cesar E. Chavez Pl	wy Timing Plan: PM Peak

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Group Flow (vph)	130	342	76	272	92	892	272	891	
v/c Ratio	0.64	0.75	0.47	0.60	0.32	0.45	0.95	0.45	
Control Delay	41.8	39.5	35.5	33.0	12.0	8.0	56.7	4.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.1	
Total Delay	41.8	39.5	35.5	33.0	12.0	9.3	56.7	4.1	
Queue Length 50th (ft)	63	169	35	131	18	91	93	28	
Queue Length 95th (ft)	113	236	71	186	60	168	#315	69	
Internal Link Dist (ft)		588		983		201		305	
Turn Bay Length (ft)									
Base Capacity (vph)	265	586	209	592	286	1989	285	1984	
Starvation Cap Reductn	0	0	0	0	0	833	0	224	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.49	0.58	0.36	0.46	0.32	0.77	0.95	0.51	
Intersection Summary									

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU 16: Main St & Cesar	·E. Ch	avez F		izon Y	ear Al	t 2 with	Grad	e Sepa		and C iming P		
	۶	-	7	4	+	×	1	1	1	1	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	ĥ		×	4	7	H.	410		ž	41.	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1836		1750	1863		1544	2972		1542	2903	
Flt Permitted	0.38	1.00		0.26	1.00		0.28	1.00		0.28	1.00	
Satd. Flow (perm)	701	1836		479	1863		462	2972		461	2903	
Volume (vph)	120	290	25	70	250	270	85	640	180	250	540	280
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	315	27	76	272	293	92	696	196	272	587	304
RTOR Reduction (vph)	0	4	0	0	0	0	0	25	0	0	64	0
Lane Group Flow (vph)	130	338	0	76	272	0	92	867	0	272	827	0
Confl. Peds. (#/hr)	19		24	24		19	16		20	20		16
Confl. Bikes (#/hr)	001	00/	1	00/	001	2	4.00/	100/	4.00/	400/	100/	1001
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4		0	8	0	0	2		0	6	
Permitted Phases	4	00.0		8	00.0	8	2	50.0		6	50.0	
Actuated Green, G (s)	20.8	20.8		20.8	20.8		56.2	56.2		56.2	56.2	
Effective Green, g (s)	20.8	20.8		20.8	20.8		56.2	56.2		56.2	56.2	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.66	0.66		0.66	0.66 4.0	
Clearance Time (s) Vehicle Extension (s)	4.0 3.0	4.0 3.0		4.0 3.0	4.0		4.0	4.0		4.0	4.0 3.0	
				117								
Lane Grp Cap (vph) v/s Ratio Prot	172	449		117	456		305	1965		305	1919	
v/s Ratio Perm	c0.19	0.18		0.16	0.15		0.20	0.29		c0.59	0.28	
v/c Ratio	0.76	0.75		0.65	0.60		0.20	0.44		0.89	0.43	
Uniform Delay, d1	29.7	29.7		28.8	28.4		6.1	6.9		11.9	6.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.65	0.55	
Incremental Delay, d2	17.1	7.0		11.8	2.1		2.5	0.7		27.7	0.55	
Delay (s)	46.8	36.7		40.6	30.5		8.6	7.6		35.4	4.4	
Level of Service	40.0 D	30.7 D		40.0 D	30.5 C		0.0 A	7.0 A		55.4 D	4.4 A	
Approach Delay (s)	5	39.5		5	32.7		~ ~	7.7		5	11.6	
Approach LOS		00.0 D			02.7 C			A			B	
Intersection Summary												
HCM Average Control E			17.2	F	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.86	-			()		0.6			_
Actuated Cycle Length (85.0			ost time	()		8.0			
Intersection Capacity Ut	ilization		75.2%	10	JU Lev	el of Se	rvice		D			_
Analysis Period (min)			15									

c Critical Lane Group

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ተቀ	7*	γí	1÷		4	7*		4	74
Volume (vph)	94	588	85	448	406	18	98	163	195	210	102
Turn Type	Prot		Perm	Prot		Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8		2			6	
Permitted Phases			4			2		2	6		6
Detector Phases	7	4	4	3	8	2	2	2	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	35.0	35.0	8.0	35.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	12.0	35.0	35.0	32.0	55.0	33.0	33.0	33.0	33.0	33.0	33.0
Total Split (%)					55.0%						
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lag	Lag	Lag		Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None		C-Max	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	11.7 0.12	25.2	25.2 0.25	28.0 0.28	41.5		34.8	34.8		34.8 0.35	34.8 0.35
Actuated g/C Ratio	0.12	0.25	0.25	1.09	0.42		0.35	0.35		0.35	0.35
Control Delay	52.0	38.4	6.6	104.6	45.2		19.5	6.2		67.1	6.1
Queue Delay	0.0	0.0	0.0	0.0	45.2		0.0	0.2		0.0	0.0
Total Delay	52.0	38.4	6.6		45.2		19.5	6.2		67.1	6.1
LOS	52.0 D	00.4 D	0.0 A	104.0	40.2 D		13.5 B	0.2 A		E	0.1 A
Approach Delay		36.5			69.5		11.8			54.9	
Approach LOS		D			E		B			D	
					-						
Intersection Summary											
Cycle Length: 100	. 100										
Actuated Cycle Length Offset: 70 (70%), Refe		o phose	2.14/01	Start	of Grace						
Vatural Cycle: 120	renced t	o phase	S.VVBL	., Start (JI GIEEI						
Control Type: Actuated	l-Coordi	nated									
Maximum v/c Ratio: 1		atou									
Intersection Signal De					ntersec	tion I O	S' D				
Intersection Capacity I		י 79.8%			CU Lev						
Analysis Period (min)					20 201	2. 0. 00					
inter shou (intri)											
Splits and Phases:	33: Natio	nal Ave	& 28th	St							
		1	_			_					
22 g2		∳ ø: 32 s	3				0 4				
00 %		32.8				30.8					
4											

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									iming Plan: PM Peak
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EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR	
102	639	92	487	703	127	177	440	111	
0.49	0.72	0.20	1.09	0.93	0.29	0.28	0.95	0.19	
52.0	38.4	6.6	104.6	45.2	19.5	6.2	67.1	6.1	
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
52.0	38.4	6.6	104.6	45.2	19.5	6.2	67.1	6.1	
62	193	0	~351	390	58	28	276	0	
#148	237	35	#549	484	124	75	#520	40	
	590			82	302		221		
208	1097	554	447	918	437	640	461	597	
0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	
0.49	0.58	0.17	1.09	0.77	0.29	0.28	0.95	0.19	
acity, d	queue is	theore	tically ir	nfinite.					
mum a	after two	cycles							
	102 0.49 52.0 0.0 52.0 62 #148 0 0 0 0.49 acity, c	102 639 0.49 0.72 52.0 38.4 62 193 #148 237 590 590 208 1097 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	102 639 92 0.49 0.72 0.20 52.0 38.4 6.6 0.0 0.0 0.0 52.0 38.4 6.6 62 193 0 #148 237 35 590 590 208 1097 554 0 0 0 0 0 0 0 0 0 0.49 0.58 0.17	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Horizon Year Alt 2 with Grade Separation and Coordination

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Barrio Logan CPU

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ሳቀ	Př	ΨÇ.	1÷			4	P		4	ħ.
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.94			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1597	1759			1762	1509		1734	1509
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.87	1.00		0.76	1.00
Satd. Flow (perm)	1770	3539	1583	1597	1759			1539	1509		1353	1509
Volume (vph)	94	588	85	448	406	241	18	98	163	195	210	102
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	639	92	487	441	262	20	107	177	212	228	111
RTOR Reduction (vph)	0	0	69	0	26	0	0	0	115	0	0	72
Lane Group Flow (vph)	102	639	23	487	677	0	0	127	62	0	440	39
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		6
Actuated Green, G (s)	11.7	25.2	25.2	28.0	41.5			34.8	34.8		34.8	34.8
Effective Green, g (s)	11.7	25.2	25.2	28.0	41.5			34.8	34.8		34.8	34.8
Actuated g/C Ratio	0.12	0.25	0.25	0.28	0.42			0.35	0.35		0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	207	892	399	447	730			536	525		471	525
v/s Ratio Prot	0.06	c0.18		c0.30	c0.39							
v/s Ratio Perm			0.01					0.08	0.04		c0.33	0.03
v/c Ratio	0.49	0.72	0.06	1.09	0.93			0.24	0.12		0.93	0.07
Uniform Delay, d1	41.4	34.1	28.4	36.0	27.8			23.2	22.2		31.5	21.8
Progression Factor	1.00	1.00	1.00	1.00	1.00			0.68	1.22		1.00	1.00
Incremental Delay, d2	1.8	2.8	0.1	68.9	17.8			0.2	0.1		25.8	0.1
Delay (s)	43.2	36.9	28.5	104.9	45.7			16.1	27.1		57.3	21.9
Level of Service	D	D	С	F	D			В	С		E	С
Approach Delay (s)		36.7			69.9			22.5			50.1	
Approach LOS		D			E			С			D	
Intersection Summary												
HCM Average Control D	elav		51.5	H	ICM Lev	vel of S	ervice		D			
HCM Volume to Capacit			0.92		10							
Actuated Cycle Length (100.0	5	Sum of l	ost time	(s)		8.0			
Intersection Capacity Ut		1	79.8%		CU Leve		· · /		D			

Analysis Period (min) c Critical Lane Group

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Synchro 6 Report 3/4/2011

Barrio	Logan CPU
34: Bos	ston Ave & 28th St

Horizon Year Alt 2 with Grade Separation and Coordination Timing Plan: PM Peak

Synchro 6 Report 3/4/2011

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	ň	4	*	γí	Þ	ň	474	N,	ቶ ቶኼ
Volume (vph)	350	420	170	70	70	50	1100	270	580
Turn Type	Perm		Perm	Perm		Prot		Prot	
Protected Phases		4			8	5	2	1	6
Permitted Phases	4		4	8					
Detector Phases	4	4	4	8	8	5	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	35.0	35.0	35.0	35.0	35.0	8.0	27.0	8.0	27.0
Total Split (s)	38.0	38.0	38.0	38.0	38.0	12.0	42.0	20.0	50.0
Total Split (%)	38.0%	38.0%	38.0%	38.0%	38.0%	12.0%	42.0%	20.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	34.0	34.0	34.0	34.0	34.0	7.3	38.0	16.0	48.6
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34	0.07	0.38	0.16	0.49
v/c Ratio	1.04	0.76	0.29	0.55	0.27	0.42	0.98	1.04	0.41
Control Delay	92.5	38.8	4.9	44.7	16.0	46.5	48.0	110.7	7.5
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	47.1	0.0	0.2
Total Delay	92.5	38.8	4.9	44.9	16.0	46.5	95.2	110.7	7.7
LOS	F	D	А	D	В	D	F	F	А
Approach Delay		52.6			25.2		93.2		30.9
Approach LOS		D			С		F		С
Intersection Summary									
Cycle Length: 100									
Actuated Cycle Length	n: 100								
Offset: 88 (88%), Refe	erenced t	o phase	2:NBT	and 6:8	SBT, Sta	art of G	reen		
Natural Cycle: 100									
Control Type: Actuated		nated							
Maximum v/c Ratio: 1.	.04								
Intersection Signal Del					ntersec				
Intersection Capacity L		1 89.9%)	1	CU Lev	el of Se	ervice E		
Analysis Period (min) 7	15								

Splits and Phases:	34: Boston Ave & 28th St	
► ø1	↑ _{ø2}	o4 ••
20 s 🦷	42 s	38 s
▲ ø5 🖡 ø6		★ ø8
12 s 50 s		38 s

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ane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT			
ane Group Flow (vph)	380	457	185	76	163	54	1305	293	1010			
//c Ratio	1.04	0.76	0.29	0.55	0.27	0.42	0.98	1.04	0.41			
Control Delay	92.5	38.8	4.9	44.7	16.0	46.5	48.0	110.7	7.5			
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	47.1	0.0	0.2			
Total Delay	92.5	38.8	4.9	44.9	16.0	46.5	95.2	110.7	7.7			
Queue Length 50th (ft)	~264	256	0	39	45	34	314	~206	78			
Queue Length 95th (ft)	#444	379	46	#103	95	m53 r	n#517	#374	95			
nternal Link Dist (ft)		207			577		298		291			
Furn Bay Length (ft)												
Base Capacity (vph)	365	604	635	138	596	142	1334	283	2436			
Starvation Cap Reductn	0	0	0	0	0	0	165	0	548			
Spillback Cap Reductn	0	0	14	2	0	0	0	0	92			
Storage Cap Reductn	0	0	0	0	0	0	0	0	0			
Reduced v/c Ratio 1.04 0.76 0.30 0.56 0.27 0.38 1.12 1.04 0.53												
Intersection Summary												
 Volume exceeds capacity, queue is theoretically infinite. 												
					innite.							
 Volume exceeds cap Queue shown is maxi 95th percentile volum 	imum a	fter two	cycles.			onger						

Queue shown is maximum after two cycles. M Volume for 95th percentile queue is metered by upstream signal.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lane Configurations	×	4	4	ž	Þ		H.	朴		×	44T>	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.92		1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1776	1509	1687	1634		1770	3495		1770	4798	
Flt Permitted	0.60	1.00	1.00	0.23	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1073	1776	1509	405	1634		1770	3495		1770	4798	
Volume (vph)	350	420	170	70	70	80	50	1100	100	270	580	350
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	457	185	76	76	87	54	1196	109	293	630	38
RTOR Reduction (vph)	0	0	122	0	41	0	0	7	0	0	105	(
Lane Group Flow (vph)	380	457	63	76	122	0	54	1298	0	293	905	(
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	34.0	34.0	34.0	34.0	34.0		6.2	38.0		16.0	47.8	
Effective Green, g (s)	34.0	34.0	34.0	34.0	34.0		6.2	38.0		16.0	47.8	
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34		0.06	0.38		0.16	0.48	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	365	604	513	138	556		110	1328		283	2293	
v/s Ratio Prot		0.26			0.07		0.03	c0.37		c0.17	0.19	
v/s Ratio Perm	c0.35		0.04	0.19								
v/c Ratio	1.04	0.76	0.12	0.55	0.22		0.49	0.98		1.04	0.39	
Uniform Delay, d1	33.0	29.3	22.7	26.8	23.5		45.4	30.6		42.0	16.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.88	0.98		1.16	0.52	
Incremental Delay, d2	58.2	5.4	0.1	4.7	0.2		2.7	17.3		62.5	0.5	
Delay (s)	91.2	34.7	22.8	31.5	23.7		42.5	47.3		111.4	9.2	
Level of Service	F	С	С	С	С		D	D		F	А	
Approach Delay (s)		53.6			26.2			47.1			32.2	
Approach LOS		D			С			D			С	
Intersection Summary												
HCM Average Control E			42.6	H	ICM Le	vel of S	ervice		D			
HCM Volume to Capaci			1.01									
Actuated Cycle Length (100.0			ost time			12.0			
			89.9%	10	CU Lev	el of Sei	rvice		E			
Analysis Period (min)			15									

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Barrio Logan CPUHorizon Year Alt 2 with Grade Separation and Coordination35: Main St & 28th StTiming Plan: PM Peak											
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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT			
Lane Configurations	7	仲弘	35	竹汤	7	41.	45	朴師			
Volume (vph)	220	730	150	300	60	450	370	510			
Turn Type	Perm		Perm		Prot		Prot				
Protected Phases		4		8	5	2	1	6			
Permitted Phases	4		8								
Detector Phases	4	4	8	8	5	2	1	6			
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Minimum Split (s)	35.0	35.0	35.0	35.0	8.0	27.0	8.0				
Total Split (s)	45.0	45.0	45.0	45.0	8.0	28.0	27.0	47.0			
Total Split (%)			45.0%			28.0%					
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5				
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5				
Lead/Lag					Lead	Lag	Lead	0			
Lead-Lag Optimize?					Yes	Yes	Yes				
Recall Mode	None		None	None		C-Min		C-Min			
Act Effct Green (s)	42.1	42.1	42.1	42.1	4.0	22.9	23.0	41.9			
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.04	0.23	0.23				
v/c Ratio	0.99	0.56	0.98	0.42	0.94	0.94		0.96dr			
Control Delay	88.3	23.9	97.7	11.6	142.7	50.7	87.5	22.5			
Queue Delay	14.7	0.0	0.0	0.0	0.0	6.2	0.7				
Total Delay	103.0 F	23.9 C	97.7 F	11.6 B	142.7 F	56.9 E	88.2 F				
LOS	F		F		F		F				
Approach Delay		41.5		29.1		63.9		39.7			
Approach LOS		D		С		E		D			
Intersection Summary											
Cycle Length: 100											
Actuated Cycle Length	า: 100										
Offset: 0 (0%), Refere	nced to p	hase 2	NBT ar	d 6:SB	F, Start	of Gree	n				
Natural Cycle: 100											
Control Type: Actuate	d-Coordii	nated									
Maximum v/c Ratio: 1	.01										
Intersection Signal De	lay: 42.7			- I	ntersec	tion LO	S: D				
Intersection Capacity		າ 90.7%		I	CU Lev	el of Se	ervice E				
Analysis Period (min)											
dr Defacto Right Lar	ne. Reco	de with	1 thoug	h lane a	as a rigl	nt lane.					
Splits and Phases:	35: Main	St & 28	th St								

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Horizon Year Alt 2 with Grade Separation and Coordination

Barrio Logan CPU

Lane Group Lane Group Flow (vph) v/c Ratio Control Delay	 EBL 239 0.99 88.3 14.7 	→ EBT 836 0.56 23.9	WBL 163 0.98	← WBT 641	NBL	↑ NBT	•	Ŧ					
Lane Group Flow (vph) v/c Ratio	239 0.99 88.3	836 0.56	163			NBT							
v/c Ratio	0.99 88.3	0.56		641	05		SBL	SBT					
	88.3		0.98		65	739	402	1152					
Control Delav		23.0		0.42	0.94	0.94	1.01	0.96dr					
	1/7	20.0	97.7	11.6	142.7	50.7	87.5	22.5					
Queue Delay	14.7	0.0	0.0	0.0	0.0	6.2	0.7	0.3					
Total Delay	103.0	23.9	97.7	11.6	142.7	56.9	88.2	22.8					
Queue Length 50th (ft)	~156	210	~103	75	43	188	~226	205					
	#314	272	#239		m#122		#441	#290					
Internal Link Dist (ft)		327		314		290		298					
Turn Bay Length (ft)													
Base Capacity (vph)	241	1480	166	1524	69	822	399	1321					
Starvation Cap Reductn		0	0	0	0	0	1	17					
Spillback Cap Reductn	12	0	0	85	0	57	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.04	0.56	0.98	0.45	0.94	0.97	1.01	0.88					
Intersection Summary													
 Volume exceeds cap 	bacity, d	queue is	s theore	tically in	nfinite.								
Queue shown is maximum after two cycles.													
# 95th percentile volum	# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maxi	Queue shown is maximum after two cycles.												

Volume for 95th percentile queue is metered by upstream signal.
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	ቀኈ		μ,	† Ъ		Υç	作る		Ň	41>	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.96		1.00	0.86	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.93		1.00	0.95		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3507		1765	3215		1736	3156		1736	2660	
Flt Permitted	0.32	1.00		0.22	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	581	3507		407	3215		1736	3156		1736	2660	
Volume (vph)	220	730	40	150	300	290	60	450	230	370	510	550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	793	43	163	326	315	65	489	250	402	554	598
RTOR Reduction (vph)	0	4	0	0	171	0	0	66	0	0	180	0
Lane Group Flow (vph)	239	832	0	163	470	0	65	673	0	402	972	0
Confl. Peds. (#/hr)	27		12	12		27			88			200
Confl. Bikes (#/hr)			8			3						6
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	4%	4%	4%	4%	4%	11%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	42.1	42.1		42.1	42.1		4.0	22.9		23.0	41.9	
Effective Green, g (s)	42.1	42.1		42.1	42.1		4.0	22.9		23.0	41.9	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.04	0.23		0.23	0.42	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	245	1476		171	1354		69	723		399	1115	
v/s Ratio Prot		0.24			0.15		0.04	0.21		c0.23	c0.37	
v/s Ratio Perm	c0.41			0.40								
v/c Ratio	0.98	0.56		0.95	0.35		0.94	0.93		1.01	0.96dr	
Uniform Delay, d1	28.4	22.0		28.0	19.6		47.9	37.8		38.5	26.6	
Progression Factor	1.00	1.00		1.00	1.00		0.98	0.91		1.03	0.65	
Incremental Delay, d2	50.2	0.5		54.8	0.2		87.4	20.3		46.6	9.3	
Delay (s)	78.6	22.5		82.8	19.8		134.5	54.6		86.4	26.7	
Level of Service	E	С		F	В		F	D		F	С	
Approach Delay (s)		35.0			32.6			61.0			42.1	
Approach LOS		С			С			E			D	
Intersection Summary												
HCM Average Control D	Delay		42.1	H	ICM Le	vel of S	ervice		D			
HCM Volume to Capacit			0.94									
Actuated Cycle Length (100.0	S	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut			90.7%			el of Sei	· · /		E			
Analysis Period (min)			15									
dr Defacto Right Lane	. Recoo	le with	1 thoug	h lane a	as a righ	t lane.						
c Critical Lane Group			Ŭ		Ŭ							

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Horizon Year Alt 2 with Grade Separation and Coordination

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Timing Plan: PM Peak

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Barrio Logan CPU

35: Main St & 28th St

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Barrio	Logan CPU	
36: Ha	rbor Dr & 28th St	

Horizon Year Alt 2 with Grade Separation and Coordination Timing Plan: PM Peak .

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR	
Lane Configurations	ሻሻ	<u> </u>	r.	ž	**	7	\$	42.96	4	×	
Volume (vph)	170	1350	2	18	531	255	133	480	12	13	
Turn Type	Prot		Perm	Prot		pm+ov		Split		Perm	
Protected Phases	5	2		1	6	4	8	4	4		
Permitted Phases			2			6				4	
Detector Phases	5	2	2	1	6	4	8	4	4	4	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	34.0	35.0	34.0	34.0	34.0	
Total Split (s)	10.0	23.0	23.0	8.0	21.0	34.0	35.0	34.0	34.0	34.0	
Total Split (%)	10.0%	23.0%	23.0%	8.0%	21.0%	34.0%	35.0%	34.0%	34.0%	34.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lag	Lag	Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max		C-Max	None	None	None	None	None	
Act Effct Green (s)	6.0	43.0	43.0	5.1	36.2	59.1	18.9	22.9	22.9	22.9	
Actuated g/C Ratio	0.06	0.43	0.43	0.05	0.36	0.59	0.19	0.23	0.23	0.23	
v/c Ratio	0.93	1.00	0.00	0.23	0.46	0.28	0.45	0.68	0.03	0.04	
Control Delay	97.2	55.8	27.5	52.7	31.3	2.0	37.8	33.5	22.1	8.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	97.2	55.8	27.5	52.7	31.3	2.0	37.8	33.5	22.1	8.4	
LOS	F	E	С	D	С	A		С	С	А	
Approach Delay		60.4			22.5		37.8		32.5		
Approach LOS		E			С		D		С		
Intersection Summary											
Cycle Length: 100											
Actuated Cycle Length											
Offset: 86 (86%), Refe	erenced t	to phase	2:EBT	and 6:\	NBT, St	art of G	Green				
Natural Cycle: 140											
Control Type: Actuate	d-Coordi	nated									

Maximum v/c Ratio: 1.00 Intersection Signal Delay: 44.3 Intersection LOS: D Intersection Capacity Utilization 75.2% Analysis Period (min) 15 ICU Level of Service D

Splits and Phases: 36: Harbor Dr & 28th St



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	185	1467	2	20	577	277	156	522	13	14
v/c Ratio	0.93	1.00	0.00	0.23	0.46	0.28	0.45	0.68	0.03	0.04
Control Delay	97.2	55.8	27.5	52.7	31.3	2.0	37.8	33.5	22.1	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.2	55.8	27.5	52.7	31.3	2.0	37.8	33.5	22.1	8.4
Queue Length 50th (ft)	61	381	0	12	127	0	96	150	6	1
Queue Length 95th (ft)	#129	#938	7	38	#309	30	128	m151	m9	m0
nternal Link Dist (ft)		247			310		22		214	
Turn Bay Length (ft)	150			75						210
Base Capacity (vph)	198	1464	524	88	1244	1061	564	1010	548	469
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	1.00	0.00	0.23	0.46	0.26	0.28	0.52	0.02	0.03

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

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Kimley-Horn and Associates, Inc.

Lane ConfigurationsMMM	36: Harbor Dr & 28t	n St							-	Т	iming F	Plan: PN	l Peak
Lane Configurations N AA P N AA P<		۶	-	$\mathbf{\hat{z}}$	4	+	•	1	Ť	1	1	ţ	~
Ideal Flow (vphp) 1900 19	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost time (s) 4.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.20 0.02 0.92 0.92 0.92 <td< td=""><td>Lane Configurations</td><td>ሻሻ</td><td>ተቀ</td><td>7*</td><td>74</td><td>44</td><td>7</td><td></td><td>40</td><td></td><td>77</td><td>4</td><td>ř</td></td<>	Lane Configurations	ሻሻ	ተቀ	7*	74	44	7		40		77	4	ř
Lane Util, Factor 0.97 0.95 1.00 1.00 0.95 1.00 1.00 0.97 1.00 1.00 1.00 Frpb, ped/bikes 1.00 1.00 0.90 1.00 0.95 1.00	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Frpb, ped/bikes 1.00	Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0
Fipb, ped/bikes 1.00	Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00		0.97	1.00	1.00
Frit 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 0.95 1.00 1.00 1.00 0.95 1.00	Frpb, ped/bikes	1.00	1.00	0.90	1.00	1.00	0.95		1.00		1.00	1.00	0.99
Fit Protected 0.95 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 Satd. Flow (prot) 3303 3406 1364 1719 3438 1455 1821 3367 1827 15 Fit Permitted 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.92 <td>Flpb, ped/bikes</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td></td> <td>1.00</td> <td></td> <td>1.00</td> <td>1.00</td> <td>1.00</td>	Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00
Satd. Flow (prot) 3303 3406 1364 1719 3438 1455 1821 3367 1827 15 Fit Permitted 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 0.95 1.00 1.00 1.00 0.95 1.00 1.20 0.92	Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00	1.00	0.85
Fit Permitted 0.95 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00 Satd. Flow (perm) 3303 3406 1364 1719 3438 1455 1821 3367 1827 157 Volume (vph) 170 1350 2 18 531 255 10 133 0 480 122 Peak-hour factor, PHF 0.92 <td>Flt Protected</td> <td>0.95</td> <td>1.00</td> <td>1.00</td> <td>0.95</td> <td>1.00</td> <td>1.00</td> <td></td> <td>1.00</td> <td></td> <td>0.95</td> <td>1.00</td> <td>1.00</td>	Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (perm) 3303 3406 1364 1719 3438 1455 1821 3367 1827 15 Volume (vph) 170 1350 2 18 531 255 10 133 0 480 12 Peak-hour factor, PHF 0.92 <t< td=""><td>Satd. Flow (prot)</td><td>3303</td><td>3406</td><td>1364</td><td>1719</td><td>3438</td><td>1455</td><td></td><td>1821</td><td></td><td>3367</td><td>1827</td><td>1531</td></t<>	Satd. Flow (prot)	3303	3406	1364	1719	3438	1455		1821		3367	1827	1531
Volume (vph) 170 1350 2 18 531 255 10 133 0 480 12 Peak-hour factor, PHF 0.92	Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95	1.00	1.00
Peak-hour factor, PHF 0.92	Satd. Flow (perm)	3303	3406	1364	1719	3438	1455		1821		3367	1827	1531
Peak-hour factor, PHF 0.92	Volume (vph)	170	1350	2	18	531	255	10	133	0	480	12	13
Adj. Flow (vph) 185 1467 2 20 577 277 11 145 0 522 13 RTOR Reduction (vph) 0 0 1 20 577 157 0 156 0 522 13 Confl. Pecks. (#hr) 69 80 0				0.92	0.92					0.92	0.92	0.92	0.92
RTOR Reduction (vph) 0 0 1 0 0 120 0 0 0 0 0 Lane Group Flow (vph) 185 1467 1 20 577 157 0 156 0 522 13 Confl. Biks (#/hr) 2 4													14
Lane Group Flow (vph) 185 1467 1 20 577 157 0 156 0 522 13 Confl. Peds. (#/hr) 69 80 4 4 4 4 Heavy Vehicles (%) 6% 6% 5% 5% 4% 4% 4% 4% 4% Turn Type Prot Perm Prot pm+ov Split Split Perm Protected Phases 5 2 1 6 4 8 4 4 Permitted Phases 2 6 6 5 2 2.9 22.9 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>11</td>													11
Confl. Peds. (#/hr) 69 80 Confl. Bikes (#/hr) 2 4 Heavy Vehicles (%) 6% 6% 5% 5% 4% <													3
Confl. Bikes (#/hr) 2 4 Heavy Vehicles (%) 6% 6% 5% 5% 5% 4%													
Heavy Vehicles (%) 6% 6% 6% 5% 5% 4%	· · · ·						00			4			2
Turn Type Prot Perm Prot pm+ov Split Split Per Perotected Phases 5 2 1 6 4 8 8 4 4 Permitted Phases 2 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 7 <td></td> <td>6%</td> <td>6%</td> <td></td> <td>5%</td> <td>5%</td> <td>5%</td> <td>4%</td> <td>4%</td> <td></td> <td>4%</td> <td>4%</td> <td>4%</td>		6%	6%		5%	5%	5%	4%	4%		4%	4%	4%
Protected Phases 5 2 1 6 4 8 8 4 4 Permitted Phases 2 6 6 2 6 2			- / •									.,,	Perm
Permitted Phases 2 6 Actuated Green, G (s) 8.4 40.6 40.6 1.6 33.8 56.7 18.9 22.			2	1 Onin					8			4	1 01111
Actuated Green, G (s) 8.4 40.6 40.6 1.6 33.8 56.7 18.9 22.9 Vehicle 6.10 4.		Ū	-	2		Ū		Ū	U				4
Effective Green, g (s) 8.4 40.6 40.6 1.6 33.8 56.7 18.9 22.9 Progression Factor 1.00<		84	40.6		16	33.8			18.9		22.9	22.9	22.9
Actuated g/C Ratio 0.08 0.41 0.41 0.02 0.34 0.57 0.19 0.23 0.3 Lane Grp Cap (vph) 277 1383 554 28 1162 825 344 771 418 3 V/s Ratio Perm 0.06 0.71 0.50 0.19 0.45 0.68 0													22.9
Clearance Time (s) 4.0													0.23
Vehicle Extension (s) 3.0													4.0
Lane Grp Cap (vph) 277 1383 554 28 1162 825 344 771 418 3 v/s Ratio Prot 0.06 c0.43 0.01 c0.17 0.04 c0.09 c0.16 0.01 v/s Ratio Perm 0.00 0.06 0.06 0.0 0.00 0.06 0.0 v/s Ratio Perm 0.00 0.01 0.05 0.09 c0.16 0.01 v/s Ratio 0.67 1.06 0.00 0.71 0.50 0.19 0.45 0.68 0.03 0.0 uniform Delay, d1 44.4 29.7 17.7 49.0 26.3 10.5 36.0 35.2 29.9 22 Progression Factor 1.00													3.0
v/s Ratio Prot 0.06 c0.43 0.01 c0.17 0.04 c0.09 c0.16 0.01 v/s Ratio Perm 0.00 0.06 0.06 0 0 v/s Ratio Perm 0.00 0.06 0.06 0 0 v/s Ratio Perm 0.07 1.05 0.19 0.45 0.68 0.03 0 uniform Delay, d1 44.4 29.7 17.7 49.0 26.3 10.5 36.0 35.2 29.9 29.9 29 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.86 0.84 0.0 Incremental Delay, d2 6.0 42.1 0.0 60.5 1.5 0.1 1.0 1.9 0.0 0 Delay (s) 50.4 71.8 17.7 199.5 27.8 10.6 36.9 32.3 25.1 21 Level of Service D E C B C C C Approach LOS E C D C C													351
v/s Ratio Perm 0.00 0.06 0.00 v/c Ratio 0.67 1.06 0.00 0.71 0.50 0.19 0.45 0.68 0.03 0.00 Uniform Delay, d1 44.4 29.7 17.7 49.0 26.3 10.5 36.0 35.2 29.9 22 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.86 0.84 0.0 Incremental Delay, d2 6.0 42.1 0.0 60.5 1.5 0.1 1.0 1.9 0.0 0.0 Delay (s) 50.4 71.8 17.7 109.5 27.8 10.6 36.9 32.3 25.1 21 Level of Service D E B F C B D C C Approach LOS E C D C D C C D C C Intersection Summary HCM Average Control Delay 49.2 HCM Level of Service D C C C HCM Volume to Capacity ratio 0.82				004									001
v/c Ratio 0.67 1.06 0.00 0.71 0.50 0.19 0.45 0.68 0.03 0. Uniform Delay, d1 44.4 29.7 17.7 49.0 26.3 10.5 36.0 35.2 29.9 22 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 0.86 0.84 0. Incremental Delay, d2 6.0 42.1 0.0 60.5 1.5 0.1 1.0 1.9 0.0 0.0 Delay (s) 50.4 71.8 17.7 109.5 27.8 10.6 36.9 32.3 25.1 27.8 Level of Service D E B F C B D C C Approach LOS E C D C C Intersection Summary HCM Average Control Delay 49.2 HCM Level of Service D C C HCM Volume to Capacity ratio 0.82 Actuated Cycle Length (s) 100		0.00	00.10	0.00	0.01	00.11			00.00		00.10	0.01	0.00
Uniform Delay, d1 44.4 29.7 17.7 49.0 26.3 10.5 36.0 35.2 29.9 24 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.86 0.84 0.0 Incremental Delay, d2 6.0 42.1 0.0 60.5 1.5 0.1 1.0 1.9 0.0 <		0.67	1.06		0 71	0.50			0.45		0.68	0.03	0.01
Progression Factor 1.00 0.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>29.8</td>													29.8
Incremental Delay, d2 6.0 42.1 0.0 60.5 1.5 0.1 1.0 1.9 0.0 0 Delay (s) 50.4 71.8 17.7 109.5 27.8 10.6 36.9 32.3 25.1 20 Level of Service D E B F C B D C C Approach Delay (s) 69.3 24.3 36.9 31.8 Approach LOS E C D C C Intersection Summary HCM Average Control Delay 49.2 HCM Level of Service D C HCM Volume to Capacity ratio 0.82 Actuated Cycle Length (s) 10.0 Sum of lost time (s) 16.0 Intersection Capacity Utilization 75.2% ICU Level of Service D D													0.69
Delay (s) 50.4 71.8 17.7 109.5 27.8 10.6 36.9 32.3 25.1 24 Level of Service D E B F C B D C C C Approach Delay (s) 69.3 24.3 36.9 31.8 Approach LOS E C D C C D Image: Control Delay 49.2 HCM Level of Service D C HCM Approach LOS E D C D C D C D C D C D C D C D C D C D C D D C D C D D C D D D D C D D D C D D D D D D D D D D D D D D D D D D D													0.0
Level of Service D E B F C B D C C Approach Delay (s) 69.3 24.3 36.9 31.8 Approach LOS E C D C Intersection Summary HCM Average Control Delay 49.2 HCM Level of Service D C HCM Volume to Capacity ratio 0.82 Actuated Cycle Length (s) 100.0 Sum of lost time (s) 16.0 Intersection Capacity Utilization 75.2% ICU Level of Service D C													20.5
Approach Delay (s) 69.3 24.3 36.9 31.8 Approach LOS E C D C Intersection Summary HCM Average Control Delay 49.2 HCM Level of Service D HCM Volume to Capacity ratio 0.82 Actuated Cycle Length (s) 100.0 Sum of lost time (s) 16.0 Intersection Capacity Utilization 75.2% ICU Level of Service D													20.0 C
Approach LOS E C D C Intersection Summary HCM Average Control Delay 49.2 HCM Level of Service D HCM Volume to Capacity ratio 0.82 Actuated Cycle Length (s) 100.0 Sum of lost time (s) 16.0 Intersection Capacity Utilization 75.2% ICU Level of Service D							5				Ŭ		U
Intersection Summary HCM Average Control Delay 49.2 HCM Level of Service D HCM Volume to Capacity ratio 0.82 Actuated Cycle Length (s) 100.0 Sum of lost time (s) 16.0 Intersection Capacity Utilization 75.2% ICU Level of Service D													
HCM Average Control Delay 49.2 HCM Level of Service D HCM Volume to Capacity ratio 0.82 0.82 Actuated Cycle Length (s) 100.0 Sum of lost time (s) 16.0 Intersection Capacity Utilization 75.2% ICU Level of Service D			-			U			5			0	
HCM Volume to Capacity ratio 0.82 Actuated Cycle Length (s) 100.0 Sum of lost time (s) 16.0 Intersection Capacity Utilization 75.2% ICU Level of Service D													
Actuated Cycle Length (s) 100.0 Sum of lost time (s) 16.0 Intersection Capacity Utilization 75.2% ICU Level of Service D					ŀ	ICM Le	vel of S	ervice		D			
Intersection Capacity Utilization 75.2% ICU Level of Service D													
								· · /					
Analysis Period (min) 15		ilization	1		1	CU Lev	el of Se	rvice		D			
	Analysis Period (min)			15									

Horizon Year Alt 2 with Grade Separation and Coordination

c Critical Lane Group

Barrio Logan CPU

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Kimley-Horn and Associates, Inc.

	_#	-	1	1	ſ	Ļ	4	
Lane Group	EBL	EBT	NBL	NBT	NBR	SBT	SWL	
Lane Configurations	2	ţ,	34	4	72	44T>	377	
Volume (vph)	115	195	140	600		619	140	
Turn Type	Perm		Prot		custom			
Protected Phases		4	5	2		6	3	
Permitted Phases	4				23			
Detector Phases	4	4	5	2	23	6	3	
Minimum Initial (s)	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	36.0	36.0	20.0	27.0		27.0	27.0	
Total Split (s)	36.0	36.0	20.0	47.0	74.0	27.0	27.0	
Total Split (%)	32.7%	32.7%	18.2%	42.7%	67.3%	24.5%	24.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5	
Lead/Lag	Lead	Lead	Lag			Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	Min	C-Min		C-Min	None	
Act Effct Green (s)	20.2	20.2	16.1	65.5	81.8	45.4	12.3	
Actuated g/C Ratio	0.18	0.18	0.15	0.60	0.74	0.41	0.11	
v/c Ratio	0.78	0.62	0.60	0.60	0.33	0.38	0.61	
Control Delay	58.6	48.5	37.0	8.3	2.2	24.7	53.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	58.6	48.5	37.0	8.3	2.2	24.7	53.6	
LOS	E	D	D	A	А	С	D	
Approach Delay		54.0		8.5		24.7	53.6	
Approach LOS		D		A		С	D	
Intersection Summary								
Cycle Length: 110								
Actuated Cycle Length	. 110							
Offset: 67 (61%), Refe		o phase	2.NPT	and 6.0	SBT CH	art of C	oon	
Natural Cycle: 110	ienceu l	o pilase	7 Z.IND I	and 0.	JDT, 36		Cell	
Control Type: Actuated	I-Coordi	nated						
Maximum v/c Ratio: 0		lateu						
Intersection Signal Del					Intersec	tion I O	S [.] C	
Intersection Capacity L			,		ICU Lev			
Analysis Period (min)		. 50. 77				0.0100		
Splits and Phases: 3	39: 32nd	St & W	abash S	St				
▲							1	1
ø2				ø4			144	ø3

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Kimley-Horn and Associates, Inc.

Synchro 6 Report 3/4/2011

39: 32nd St & Waba	sh St							Timing Plan: PM Peak					
	_#	-	•	Ť	۲	ţ	f						
Lane Group	EBL	EBT	NBL	NBT	NBR	SBT	SWL						
Lane Group Flow (vph)	250	212	152	652	674	759	223						
v/c Ratio	0.78	0.62	0.60	0.60	0.33	0.38	0.61						
Control Delay	58.6	48.5	37.0	8.3	2.2	24.7	53.6						
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
Total Delay	58.6	48.5	37.0	8.3	2.2	24.7	53.6						
Queue Length 50th (ft)	170	140	112	76	25	132	78						
Queue Length 95th (ft)	237	199	m143	m217	m56	203	113						
Internal Link Dist (ft)		174		613		1629	472						
Turn Bay Length (ft)													
Base Capacity (vph)	510	542	257	1078	2013	2012	682						
Starvation Cap Reductn	0	0	0	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0	0						
Reduced v/c Ratio	0.49	0.39	0.59	0.60	0.33	0.38	0.33						
Intersection Summary	ntersection Summary												
m Volume for 95th per	centile	queue	is meter	red by u	pstream	n signal.							

Horizon Year Alt 2 with Grade Separation and Coordination

Barrio Logan CPU 39: 32nd St & Waba	ash St		Horizon Year Alt 2 with Grade Separation and Coordination Timing Plan: PM Pea										
	٦	_#	-	1	1	ſ	ţ	~	¥	~	t		
Movement	EBL2	EBL	EBT	NBL	NBT	NBR	SBT	SBR	SWL	SWR	SWR2		
Lane Configurations		25	Ъ	34	4	75	443		244				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0		4.0				
Lane Util. Factor		1.00	1.00	1.00	1.00	0.88	0.91		0.97				
Frt		1.00	1.00	1.00	1.00	0.85	0.98		0.95				
Flt Protected		0.95	1.00	0.95	1.00	1.00	1.00		0.97				
Satd. Flow (prot)		1752	1863	1719	1810	2707	4872		3264				
Flt Permitted		0.95	1.00	0.95	1.00	1.00	1.00		0.97				
Satd. Flow (perm)		1752	1863	1719	1810	2707	4872		3264				
Volume (vph)	115	115	195	140	600	620	619	79	140	55	10		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	125	125	212	152	652	674	673	86	152	60	11		
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0		
Lane Group Flow (vph)	0	250	212	152	652	674	759	0	223	0	0		
Heavy Vehicles (%)	2%	4%	2%	5%	5%	5%	5%	2%	4%	4%	4%		
Turn Type	Perm	Perm		Prot	c	ustom							
Protected Phases			4	5	2		6		3				
Permitted Phases	4	4				23							
Actuated Green, G (s)		20.2	20.2	16.1	65.5	81.8	45.4		12.3				
Effective Green, g (s)		20.2	20.2	16.1	65.5	81.8	45.4		12.3				
Actuated g/C Ratio		0.18	0.18	0.15	0.60	0.74	0.41		0.11				
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0				
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0				
Lane Grp Cap (vph)		322	342	252	1078	2013	2011		365				
v/s Ratio Prot			0.11	0.09	c0.36		0.16		c0.07				
v/s Ratio Perm		c0.14				0.25							
v/c Ratio		0.78	0.62	0.60	0.60	0.33	0.38		0.61				
Uniform Delay, d1		42.7	41.4	44.0	14.1	4.8	22.5		46.6				
Progression Factor		1.00	1.00	0.69	0.41	0.35	1.00		1.00				
Incremental Delay, d2		11.1	3.3	2.4	1.5	0.1	0.5		3.0				
Delay (s)		53.9	44.7	32.7	7.3	1.7	23.0		49.6				
Level of Service		D	D	С	А	A	С		D				
Approach Delay (s)			49.7		7.4		23.0		49.6				
Approach LOS			D		А		С		D				
Intersection Summary													
HCM Average Control E	Delay		21.3	H	ICM Lev	vel of S	ervice		С				
HCM Volume to Capaci	ty ratio		0.64										
Actuated Cycle Length ((s)		110.0	5	Sum of l	ost time	(s)		12.0				
Intersection Capacity Ut	ilizatior	ı	60.4%	1	CU Leve	el of Se	vice		В				
Analysis Period (min)			15										
c Critical Lane Group													

c Critical Lane Group

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Barrio Logan CPU

Synchro 6 Report 3/4/2011 K:\SND_TPTO\095707000\Synchro\HY Al2 PM with Improvements without LRT.sy7

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Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SB Lane Configurations 1 <		≯		~	~	+	•	•	+	*		1	2
Lane Configurations N AA P <th></th> <th></th> <th>-</th> <th>•</th> <th>•</th> <th></th> <th>`</th> <th>7</th> <th>I</th> <th>r</th> <th>-</th> <th>*</th> <th>-</th>			-	•	•		`	7	I	r	-	*	-
Volume (vph) 160 1160 100 40 434 460 70 690 140 310 280 21 Turn Type Prot pm+ov Prot Perm Prot 4 Perm Prot 4 Perm Prot 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 3 5 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td>SBR</td></td<>											-		SBR
Turn Type Prot pm+ov Prot Perm Prot Perm Prot Perm Perd Perm Perd Perm Perd Perm													ň
Protected Phases 5 2 3 1 6 3 8 7 4 Permitted Phases 2 6 8 7 4 Detector Phases 5 2 3 1 6 6 8 Detector Phases 5 2 3 1 6 6 3 8 7 4 Minimum Initial (s) 4.0 <						434			690			280	210
Permitted Phases 2 6 8 Detector Phases 5 2 3 1 6 6 3 8 8 7 4 Minimum Initial (s) 4.0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>Perm</td><td></td><td></td><td>Perm</td><td></td><td></td><td>Perm</td></t<>							Perm			Perm			Perm
Detector Phases 5 2 3 1 6 6 3 8 8 7 4 Minimum Initial (s) 4.0		5	2		1	6		3	8		7	4	
Minimum Initial (s) 4.0<							-			-			4
Minimum Split (s) 8.0 20.0 8.0 8.0 20.0 20.0 8.0				-		-							4
Total Split (s) 18.0 47.0 14.0 8.0 37.0 37.0 14.0 29.0 26.0 41.0 41. Total Split (%) 16.4% 42.7% 12.7% 7.3% 33.6% 33.6% 32.7% 26.4% 26.4% 28.6% 37.3% 37.3% Yellow Time (s) 3.5													4.0
Total Split (%) 16.4% 42.7% 12.7% 7.3% 33.6% 33.6% 12.7% 26.4% 26.4% 23.6% 37.3% 37.3% Yellow Time (s) 3.5													8.0
Yellow Time (s) 3.5													41.0
All-Red Time (s) 0.5 <td></td> <td></td> <td>42.7%</td> <td>12.7%</td> <td>7.3%</td> <td></td> <td>33.6%</td> <td>12.7%</td> <td></td> <td>26.4%</td> <td>23.6%</td> <td>37.3%</td> <td></td>			42.7%	12.7%	7.3%		33.6%	12.7%		26.4%	23.6%	37.3%	
Lead/Lag Lag Lead Lag Lead Lag Lead Lag Lead Lag Lead Lag Lead Lag Lag Lag Lag <thlag< th=""> <thlag< th=""> <thlag< th=""></thlag<></thlag<></thlag<>	Yellow Time (s)												3.5
Lead-Lag Optimize? Yes	All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Recall Mode None C-Max None Max C-Max None None <td>Lead/Lag</td> <td>Lag</td> <td>Lead</td> <td>Lead</td> <td>Lag</td> <td>Lead</td> <td>Lead</td> <td>Lead</td> <td>Lead</td> <td>Lead</td> <td>Lag</td> <td>Lag</td> <td>Lag</td>	Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Act Effct Green (s) 14.0 43.0 51.9 4.0 33.0 33.0 8.9 25.0 25.0 22.0 38.1 38. Actuated g/C Ratio 0.13 0.39 0.47 0.04 0.30 0.30 0.08 0.23 0.23 0.20 0.35 0.3 v/c Ratio 0.79 0.94 0.14 0.70 0.47 0.63 0.54 0.96 0.35 0.98 0.26 0.3 Control Delay 72.6 46.5 3.3 104.7 33.2 7.1 63.0 66.5 13.3 71.6 8.8 4. Queue Delay 0.0 0.	Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Actuated g/C Ratio 0.13 0.39 0.47 0.04 0.30 0.30 0.08 0.23 0.23 0.20 0.35 0.3 v/c Ratio 0.79 0.94 0.14 0.70 0.47 0.63 0.54 0.96 0.35 0.98 0.26 0.3 Control Delay 72.6 46.5 3.3 104.7 33.2 7.1 63.0 66.5 13.3 71.6 8.8 4. Queue Delay 0.0	Recall Mode	None	C-Max	None	Max	C-Max	C-Max	None	None	None	None	None	None
v/c Ratio 0.79 0.94 0.14 0.70 0.47 0.63 0.54 0.96 0.35 0.98 0.26 0.3 Control Delay 72.6 46.5 3.3 104.7 33.2 7.1 63.0 66.5 13.3 71.6 8.8 4. Queue Delay 0.0	Act Effct Green (s)	14.0	43.0	51.9	4.0	33.0	33.0	8.9	25.0	25.0	22.0	38.1	38.1
Control Delay 72.6 46.5 3.3 104.7 33.2 7.1 63.0 66.5 13.3 71.6 8.8 4. Queue Delay 0.0<	Actuated g/C Ratio	0.13	0.39	0.47	0.04	0.30	0.30	0.08	0.23	0.23	0.20	0.35	0.35
Queue Delay 0.0 <th< td=""><td>v/c Ratio</td><td>0.79</td><td>0.94</td><td>0.14</td><td>0.70</td><td>0.47</td><td>0.63</td><td>0.54</td><td>0.96</td><td>0.35</td><td>0.98</td><td>0.26</td><td>0.34</td></th<>	v/c Ratio	0.79	0.94	0.14	0.70	0.47	0.63	0.54	0.96	0.35	0.98	0.26	0.34
Total Delay 72.6 46.5 3.3 104.7 33.2 7.1 63.0 66.5 13.3 71.6 8.8 4. LOS E D A F C A E B E A Approach Delay 46.4 23.3 57.9 32.1 32.1 Approach LOS D C E C C Intersection Summary C E C C C Cycle Length: 110 Actuated Cycle Length: 110 Actuated Cycle Length: 110 C C C C C Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green Natural Cycle: 80 C<	Control Delay	72.6	46.5	3.3	104.7	33.2	7.1	63.0	66.5	13.3	71.6	8.8	4.8
LOS E D A F C A E B E A Approach Delay 46.4 23.3 57.9 32.1 Approach LOS D C E C Intersection Summary C E C Cycle Length: 110 Cycle Length: 110 Coffset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green Natural Cycle: 80 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection LOS: D	Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Approach Delay 46.4 23.3 57.9 32.1 Approach LOS D C E C Intersection Summary Cycle Length: 110 C E C Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection LOS: D Intersection LOS: D	Total Delay	72.6	46.5	3.3	104.7	33.2	7.1	63.0	66.5	13.3	71.6	8.8	4.8
Approach LOS D C E C Intersection Summary Cycle Length: 110 Cycle Length: 110 Actuated Cycle Length: 110 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection LOS: D	LOS	E	D	А	F	С	A	E	E	В	E	A	A
Intersection Summary Cycle Length: 110 Actuated Cycle Length: 110 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection Signal Delay: 40.8 Intersection LOS: D	Approach Delay		46.4			23.3			57.9			32.1	
Cycle Length: 110 Actuated Cycle Length: 110 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection Signal Delay: 40.8 Intersection LOS: D	Approach LOS		D			С			E			С	
Cycle Length: 110 Actuated Cycle Length: 110 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection Signal Delay: 40.8	Intersection Summary												
Actuated Čycle Length: 110 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection Signal Delay: 40.8 Intersection LOS: D													
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection Signal Delay: 40.8 Intersection LOS: D		: 110											
Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection Signal Delay: 40.8 Intersection LOS: D			phase 2	EBT an	d 6:WE	T. Start	of Gre	en					
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98 Intersection Signal Delay: 40.8 Intersection LOS: D						,							
Maximum v/c Ratio: 0.98 Intersection Signal Delay: 40.8 Intersection LOS: D		-Coordi	nated										
Intersection Signal Delay: 40.8 Intersection LOS: D													
					1	ntersect	tion LO	S: D					
			n 85.0%										



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SB
Lane Group Flow (vph)	174	1261	109	43	472	500	76	750	152	337	304	22
v/c Ratio	0.79	0.94	0.14	0.70	0.47	0.63	0.54	0.96	0.35	0.98	0.26	0.3
Control Delay	72.6	46.5	3.3	104.7	33.2	7.1	63.0	66.5	13.3	71.6	8.8	4.
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
Total Delay	72.6	46.5	3.3	104.7	33.2	7.1	63.0	66.5	13.3	71.6	8.8	4
Queue Length 50th (ft)	121	444	4	31	142	4	52	276	21	243	78	7
Queue Length 95th (ft)	#234	#592	27	#95	192	92	101	#400	77	#427	34	1
Internal Link Dist (ft)		710			294			45			613	
Turn Bay Length (ft)	230		200	200		200				200		
Base Capacity (vph)	219	1344	789	61	1012	789	156	781	430	344	1189	67
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.79	0.94	0.14	0.70	0.47	0.63	0.49	0.96	0.35	0.98	0.26	0.3

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Synchro 6 Report 3/4/2011

Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Ideal Flow (vphp) 1900 <	40: Harbor Dr & 32r	nd St			2011 1			orad	0 0000		Timing F		
Lane Configurations th th<		۶	+	*	4	+	•	•	Ť	*	*	ţ	~
Ideal Flow (vphp) 1900 19	Movement					WBT	WBR	NBL	NBT				
Total Lost images 4.0 <td>Lane Configurations</td> <td>7</td> <td>ተተ</td> <td>7*</td> <td>74</td> <td>**</td> <td>7</td> <td>45</td> <td>44</td> <td>٣</td> <td>7</td> <td>44</td> <td>r"</td>	Lane Configurations	7	ተተ	7*	74	**	7	45	44	٣	7	44	r"
	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Frpb, ped/bikes 1.00	Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Fipb, ped/bikes 1.00	Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frit 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 Fit Protected 0.95 1.00 1.00 1.00 1.00 <td>Frpb, ped/bikes</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>0.98</td> <td>1.00</td> <td>1.00</td> <td>0.98</td> <td>1.00</td> <td>1.00</td> <td>0.98</td>	Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Fit Protected 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 0.95 1.00 1.00 0.95 1.00 </td <td>Flpb, ped/bikes</td> <td>1.00</td>	Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot) 1719 3438 1538 1687 3374 1483 1719 3438 1502 1719 3438 1510 Fit Permitted 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 1.00 0.92	Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fit Permitted 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.00 </td <td>Flt Protected</td> <td>0.95</td> <td>1.00</td> <td>1.00</td> <td>0.95</td> <td>1.00</td> <td>1.00</td> <td>0.95</td> <td>1.00</td> <td>1.00</td> <td>0.95</td> <td>1.00</td> <td>1.00</td>	Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm) 1719 3438 1538 1687 3374 1483 1719 3438 1502 1719 3438 1510 Volume (vph) 160 1160 100 40 434 460 70 690 140 310 280 210 Peak-hour factor, PHF 0.92	Satd. Flow (prot)	1719	3438	1538	1687	3374	1483	1719	3438	1502	1719	3438	1510
Volume (vph) 160 1160 100 40 434 460 70 690 140 310 280 210 Peak-hour factor, PHF 0.92	Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Peak-hour factor, PHF 0.92	Satd. Flow (perm)	1719	3438	1538	1687	3374	1483	1719	3438	1502	1719	3438	1510
Peak-hour factor, PHF 0.92	Volume (vph)	160	1160	100	40	434	460	70	690	140	310	280	210
Adj. Flow (vph) 174 1261 109 43 472 500 76 750 152 337 304 228 RTOR Reduction (vph) 0 0 49 0 0 344 0 0 89 0 0 149 Lane Group Flow (vph) 174 1261 60 43 472 156 76 750 63 337 304 79 Confl. Bikes (#/hr) 7 12 10 10 10 7% 7% 5%						0.92							
RTOR Reduction (vph) 0 0 49 0 0 344 0 0 89 0 0 149 Lane Group Flow (vph) 174 1261 60 43 472 156 76 750 63 337 304 79 Confl. Bikes (#/hr) 7 72 72 12 10 Heavy Vehicles (%) 5% 5% 5% 7% 7% 7% 5% <					43		500						
Lane Group Flow (vph) 174 1261 60 43 472 156 76 750 63 337 304 79 Confl. Bikes (#/hr) 7 7 12 10 Heavy Vehicles (%) 5%													
Confl. Bikes (#/hr) 7 12 10 Heavy Vehicles (%) 5%		174	1261	60	43	472	156	76	750	63	337	304	
Heavy Vehicles (%) 5% <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Turn Type Prot pm+ov Prot Perm Prot Perm Prot Perm Prot Perm Protected Phases 5 2 3 1 6 3 8 7 4 Permitted Phases 2 6 8 4 4 Actuated Green, G (s) 14.0 43.0 51.9 4.0 33.0 3.9 25.0 22.0 38.1 38.1 Actuated Green, g (s) 14.0 43.0 51.9 4.0 33.0 3.0 8.9 25.0 22.0 38.1 38.1 Actuated g/C Ratio 0.13 0.39 0.47 0.04 0.30 0.08 0.23 0.23 0.20 0.35 0.35 Clearance Time (s) 4.0		5%	5%	5%	7%	7%		5%	5%		5%	5%	
Protected Phases 5 2 3 1 6 3 8 7 4 Permitted Phases 2 6 8 4 Actuated Green, G (s) 14.0 43.0 51.9 4.0 33.0 33.0 8.9 25.0 22.0 38.1 38.1 Actuated Green, g (s) 14.0 43.0 51.9 4.0 33.0 3.0 8.9 25.0 22.0 38.1 38.1 Actuated g/C Ratio 0.13 0.39 0.47 0.04 0.30 0.08 0.23 0.23 0.20 0.35 0.35 Clearance Time (s) 4.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Permitted Phases 2 6 8 4 Actuated Green, G (s) 14.0 43.0 51.9 4.0 33.0 33.0 8.9 25.0 25.0 22.0 38.1 38.1 Effective Green, g (s) 14.0 43.0 51.9 4.0 33.0 33.0 8.9 25.0 22.0 38.1 38.1 Effective Green, g (s) 14.0 43.0 51.9 4.0 4.0 33.0 3.0 2.20 38.1 38.1 Actuated g/C Ratio 0.13 0.39 0.47 0.04 0.30 0.08 0.23 0.23 0.20 0.35 0.35 Clearance Time (s) 4.0						6	1 Onn		8	1 onn		4	1 Onn
Actuated Green, G (s) 14.0 43.0 51.9 4.0 33.0 33.0 8.9 25.0 25.0 22.0 38.1 38.1 Effective Green, g (s) 14.0 43.0 51.9 4.0 33.0 33.0 8.9 25.0 25.0 22.0 38.1 38.1 Actuated g/C Ratio 0.13 0.39 0.47 0.04 0.30 0.08 0.23 0.23 0.20 0.35 0.35 Clearance Time (s) 4.0 <t< td=""><td></td><td>Ŭ</td><td>-</td><td></td><td></td><td>Ŭ</td><td>6</td><td>Ŭ</td><td>Ŭ</td><td>8</td><td>•</td><td></td><td>4</td></t<>		Ŭ	-			Ŭ	6	Ŭ	Ŭ	8	•		4
Effective Green, g (s) 14.0 43.0 51.9 4.0 33.0 33.0 8.9 25.0 25.0 22.0 38.1 38.1 Actuated g/C Ratio 0.13 0.39 0.47 0.04 0.30 0.08 0.23 0.23 0.20 0.35 0.35 Clearance Time (s) 4.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 <td></td> <td>14 0</td> <td>43.0</td> <td></td> <td>40</td> <td>33.0</td> <td></td> <td>89</td> <td>25.0</td> <td></td> <td>22.0</td> <td>38.1</td> <td></td>		14 0	43.0		40	33.0		89	25.0		22.0	38.1	
Actuated g/C Ratio 0.13 0.39 0.47 0.04 0.30 0.08 0.23 0.23 0.20 0.35 0.35 Clearance Time (s) 4.0 0.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 <													
Clearance Time (s) 4.0 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Vehicle Extension (s) 3.0													
Lane Grp Cap (vph) 219 1344 726 61 1012 445 139 781 341 344 1191 523 v/s Ratio Prot c0.10 c0.37 0.01 0.03 0.14 0.04 c0.22 c0.20 0.09 v/s Ratio Perm 0.03 0.10 0.04 0.04 0.05 0.06 0.07 0.01 0.03 0.10 0.04 0.05 v/c Ratio 0.79 0.94 0.08 0.70 0.47 0.35 0.55 0.96 0.19 0.98 0.26 0.15 Uniform Delay, d1 46.6 32.2 16.0 52.4 31.3 30.1 48.6 42.0 34.3 43.8 25.8 24.8 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.01													
v/s Ratio Prot c0.10 c0.37 0.01 0.03 0.14 0.04 c0.22 c0.20 0.09 v/s Ratio Perm 0.03 0.10 0.10 0.04 0.05 v/c Ratio 0.79 0.94 0.08 0.70 0.47 0.35 0.55 0.96 0.19 0.98 0.26 0.15 v/c Ratio 0.79 0.94 0.08 0.70 0.47 0.35 0.55 0.96 0.19 0.98 0.26 0.15 v/c Ratio 0.79 0.94 0.08 0.70 0.47 0.35 0.55 0.96 0.19 0.98 0.26 0.15 Uniform Delay, d1 46.6 32.2 16.0 52.4 31.3 30.1 48.6 42.0 34.3 25.8 24.8 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.60 0.32 0.99 Incremental Delay, d2 17.8 13.6 0.0 50.9 1.5 2.2 4.3 22.9 0.3 40.9													
v/s Ratio Perm 0.03 0.10 0.04 0.05 v/c Ratio 0.79 0.94 0.08 0.70 0.47 0.35 0.55 0.96 0.19 0.98 0.26 0.15 Uniform Delay, d1 46.6 32.2 16.0 52.4 31.3 30.1 48.6 42.0 34.3 43.8 25.8 24.8 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.60 0.32 0.99 Incremental Delay, d2 17.8 13.6 0.0 50.9 1.5 2.2 4.3 22.9 0.3 40.9 0.1 0.1 Delay (s) 64.4 45.9 16.0 103.4 32.9 32.3 53.0 64.9 34.5 67.3 8.3 24.7 Level of Service E D B F C C D E C A C Approach LOS D D D E D E D E E D E E D <							445			541			525
v/c Ratio 0.79 0.94 0.08 0.70 0.47 0.35 0.55 0.96 0.19 0.98 0.26 0.15 Uniform Delay, d1 46.6 32.2 16.0 52.4 31.3 30.1 48.6 42.0 34.3 43.8 25.8 24.8 Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.02 0.99 0.32 0.99 0.11 0.10 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.01 0.1 <td></td> <td>CO. 10</td> <td>0.37</td> <td></td> <td>0.03</td> <td>0.14</td> <td>0.10</td> <td>0.04</td> <td>0.22</td> <td>0.04</td> <td>0.20</td> <td>0.09</td> <td>0.05</td>		CO. 10	0.37		0.03	0.14	0.10	0.04	0.22	0.04	0.20	0.09	0.05
Uniform Delay, d1 46.6 32.2 16.0 52.4 31.3 30.1 48.6 42.0 34.3 43.8 25.8 24.8 Progression Factor 1.00 1.01 1.01 Delay (s) 45.8 31.3 32.3 53.0 64.9 34.5 67.3 8.3 24.7 Approach Delay (s) 45.8 35.6 59.2 35.5 4.6 A.7 Approach LOS D D E D D E D HCM Average Control Delay 44.4 HCM Le		0.70	0.04		0.70	0.47		0.55	0.06		0.00	0.26	
Progression Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 0.32 0.99 Incremental Delay, d2 17.8 13.6 0.0 50.9 1.5 2.2 4.3 22.9 0.3 40.9 0.1 0.1 Delay (s) 64.4 45.9 16.0 103.4 32.9 32.3 53.0 64.9 34.5 67.3 8.3 24.7 Level of Service E D B F C C D E C E A C Approach Delay (s) 45.8 35.6 59.2 35.5 Approach LOS D E D E D E D E D E D E D E D E D E D E D E D E E D E E E E E E E													
Incremental Delay, d2 17.8 13.6 0.0 50.9 1.5 2.2 4.3 22.9 0.3 40.9 0.1 0.1 Delay (s) 64.4 45.9 16.0 103.4 32.9 32.3 53.0 64.9 34.5 67.3 8.3 24.7 Level of Service E D B F C C D E C E A C Approach Delay (s) 45.8 35.6 59.2 35.5 A D <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
Delay (s) 64.4 45.9 16.0 103.4 32.9 32.3 53.0 64.9 34.5 67.3 8.3 24.7 Level of Service E D B F C C D E C E A C Approach Delay (s) 45.8 35.6 59.2 35.5 A D E D D E D <													
Level of Service E D B F C C D E C E A C Approach Delay (s) 45.8 35.6 59.2 35.5 Approach LOS D													
Approach Delay (s) 45.8 35.6 59.2 35.5 Approach LOS D D E D Intersection Summary HCM Average Control Delay 44.4 HCM Level of Service D HCM Volume to Capacity ratio 0.93													
Approach LOS D D E D Intersection Summary HCM Average Control Delay 44.4 HCM Level of Service D HCM Volume to Capacity ratio 0.93				Б	Г		U	D		C	E		U
HCM Average Control Delay 44.4 HCM Level of Service D HCM Volume to Capacity ratio 0.93													
HCM Volume to Capacity ratio 0.93 Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 85.0% ICU Level of Service E Analysis Period (min) 15	Intersection Summary												
Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 85.0% ICU Level of Service E Analysis Period (min) 15	HCM Average Control Delay 44.4		44.4	F	ICM Le	vel of Se	ervice		D				
Actuated Cycle Length (s) 110.0 Sum of lost time (s) 12.0 Intersection Capacity Utilization 85.0% ICU Level of Service E Analysis Period (min) 15	HCM Volume to Capaci	ty ratio		0.93									
Intersection Capacity Utilization 85.0% ICU Level of Service E Analysis Period (min) 15				110.0	S	Sum of I	ost time	(s)		12.0			
Analysis Period (min) 15			i							E			

Horizon Year Alt 2 with Grade Separation and Coordination

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Kimley-Horn and Associates, Inc.

Barrio Logan CPU

Barrio Logan CPL 42: I-5 SB off-ram		n St	Hor	izon Y	ear Alt 2 with Grade Separation and Coordination Timing Plan: PM Peal
	7	1	ŧ		
Lane Group	EBR	NBT	SBT	ø4	
Lane Configurations	7	ሳቀ	***		
Volume (vph)	457	1530	743		
Turn Type	custom				
Protected Phases		2	6	4	
Permitted Phases	46				
Detector Phases	4 6	2	6		
Minimum Initial (s)		4.0	4.0	4.0	
Minimum Split (s)		20.0	20.0	20.0	
Total Split (s)	100.0	70.0	70.0	30.0	
Total Split (%)	100.0%	70.0%	70.0%	30%	
Yellow Time (s)		3.5	3.5	3.5	
All-Red Time (s)		0.5	0.5	0.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode		C-Max	C-Max	None	
Act Effct Green (s)	100.0	84.5	84.5		
Actuated g/C Ratio	1.00	0.84	0.84		
v/c Ratio	0.31	0.56	0.19		
Control Delay	0.5	0.5	2.4		
Queue Delay	0.0	0.9	0.0		
Total Delay	0.5	1.4	2.4		
LOS	A	А	Α		
Approach Delay		1.4	2.4		
Approach LOS		A	Α		
Intersection Summary	/				
Cycle Length: 100	,				
Actuated Cycle Lengt	h: 100				
Offset: 7 (7%), Refere		hase 2	NBT an	d 6:SB	C. Start of Green
Natural Cycle: 60				0.00	· · · · · · · · · · · · · · · · · · ·
Control Type: Actuate	d-Coordi	nated			
Maximum v/c Ratio: (
Intersection Signal De				-1	ntersection LOS: A
Intersection Capacity		1 49.3%			CU Level of Service A
Analysis Period (min)					

Splits and Phases: 42: I-5 SB off-ramp & 28th St

† _{σ2}	~> ø4
70 s	30 s
v ∞6	
70 s	

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Barrio Logan CPU
42: I-5 SB off-ramp & 28th St

Horizon Year Alt 2 with Grade Separation and Coordination Timing Plan: PM Peak

	\mathbf{r}	Ť	Ŧ								
Lane Group	EBR	NBT	SBT								
Lane Group Flow (vph)	497	1663	808								
v/c Ratio	0.31	0.56	0.19								
Control Delay	0.5	0.5	2.4								
Queue Delay	0.0	0.9	0.0								
Total Delay	0.5	1.4	2.4								
Queue Length 50th (ft)	0	1	31								
Queue Length 95th (ft)	0	m1	m44								
Internal Link Dist (ft)		291	302								
Turn Bay Length (ft)											
Base Capacity (vph)	1611	2991	4297								
Starvation Cap Reductn		945	0								
Spillback Cap Reductn	0	0	0								
Storage Cap Reductn	0	0	0								
Reduced v/c Ratio	0.31	0.81	0.19								
Intersection Summary											
m Volume for 95th per											

Barrio Logan CPU 42: I-5 SB off-ramp	& 28th	St	Hor	izon Y	ear Alt	t 2 with	Grad	e Sepa			oordin lan: PM	
i	۶	-	\mathbf{r}	1	+	•	1	Ť	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			74					44			444	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0					4.0			4.0	
Lane Util. Factor			1.00					0.95			0.91	
Frt			0.86					1.00			1.00	
Flt Protected			1.00					1.00			1.00	
Satd. Flow (prot)			1611					3539			5085	
Flt Permitted			1.00					1.00			1.00	
Satd. Flow (perm)			1611					3539			5085	
Volume (vph)	0	0	457	0	0	0	0	1530	0	0	743	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0.02	0.02	497	0.02	0.02	0.02	0.02	1663	0.02	0.02	808	0.02
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	497	0	0	0	0	1663	0	0	808	0
Turn Type			ustom	0	<u> </u>	0	0	1000	<u> </u>	<u> </u>	000	
Protected Phases		U	usion					2			6	
Permitted Phases			46					2			0	
Actuated Green, G (s)			100.0					84.5			84.5	
Effective Green, g (s)			100.0					84.5			84.5	
Actuated g/C Ratio			1.00					0.84			0.84	
Clearance Time (s)			1.00					4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)			1611					2990			4297	
v/s Ratio Prot			1011					2990 c0.47			0.16	_
			-0.04					CU.47			0.16	
v/s Ratio Perm			c0.31					0.50			0.40	_
v/c Ratio			0.31					0.56			0.19	
Uniform Delay, d1			0.0					2.3			1.4	
Progression Factor			1.00					0.09			1.57	
Incremental Delay, d2			0.1					0.2			0.0	_
Delay (s)			0.1					0.4			2.3	
Level of Service		0.1	A		0.0			A			A	
Approach Delay (s)		0.1 A			0.0			0.4			2.3	
Approach LOS		А			A			A			A	
Intersection Summary												
HCM Average Control D)elay		0.9	F	ICM Le	vel of Se	ervice		Α			
HCM Volume to Capacit	ty ratio		0.53									
Actuated Cycle Length (100.0	S	Sum of I	ost time	(s)		4.0			
Intersection Capacity Ut			49.3%	10	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									
c Critical Lane Group												

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