

From: Mychal Loomis, Kimley-Horn and Associates

To: Marlon Pangilinan and George Ghossain, City of San Diego

Date: March 30, 2016

Re: Uptown Community Planning Group Proposed Residential Densities Traffic Evaluation
Summary of Findings for the Cluster Community Plan Update

This memorandum summarizes the results of the traffic evaluation to reflect residential densities proposed by the Community Planning Group (CPG) within the study area of the Cluster Community Plan Update (CPU). City staff provided the specific changes requested by the CPG for the traffic analysis zones (TAZs) in the community where residential densities would be modified, including trip generation rates and high-level assumptions of traffic distribution patterns.

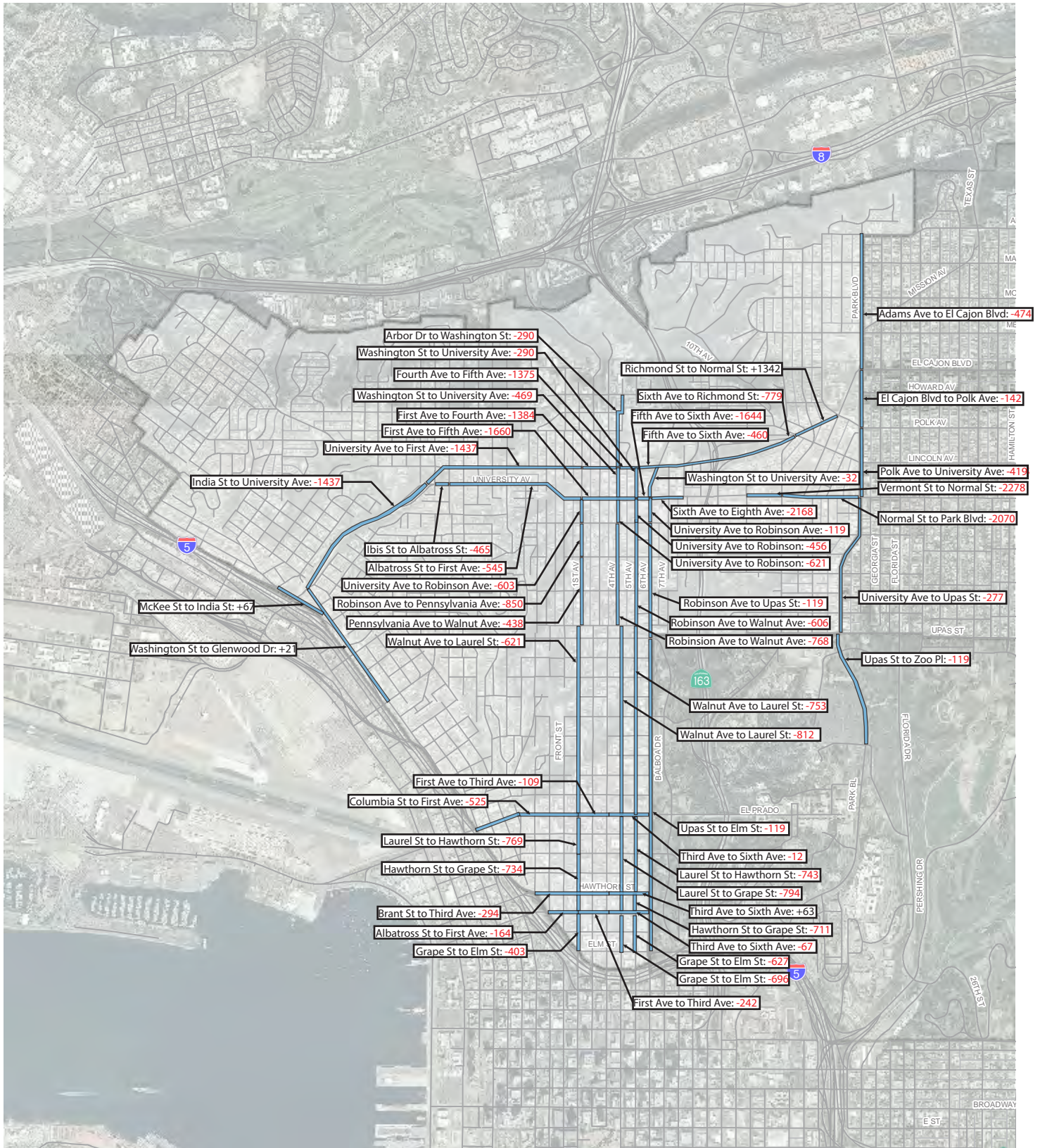
Approach Methodology

The City-provided TAZ changes were incorporated into the analysis completed for future year by adjusting roadway segment volumes where applicable given the location of the TAZ. Adjusted TAZs were residential and mixed land uses. Given the TAZs proximity to local freeways it was assumed that the trip distribution of these uses were similar and primarily distribute to and from the freeways via major local arterials. For TAZs located near the southern end of the Uptown community, approximately 15% of traffic was sent to and from the downtown area. The collector roads feeding the local arterials were taken into account where applicable.

After daily trip volumes were adjusted and assigned to the roadway network, a comparative assessment was conducted between the previous roadway segment volumes and the adjusted roadway segment volumes. Typically, daily volumes fluctuate no more than 10% throughout a typical week (i.e., Tuesday, Wednesday, and Thursday typical weekdays). To ensure changes in ADT weren't attributed to this daily volume fluctuation, segments were identified for further consideration if the volumes when compared to the original analysis were greater than a 5% difference for at least two consecutive segments, or greater than 10% for any single segment. Locations where changes resulted in less than this criteria was considered a marginal change whose impacts to the traffic analysis would likely be negligible or de minimis.

This analysis also includes the City-staff proposed residential densities for the North Park community.

A full list of all TAZ assumptions and the corresponding change in volume along each roadway segment can be seen in the Attachments.



Locations Requiring Additional Assessment

The locations described below and outlined in Exhibit 2 were selected for additional assessment using the criteria given the percent difference in volume subsequent to the updated residential densities. The updated results for these locations are provided in this evaluation. Significant impacts are not expected at the remaining CPU study intersection.

Roadway Segments

First Avenue between Laurel Street and Elm Street: 9-11% decrease

Fourth Avenue between Washington Street and Elm Street: 5-7% decrease

Fifth Avenue between Walnut Street and Elm Street: 5-6% decrease

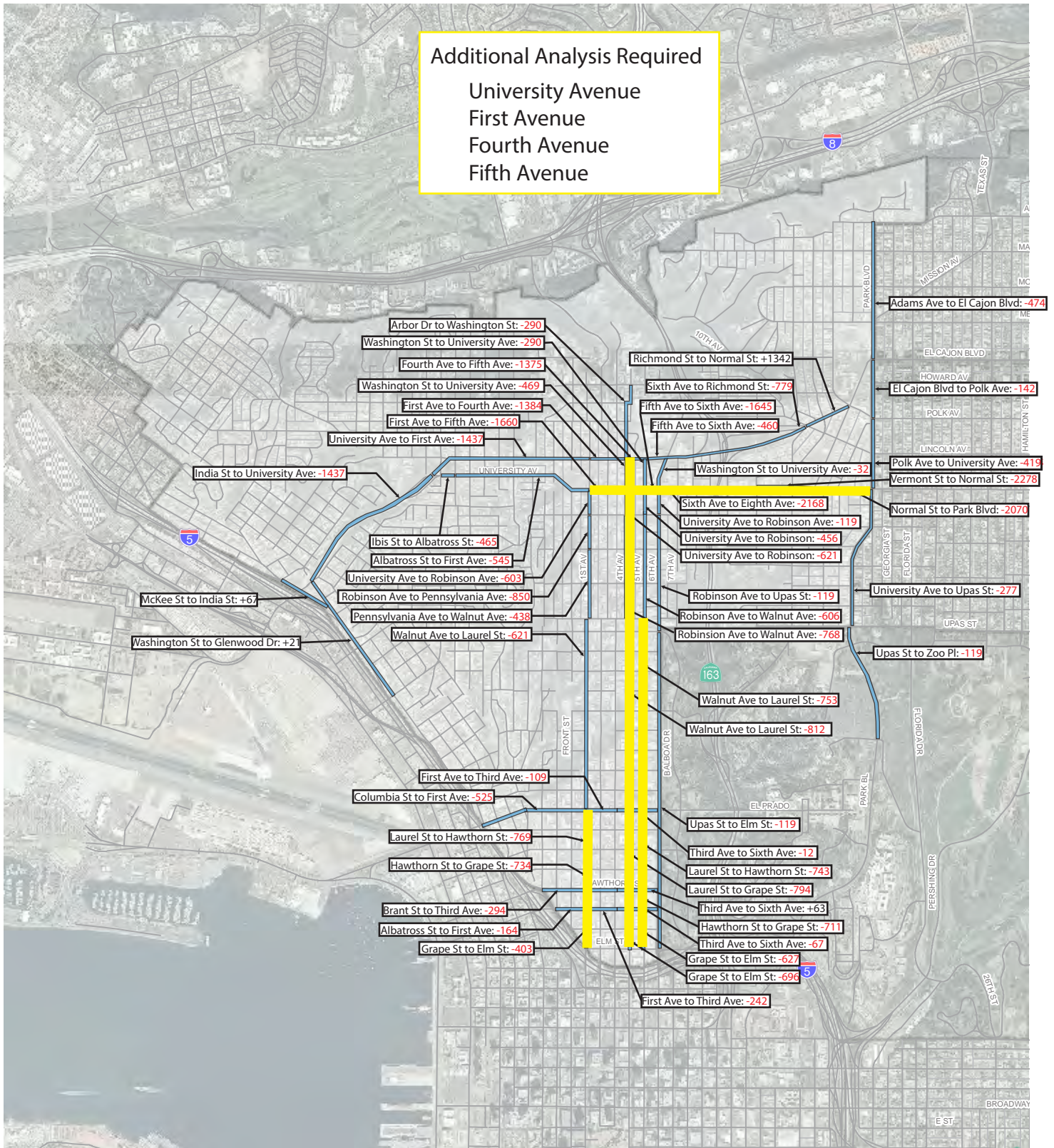
University Avenue between First Avenue and Park Boulevard: 7-12% decrease

Intersections

4. Washington Street and Fourth Avenue
 - a. Decrease movements to and from the south leg of intersection by 5%
12. University Avenue and Sixth Avenue
 - a. Decrease movements to and from the east and west legs of intersection by 7%

The following intersections were found to operate at LOS D or better during both peak periods in the original traffic evaluation. Volumes at these locations would be decreased with the proposed residential densities and these intersections would be expected to operate similar or better than what was previously evaluated. No further analysis was performed at these locations as there would not be a change to the conclusions or number of impacts to the vehicle network by reducing volumes at these locations.

10. University Avenue and Fourth Avenue
11. University Avenue and Fifth Avenue
13. University Avenue and Tenth Street
14. University Avenue and Normal Street
15. University Avenue and Park Boulevard
16. Fourth Avenue and Robinson Avenue
23. Fourth Avenue and Laurel Street
24. Fifth Avenue and Laurel Street
28. First Avenue and Elm Street



Potential Impacts to Roadway Segments

Table 1 provides a comparison of roadway segment analysis between the land use assumptions originally studied in the CPU and the CPG-preferred residential densities. Table 2 provides an updated roadway segment impact analysis when compared to existing conditions. The previous impact analysis tables are provided as an Attachment for reference, and would be updated with tables in this document.

The decrease in volumes on First Avenue would result in similar roadway operations between Laurel Street and Elm Street. The volume reductions would remove a potential impact for the segment of First Avenue between Hawthorn Street and Grape Street.

The decrease in volumes on Fourth Avenue would result in similar or improved roadway operations between Washington Street and Elm Street. The volume reductions would remove a potential impact for the segment of Fourth Avenue between Walnut Street and Laurel Street.

The decrease in volumes on Fifth Avenue would result in similar roadway operations between Walnut Street and Elm Street. The volume reductions would not remove any potential impacts on Fifth Avenue.

The decrease in volumes on University Avenue would result in similar roadway operations between First Avenue and Park Boulevard. The volume reductions would not remove any potential impacts on University Avenue.

The proposed change in residential densities would remove two potential impacts to roadway segments.

Potential Impacts to Intersections

Table 3 provides a comparison of intersection analysis between the land use assumptions originally studied in the CPU and the CPG-preferred residential densities. Table 4 provides an updated intersection impact analysis when compared to existing conditions. The previous impact analysis tables are provided as an Attachment for reference, and would be updated with tables in this document.

The decrease in volumes at Washington Street and Fourth Avenue would result in similar operations. There would continue to be a significant impact during the afternoon peak.

The decrease in volumes at University Avenue and Sixth Avenue would remove the significant impact during the afternoon peak. This intersection would no longer have a potentially significant impact.

The proposed change in residential densities would remove one potential impact to intersections.

Table 1
Roadway Segment LOS Summary

ROADWAY SEGMENT	ROADWAY FUNCTIONAL CLASSIFICATION	LOS E CAPACITY	CPU STUDY EVALUATION			CPG-PREFERRED RESIDENTIAL DENSITIES			
			FUTURE ADT	V/C RATIO (a)	LOS	CHANGE IN ADT	FUTURE ADT	V/C RATIO (a)	LOS
First Ave									
Laurel St to Hawthorn St	2 Lane Collector (Multi-family, commercial-industrial fronting)	8,000	8,400	1.050	F	-768.6	7,631	0.954	E
Hawthorn St to Grape St	2 Lane Collector (Multi-family, commercial-industrial fronting)	8,000	6,800	0.850	E	-733.5	6,066	0.758	D
Grape St to Elm St	2 Lane Collector (one-way)	17,500	4,500	0.257	A	-402.6	4,097	0.234	A
Fourth Ave									
Washington St to University Ave	2 Lane Collector (one-way)	17,500	10,400	0.594	C	-486.9	9,913	0.566	C
University Ave to Robinson Ave	2 Lane Collector (one-way)	17,500	12,900	0.737	D	-621	12,279	0.702	C
Robinson Ave to Walnut Ave	2 Lane Collector (one-way)	17,500	11,400	0.651	C	-767.7	10,632	0.608	C
Walnut Ave to Laurel St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	15,100	0.863	E	-811.8	14,288	0.816	D
Laurel St to Grape St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	13,700	0.783	D	-793.8	12,906	0.737	D
Grape St to Elm St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	9,700	0.554	C	-695.7	9,004	0.515	B
Fifth Ave									
Walnut Ave to Laurel St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	14,800	0.846	D	-753.3	14,047	0.803	D
Laurel St to Hawthorn St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	14,400	0.823	D	-743.4	13,657	0.780	D
Hawthorn St to Grape St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	14,300	0.817	D	-711	13,589	0.777	D
Grape St to Elm St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	10,100	0.577	C	-627.3	9,473	0.541	B
University Ave									
First Ave to Fourth Ave	2 Lane Collector (no fronting property)	10,000	14,100	1.410	F	-1659.6	12,440	1.244	F
Fourth Ave to Fifth Ave	2 Lane Collector (continuous left-turn lane)	15,000	21,600	1.440	F	-1659.6	19,940	1.329	F
Fifth Ave to Sixth Ave	4 Lane Collector	30,000	24,900	0.830	D	-1644.3	23,256	0.775	D
Sixth Ave to Eighth Ave	4 Lane Collector (no center lane)	15,000	29,300	1.953	F	-2168.1	27,132	1.809	F
Vermont St to Normal St	4 Lane Major Arterial	40,000	25,600	0.640	C	-2277.9	23,322	0.583	C
Normal St to Park Blvd	4 Lane Collector (no center lane)	15,000	21,200	1.413	F	-2070	19,130	1.275	F

Notes:

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

Capacity for non-standard roadway classifications were provided by City of San Diego staff.

(a) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.

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ROADWAY SEGMENT	ROADWAY FUNCTIONAL CLASSIFICATION	LOSE CAPACITY	EXISTING		UPDATED FUTURE			Δ in ADT	Δ in V/C	SIGNIFICANT?	
			ADT	V/C RATIO (a)	LOS	ADT	V/C RATIO (a)				LOS
First Ave											
Laurel St to Hawthorn St	2 Lane Collector (Multi-family, commercial-industrial fronting)	8,000	7,290	0.911	E	7,631	0.954	E	341	0.043	
Hawthorn St to Grape St	2 Lane Collector (Multi-family, commercial-industrial fronting)	8,000	3,810	0.476	C	6,066	0.758	D	2,256	0.282	
Grape St to Elm St	2 Lane Collector (one-way)	17,500	3,285	0.188	A	4,097	0.234	A	812	0.046	
Fourth Ave											
Washington St to University Ave	2 Lane Collector (one-way)	17,500	10,400	0.594	C	9,913	0.566	C	-487	-0.028	
University Ave to Robinson Ave	2 Lane Collector (one-way)	17,500	11,800	0.674	C	12,279	0.702	C	479	0.028	
Robinson Ave to Walnut Ave	2 Lane Collector (one-way)	17,500	6,946	0.397	A	10,632	0.608	C	3,686	0.211	
Walnut Ave to Laurel St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	8,492	0.485	B	14,288	0.816	D	5,796	0.331	
Laurel St to Grape St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	7,790	0.445	B	12,906	0.737	D	5,116	0.292	
Grape St to Elm St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	7,570	0.433	B	9,004	0.515	B	1,434	0.082	
Fifth Ave											
Walnut Ave to Laurel St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	11,400	0.651	C	14,047	0.803	D	2,647	0.152	
Laurel St to Hawthorn St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	9,260	0.529	B	13,657	0.780	D	4,397	0.251	
Hawthorn St to Grape St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	10,045	0.574	C	13,589	0.777	D	3,544	0.203	
Grape St to Elm St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	9,220	0.527	B	9,473	0.541	B	253	0.014	
University Ave											
First Ave to Fourth Ave	2 Lane Collector (no fronting property)	10,000	11,750	1.175	F	12,440	1.244	F	690	0.069	
Fourth Ave to Fifth Ave	2 Lane Collector (continuous left-turn lane)	15,000	20,250	1.350	F	19,940	1.329	F	-309.6	-0.021	
Fifth Ave to Sixth Ave	4 Lane Collector	30,000	21,184	0.706	D	23,256	0.775	D	2,072	0.069	
Sixth Ave to Eighth Ave	4 Lane Collector (no center lane)	15,000	24,400	1.627	F	27,132	1.809	F	2,732	0.182	
Vermont St to Normal St	4 Lane Major Arterial	40,000	23,938	0.598	C	23,322	0.583	C	-616	-0.015	
Normal St to Park Blvd	4 Lane Collector (no center lane)	15,000	16,275	1.085	F	19,130	1.275	F	2,855	0.190	

Notes:
Bold values indicate roadway segments operating at LOS E or F.
 Capacity for non-standard roadway classifications were provided by City of San Diego staff.
 (a) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.

		INTERSECTION	PEAK HOUR	CPU STUDY EVALUATION		CPG-PREFERRED RESIDENTIAL DENSITIES	
				FUTURE DELAY (a)	FUTURE LOS (b)	FUTURE DELAY (a)	FUTURE LOS (b)
4		Washington St & Fourth Ave	AM	31.8	C	31.2	C
			PM	59.9	E	56.6	E
12		University Ave & Sixth Ave	AM	38.7	D	37.0	D
			PM	55.3	E	51.3	D

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 one-way or 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 8

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INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	Existing		Future		SIGNIFICANT?
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	
4 Washington St & Fourth Ave	Signal	AM	25.2	C	31.2	C	NO
		PM	37.3	D	56.6	E	YES
12 University Ave & Sixth Ave	Signal	AM	32.9	C	37.0	D	NO
		PM	54.8	D	51.3	D	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 one-way or 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 8

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Attachments

- i. TAZ Distribution Assumptions*
- ii. Original Roadway Segment Impact Analysis Summary*
- iii. Original Intersection Impact Analysis Summary*
- iv. Synchro Worksheets*

ATTACHMENT
Future Year - Original Evaluation
Roadway Segment Impact Analysis Summary

ROADWAY SEGMENT	ROADWAY FUNCTIONAL CLASSIFICATION	LOS E CAPACITY	EXISTING			CPU FUTURE			Δ in ADT	Δ in V/C	SIGNIFI CANT?
			ADT	V/C RATIO (a)	LOS	ADT	V/C RATIO (a)	LOS			
First Ave											
Laurel St to Hawthorn St	2 Lane Collector (Multi-family, commercial-industrial fronting)	8,000	7,290	0.911	E	8,400	1.050	F	1110	0.139	YES
Hawthorn St to Grape St	2 Lane Collector (Multi-family, commercial-industrial fronting)	8,000	3,810	0.476	C	6,800	0.850	E	2990	0.374	YES
Grape St to Elm St	2 Lane Collector (one-way)	17,500	3,285	0.188	A	4,500	0.257	A	1215	0.069	NO
Fourth Ave											
Washington St to University Ave	2 Lane Collector (one-way)	17,500	10,400	0.594	C	10,400	0.594	C	0	0.000	NO
University Ave to Robinson Ave	2 Lane Collector (one-way)	17,500	11,800	0.674	C	12,900	0.737	D	1100	0.063	NO
Robinson Ave to Walnut Ave	2 Lane Collector (one-way)	17,500	6,946	0.397	A	11,400	0.651	C	4454	0.254	NO
Walnut Ave to Laurel St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	8,492	0.485	B	15,100	0.863	E	6608	0.378	YES
Laurel St to Grape St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	7,790	0.445	B	13,700	0.783	D	5910	0.338	NO
Grape St to Elm St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	7,570	0.433	B	9,700	0.554	C	2130	0.121	NO
Fifth Ave											
Walnut Ave to Laurel St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	11,400	0.651	C	14,800	0.846	D	3400	0.195	NO
Laurel St to Hawthorn St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	9,260	0.529	B	14,400	0.823	D	5140	0.294	NO
Hawthorn St to Grape St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	10,045	0.574	C	14,300	0.817	D	4255	0.243	NO
Grape St to Elm St	3 Lane Collector (one-way w/ one lane dedicated for multi-modal)	17,500	9,220	0.527	B	10,100	0.577	C	880	0.050	NO
University Ave											
First Ave to Fourth Ave	2 Lane Collector (no fronting property)	10,000	11,750	1.175	F	14,100	1.410	F	2350	0.235	YES
Fourth Ave to Fifth Ave	2 Lane Collector (continuous left-turn lane)	15,000	20,250	1.350	F	21,600	1.440	F	1350	0.090	YES
Fifth Ave to Sixth Ave	4 Lane Collector	30,000	21,184	0.706	D	24,900	0.830	D	3716	0.124	NO
Sixth Ave to Eighth Ave	4 Lane Collector (no center lane)	15,000	24,400	1.627	F	29,300	1.953	F	4900	0.326	YES
Vermont St to Normal St	4 Lane Major Arterial	40,000	23,938	0.598	C	25,600	0.640	C	1662	0.042	NO
Normal St to Park Blvd	4 Lane Collector (no center lane)	15,000	16,275	1.085	F	21,200	1.413	F	4925	0.328	YES

Notes:

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

Capacity for non-standard roadway classifications were provided by City of San Diego staff.

(a) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.

ATTACHMENT
Future Year - Original Evaluation
Intersection Impact Analysis Summary

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	Existing		Future			
				DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	Δ (c)	SIGNIFICANT?
4	Washington St & Fourth Ave	Signal	AM	25.2	C	31.8	C	6.6	NO
			PM	37.3	D	59.9	E	22.6	YES
12	University Ave & Sixth Ave	Signal	AM	32.9	C	38.7	D	5.8	NO
			PM	54.8	D	55.3	E	0.5	YES

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 one-way or 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 8

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HCM Signalized Intersection Capacity Analysis

7: Fourth Ave & Washington St


3/29/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	507	106	457	1099	176	0	0	0	312	203	88
Future Volume (vph)	81	507	106	457	1099	176	0	0	0	312	203	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9					4.9	4.9	4.9
Lane Util. Factor	1.00	0.95		0.97	0.95					0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99					1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00					1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98					1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)	1770	3396		3433	3421					1681	1750	1451
Flt Permitted	0.95	1.00		0.95	1.00					0.95	0.99	1.00
Satd. Flow (perm)	1770	3396		3433	3421					1681	1750	1451
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)	88	551	115	497	1195	191	0	0	0	339	221	96
RTOR Reduction (vph)	0	14	0	0	8	0	0	0	0	0	0	55
Lane Group Flow (vph)	88	652	0	497	1378	0	0	0	0	275	285	41
Confl. Peds. (#/hr)			44			28			1			65
Confl. Bikes (#/hr)			10			10						4
Turn Type	Prot	NA		Prot	NA					Perm	NA	Perm
Protected Phases	5	2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)	8.7	52.2		18.6	62.1					25.0	25.0	25.0
Effective Green, g (s)	8.7	52.2		18.6	62.1					25.0	25.0	25.0
Actuated g/C Ratio	0.08	0.47		0.17	0.56					0.23	0.23	0.23
Clearance Time (s)	4.4	4.9		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)	2.0	0.2		1.0	0.2					1.0	1.0	1.0
Lane Grp Cap (vph)	139	1611		580	1931					382	397	329
v/s Ratio Prot	0.05	0.19		c0.14	c0.40							
v/s Ratio Perm										c0.16	0.16	0.03
v/c Ratio	0.63	0.40		0.86	0.71					0.72	0.72	0.13
Uniform Delay, d1	49.1	18.8		44.4	17.5					39.3	39.2	33.8
Progression Factor	1.00	1.00		1.01	1.08					1.00	1.00	1.00
Incremental Delay, d2	6.7	0.8		10.3	2.0					5.3	5.1	0.1
Delay (s)	55.8	19.6		55.3	20.9					44.6	44.3	33.9
Level of Service	E	B		E	C					D	D	C
Approach Delay (s)		23.8			30.0			0.0			42.9	
Approach LOS		C			C			A			D	
Intersection Summary												
HCM 2000 Control Delay		31.2			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.76										
Actuated Cycle Length (s)		110.0			Sum of lost time (s)			14.2				
Intersection Capacity Utilization		77.9%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

18: Sixth Ave & University Ave




















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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕		↔	↕↕	↔	↔	↕↕		↔	↕↕	↔
Traffic Volume (vph)	448	197	42	153	442	171	68	698	44	163	1006	504
Future Volume (vph)	448	197	42	153	442	171	68	698	44	163	1006	504
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9	4.4	4.4	5.4		4.4	5.4	4.4
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	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	0.97		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3402		1770	3539	1558	1770	3503		1770	3539	1565
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3402		1770	3539	1558	1770	3503		1770	3539	1565
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)	487	214	46	166	480	186	74	759	48	177	1093	548
RTOR Reduction (vph)	0	18	0	0	0	52	0	5	0	0	0	62
Lane Group Flow (vph)	487	242	0	166	480	134	74	802	0	177	1093	486
Confl. Peds. (#/hr)			35			4			7			4
Confl. Bikes (#/hr)			10			17						2
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases						6						4
Actuated Green, G (s)	17.0	21.4		12.5	16.9	30.0	6.8	33.9		13.1	40.2	57.2
Effective Green, g (s)	17.0	21.4		12.5	16.9	30.0	6.8	33.9		13.1	40.2	57.2
Actuated g/C Ratio	0.17	0.21		0.12	0.17	0.30	0.07	0.34		0.13	0.40	0.57
Clearance Time (s)	4.4	4.9		4.4	4.9	4.4	4.4	5.4		4.4	5.4	4.4
Vehicle Extension (s)	3.0	2.2		2.0	2.2	2.0	2.0	3.8		2.0	3.8	3.0
Lane Grp Cap (vph)	583	728		221	598	467	120	1187		231	1422	895
v/s Ratio Prot	c0.14	0.07		0.09	c0.14	0.04	0.04	0.23		c0.10	c0.31	0.09
v/s Ratio Perm						0.05						0.22
v/c Ratio	0.84	0.33		0.75	0.80	0.29	0.62	0.68		0.77	0.77	0.54
Uniform Delay, d1	40.1	33.3		42.2	39.9	26.8	45.3	28.3		42.0	25.9	13.3
Progression Factor	0.97	1.17		1.00	1.00	1.00	0.96	1.41		1.00	1.00	1.00
Incremental Delay, d2	8.8	0.1		12.0	7.3	0.1	5.7	2.7		12.8	4.0	0.7
Delay (s)	47.9	38.9		54.2	47.3	26.9	49.1	42.7		54.7	29.9	14.0
Level of Service	D	D		D	D	C	D	D		D	C	B
Approach Delay (s)		44.8			44.1			43.2			27.5	
Approach LOS		D			D			D			C	
Intersection Summary												
HCM 2000 Control Delay			37.0									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			100.0									Sum of lost time (s) 19.1
Intersection Capacity Utilization			73.9%									ICU Level of Service D
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Fourth Ave & Washington St

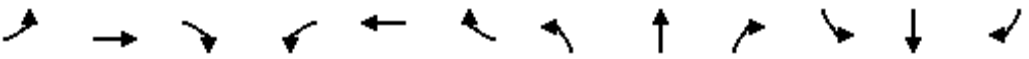
3/29/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	1103	107	499	908	89	0	0	0	813	232	107
Future Volume (vph)	56	1103	107	499	908	89	0	0	0	813	232	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9					4.9	4.9	4.9
Lane Util. Factor	1.00	0.95		0.97	0.95					0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99					1.00	1.00	0.97
Flpb, ped/bikes	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	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)	1770	3464		3433	3454					1681	1722	1536
Flt Permitted	0.95	1.00		0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)	1770	3464		3433	3454					1681	1722	1536
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	1199	116	542	987	97	0	0	0	884	252	116
RTOR Reduction (vph)	0	6	0	0	6	0	0	0	0	0	0	68
Lane Group Flow (vph)	61	1309	0	542	1078	0	0	0	0	566	570	48
Confl. Peds. (#/hr)			43			35						10
Confl. Bikes (#/hr)			10			10			1			10
Turn Type	Prot	NA		Prot	NA					Perm	NA	Perm
Protected Phases	5	2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)	7.8	45.9		19.6	57.7					40.3	40.3	40.3
Effective Green, g (s)	7.8	45.9		19.6	57.7					40.3	40.3	40.3
Actuated g/C Ratio	0.06	0.38		0.16	0.48					0.34	0.34	0.34
Clearance Time (s)	4.4	4.9		4.4	4.9					4.9	4.9	4.9
Vehicle Extension (s)	2.0	0.2		1.0	0.2					1.0	1.0	1.0
Lane Grp Cap (vph)	115	1324		560	1660					564	578	515
v/s Ratio Prot	0.03	c0.38		c0.16	0.31							
v/s Ratio Perm										c0.34	0.33	0.03
v/c Ratio	0.53	0.99		0.97	0.65					1.00	0.99	0.09
Uniform Delay, d1	54.3	36.8		49.9	23.5					39.9	39.6	27.3
Progression Factor	1.00	1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2	2.3	22.1		29.5	2.0					38.8	33.5	0.0
Delay (s)	56.7	58.9		79.4	25.5					78.6	73.1	27.4
Level of Service	E	E		E	C					E	E	C
Approach Delay (s)		58.8			43.5			0.0			71.4	
Approach LOS		E			D			A			E	
Intersection Summary												
HCM 2000 Control Delay			56.6			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				14.2		
Intersection Capacity Utilization			88.9%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

18: Sixth Ave & University Ave

3/29/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↱	↰↱		↰	↰↱	↰	↰	↰↱		↰	↰↱	↰
Traffic Volume (vph)	345	427	65	153	498	159	68	946	117	254	788	479
Future Volume (vph)	345	427	65	153	498	159	68	946	117	254	788	479
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9	4.4	4.4	5.4		4.4	5.4	4.4
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00	0.89	1.00	1.00		1.00	1.00	0.96
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	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3359		1770	3539	1412	1770	3466		1770	3539	1513
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3359		1770	3539	1412	1770	3466		1770	3539	1513
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)	375	464	71	166	541	173	74	1028	127	276	857	521
RTOR Reduction (vph)	0	9	0	0	0	35	0	7	0	0	0	53
Lane Group Flow (vph)	375	526	0	166	541	138	74	1148	0	276	857	468
Confl. Peds. (#/hr)			115			121			16			34
Confl. Bikes (#/hr)			29			26			4			6
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases						6						4
Actuated Green, G (s)	16.3	30.5		15.3	29.5	51.3	8.3	43.3		21.8	56.8	73.1
Effective Green, g (s)	16.3	30.5		15.3	29.5	51.3	8.3	43.3		21.8	56.8	73.1
Actuated g/C Ratio	0.13	0.23		0.12	0.23	0.39	0.06	0.33		0.17	0.44	0.56
Clearance Time (s)	4.4	4.9		4.4	4.9	4.4	4.4	5.4		4.4	5.4	4.4
Vehicle Extension (s)	3.0	2.2		2.0	2.2	2.0	2.0	3.8		2.0	3.8	3.0
Lane Grp Cap (vph)	430	788		208	803	557	113	1154		296	1546	850
v/s Ratio Prot	c0.11	c0.16		0.09	0.15	0.04	0.04	c0.33		c0.16	0.24	0.07
v/s Ratio Perm						0.06						0.24
v/c Ratio	0.87	0.67		0.80	0.67	0.25	0.65	0.99		0.93	0.55	0.55
Uniform Delay, d1	55.8	45.1		55.8	45.9	26.4	59.5	43.2		53.4	27.2	18.0
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	17.4	4.4		17.7	4.5	0.1	9.9	25.0		34.4	0.5	0.8
Delay (s)	73.2	49.6		73.6	50.3	26.5	69.4	68.3		87.8	27.7	18.8
Level of Service	E	D		E	D	C	E	E		F	C	B
Approach Delay (s)		59.3			50.0			68.3			34.9	
Approach LOS		E			D			E			C	
Intersection Summary												
HCM 2000 Control Delay			51.3									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			130.0									Sum of lost time (s) 19.1
Intersection Capacity Utilization			93.2%									ICU Level of Service F
Analysis Period (min)			15									
c Critical Lane Group												

ROADWAY SEGMENT	TAZ 4740		TAZ 3142		TAZ 3163		TAZ 3186		TAZ 3216		TAZ 3229		TAZ 3252		TAZ 3296	
	Change in ADT = -396		Change in ADT = 0		Change in ADT = 0		Change in ADT = -474		Change in ADT = 0		Change in ADT = 0		Change in ADT = 0		Change in ADT = -108	
	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign
First Ave																
Arbor Dr to Washington Ave		0		0		0		0		0		0		0		0
Washington Ave to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Pennsylvania Ave		0		0		0		0		0		0		0		0
Pennsylvania Ave to Walnut Ave		0		0		0		0		0		0		0		0
Walnut Ave to Laurel St		0		0		0		0		0		0		0		0
Laurel St to Juniper St		0		0		0		0		0		0		0		0
Juniper St to Grape St		0		0		0		0		0		0		0		0
Grape St to Elm St		0		0		0		0		0		0		0		0
Fourth Ave																
Arbor Dr to Washington Ave		0		0		0		0		0		0		0		0
Washington Ave to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Walnut Ave		0		0		0		0		0		0		0		0
Walnut Ave to Laurel St		0		0		0		0		0		0		0		0
Laurel St to Grape St		0		0		0		0		0		0		0		0
Grape St to Elm St		0		0		0		0		0		0		0		0
Fifth Ave																
Washington Ave to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Walnut Ave		0		0		0		0		0		0		0		0
Walnut St to Laurel St		0		0		0		0		0		0		0		0
Laurel St to Hawthorn St		0		0		0		0		0		0		0		0
Hawthorn St to Grape St		0		0		0		0		0		0		0		0
Grape St to Elm St		0		0		0		0		0		0		0		0
Sixth Ave																
Washington St to University Ave		0		0		0		0		0		0		0	30%	-32.4
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Upas St		0		0		0		0		0		0		0		0
Upas St to Laurel St		0		0		0		0		0		0		0		0
Laurel St to Juniper St		0		0		0		0		0		0		0		0
Juniper St to Grape St		0		0		0		0		0		0		0		0
Grape St to Elm St		0		0		0		0		0		0		0		0
Grape St																
Albatross St to First Ave		0		0		0		0		0		0		0		0
First Ave to Third Ave		0		0		0		0		0		0		0		0
Third Ave to Sixth Ave		0		0		0		0		0		0		0		0
Hawthorn St																
Brant St to First Ave		0		0		0		0		0		0		0		0
First Ave to Third Ave		0		0		0		0		0		0		0		0
Third Ave to Sixth Ave		0		0		0		0		0		0		0		0
India St																
Washington St to Glenwood Dr		0		0		0		0		0		0		0		0
Glenwood Dr to Sassafras St		0		0		0		0		0		0		0		0
Sassafras St to Redwood St		0		0		0		0		0		0		0		0
Redwood St to Palm St		0		0		0		0		0		0		0		0
Laurel St																
Columbia St to Union St		0		0		0		0		0		0		0		0
Union St to First Ave		0		0		0		0		0		0		0		0
First Ave to Third Ave		0		0		0		0		0		0		0		0
Third Ave to Sixth Ave		0		0		0		0		0		0		0		0
Park Blvd																
Adams Ave to Mission Ave		0	70%	0	100%	0	100%	-474	100%	0		0		0		0
Mission Ave to El Cajon Blvd		0	70%	0	100%	0	100%	-474	100%	0		0		0		0
El Cajon Blvd to Polk Ave		0		0	30%	0	30%	-142.2	30%	0		0		0		0
Polk Ave to University Ave	70%	-277.2		0	30%	0	30%	-142.2	30%	0		0		0		0
University Ave to Robinson Ave	70%	-277.2		0		0		0		0		0		0		0
Robinson Ave to Upas St	70%	-277.2		0		0		0		0		0		0		0
Upas St to Zoo Pl	30%	-118.8		0		0		0		0		0		0		0
San Diego Ave																
Hortensia St to McKee St		0		0		0		0		0		0		0		0
McKee St to Washington St		0		0		0		0		0		0		0		0
Washington St to India St		0		0		0		0		0		0		0		0
University Ave																
Ibis St to Albatross St		0		0		0		0		0		0		0		0
Albatross St to First Ave		0		0		0		0		0		0		0		0
First Ave to Fifth Ave		0		0		0		0		0		0		0		0
Fifth Ave to Sixth Ave		0		0		0		0		0		0		0		0
Sixth Ave to Eighth Ave		0		0		0		0		0		0		0	30%	-32.4
Vermont St to Richmond St		0	70%	0	30%	0	30%	-142.2	30%	0		0		0		0
Richmond St to Park Blvd		0	70%	0	30%	0	30%	-142.2	30%	0		0		0		0
Washington St																
India St to University Ave		0		0	70%	0	70%	-331.8	70%	0	70%	0	70%	0	70%	-75.6
University Ave to First Ave		0		0	70%	0	70%	-331.8	70%	0	70%	0	70%	0	70%	-75.6
First Ave to Fourth Ave		0		0	70%	0	70%	-331.8	70%	0		0		0	70%	-75.6
Fourth Ave to Fifth Ave		0		0	70%	0	70%	-331.8	70%	0		0		0	70%	-75.6
Fifth Ave to Sixth Ave		0		0	70%	0	70%	-331.8	70%	0		0		0	70%	-75.6
Sixth Ave to Richmond St		0		0	70%	0	70%	-331.8	70%	0		0		0	70%	-75.6
Richmond St to Normal St		0		0	70%	0	70%	-331.8	70%	0		0		0	70%	0

ROADWAY SEGMENT	TAZ 3303		TAZ 3316		TAZ 3317		TAZ 3318		TAZ 3336		TAZ 3337		TAZ 3341		TAZ 3348	
	Change in ADT = 0		Change in ADT = 855		Change in ADT = 0		Change in ADT = -288		Change in ADT = 0		Change in ADT = 0		Change in ADT = -1086		Change in ADT = 0	
	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign
First Ave																
Arbor Dr to Washington Ave		0		0		0		0		0		0		0		0
Washington Ave to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Pennsylvania Ave		0		0		0		0		0		0		0		0
Pennsylvania Ave to Walnut Ave		0		0		0		0		0		0		0		0
Walnut Ave to Laurel St		0		0		0		0		0		0		0		0
Laurel St to Juniper St		0		0		0		0		0		0		0		0
Juniper St to Grape St		0		0		0		0		0		0		0		0
Grape St to Elm St		0		0		0		0		0		0		0		0
Fourth Ave																
Arbor Dr to Washington Ave		0		0		0		0		0		0		0		0
Washington Ave to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Walnut Ave		0		0		0		0		0		0		0		0
Walnut Ave to Laurel St		0		0		0		0		0		0		0		0
Laurel St to Grape St		0		0		0		0		0		0		0		0
Grape St to Elm St		0		0		0		0		0		0		0		0
Fifth Ave																
Washington Ave to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Walnut Ave		0		0		0		0		0		0		0		0
Walnut St to Laurel St		0		0		0		0		0		0		0		0
Laurel St to Hawthorn St		0		0		0		0		0		0		0		0
Hawthorn St to Grape St		0		0		0		0		0		0		0		0
Grape St to Elm St		0		0		0		0		0		0		0		0
Sixth Ave																
Washington St to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Upas St		0		0		0		0		0		0		0		0
Upas St to Laurel St		0		0		0		0		0		0		0		0
Laurel St to Juniper St		0		0		0		0		0		0		0		0
Juniper St to Grape St		0		0		0		0		0		0		0		0
Grape St to Elm St		0		0		0		0		0		0		0		0
Grape St																
Albatross St to First Ave		0		0		0		0		0		0		0		0
First Ave to Third Ave		0		0		0		0		0		0		0		0
Third Ave to Sixth Ave		0		0		0		0		0		0		0		0
Hawthorn St																
Brant St to First Ave		0		0		0		0		0		0		0		0
First Ave to Third Ave		0		0		0		0		0		0		0		0
Third Ave to Sixth Ave		0		0		0		0		0		0		0		0
India St																
Washington St to Glenwood Dr		0		0		0		0		0		0		0		0
Glenwood Dr to Sassafras St		0		0		0		0		0		0		0		0
Sassafras St to Redwood St		0		0		0		0		0		0		0		0
Redwood St to Palm St		0		0		0		0		0		0		0		0
Laurel St																
Columbia St to Union St		0		0		0		0		0		0		0		0
Union St to First Ave		0		0		0		0		0		0		0		0
First Ave to Third Ave		0		0		0		0		0		0		0		0
Third Ave to Sixth Ave		0		0		0		0		0		0		0		0
Park Blvd																
Adams Ave to Mission Ave		0		0		0		0		0		0		0		0
Mission Ave to El Cajon Blvd		0		0		0		0		0		0		0		0
El Cajon Blvd to Polk Ave		0		0		0		0		0		0		0		0
Polk Ave to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Upas St		0		0		0		0		0		0		0		0
Upas St to Zoo Pl		0		0		0		0		0		0		0		0
San Diego Ave																
Hortensia St to McKee St		0		0		0		0		0		0		0		0
McKee St to Washington St		0		0		0		0		0		0		0		0
Washington St to India St		0		0		0		0		0		0		0		0
University Ave																
Ibis St to Albatross St	30%	0		0	30%	0		0	30%	0	70%	0		0	30%	0
Albatross St to First Ave	30%	0		0	30%	0		0	30%	0		0		0	30%	0
First Ave to Fifth Ave	30%	0		0	30%	0		0	30%	0		0		0	30%	0
Fifth Ave to Sixth Ave	30%	0		0	30%	0		0	30%	0		0		0	30%	0
Sixth Ave to Eighth Ave	30%	0		0	30%	0		0	30%	0		0	30%	-325.8	30%	0
Vermont St to Richmond St	30%	0		0	30%	0		0	30%	0		0	30%	-325.8	30%	0
Richmond St to Park Blvd	30%	0		0	30%	0		0	30%	0		0	30%	-325.8	30%	0
Washington St																
India St to University Ave	70%	0	70%	598.5	70%	0	70%	-201.6	70%	0		0	70%	-760.2	70%	0
University Ave to First Ave		0	70%	598.5		0	70%	-201.6		0		0	70%	-760.2		0
First Ave to Fourth Ave		0	70%	598.5		0	70%	-201.6		0		0	70%	-760.2		0
Fourth Ave to Fifth Ave		0	70%	598.5		0		0		0		0	70%	-760.2		0
Fifth Ave to Sixth Ave		0	70%	598.5		0		0		0		0	70%	-760.2		0
Sixth Ave to Richmond St		0	70%	598.5		0		0		0		0	70%	-760.2		0
Richmond St to Normal St		0	70%	598.5		0		0		0		0	70%	0		0

ROADWAY SEGMENT	TAZ 3260		TAZ 3273		TAZ 3294		TAZ 3319		TAZ 3352		TAZ 3353		TAZ 3354		TAZ 3355	
	Change in ADT = -114		Change in ADT = 1536		Change in ADT = -402		Change in ADT = -822		Change in ADT = -390		Change in ADT = -312		Change in ADT = -264		Change in ADT = -990	
	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign	Dist %	Assign
First Ave																
Arbor Dr to Washington Ave		0		0		0		0		0		0		0		0
Washington Ave to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Pennsylvania Ave		0		0		0		0		0		0		0		0
Pennsylvania Ave to Walnut Ave		0		0		0		0		0		0		0		0
Walnut Ave to Laurel St		0		0		0		0		0		0		0		0
Laurel St to Juniper St		0		0		0		0		0		0		0		0
Juniper St to Grape St		0		0		0		0		0		0		0		0
Grape St to Elm St		0		0		0		0		0		0		0		0
Fourth Ave																
Arbor Dr to Washington Ave		0		0		0		0		0		0		0		0
Washington Ave to University Ave		0		0		0		0	15%	-58.5		0		0		0
University Ave to Robinson Ave		0		0		0		0	15%	-58.5		0		0	15%	-148.5
Robinson Ave to Walnut Ave		0		0		0		0	15%	-58.5		0		0	15%	-148.5
Walnut Ave to Laurel St		0		0		0		0	15%	-58.5		0		0	15%	-148.5
Laurel St to Grape St		0		0		0		0	15%	-58.5		0		0	15%	-148.5
Grape St to Elm St		0		0		0		0	15%	-58.5		0		0	15%	-148.5
Fifth Ave																
Washington Ave to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0	15%	-58.5		0		0		0
Robinson Ave to Walnut Ave		0		0		0		0	15%	-58.5		0		0	15%	-148.5
Walnut St to Laurel St		0		0		0		0	15%	-58.5		0		0	15%	-148.5
Laurel St to Hawthorn St		0		0		0		0	15%	-58.5		0		0	15%	-148.5
Hawthorn St to Grape St		0		0		0		0	15%	-58.5		0		0	15%	-148.5
Grape St to Elm St		0		0		0		0	15%	-58.5		0		0	15%	-148.5
Sixth Ave																
Washington St to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Upas St		0		0		0		0		0		0		0		0
Upas St to Laurel St		0		0		0		0		0		0		0		0
Laurel St to Juniper St		0		0		0		0		0		0		0		0
Juniper St to Grape St		0		0		0		0		0		0		0		0
Grape St to Elm St		0		0		0		0		0		0		0		0
Grape St																
Albatross St to First Ave		0		0		0		0		0		0		0		0
First Ave to Third Ave		0		0		0		0		0		0		0		0
Third Ave to Sixth Ave		0		0		0		0		0		0		0		0
Hawthorn St																
Brant St to First Ave		0		0		0		0		0		0		0		0
First Ave to Third Ave		0		0		0		0		0		0		0		0
Third Ave to Sixth Ave		0		0		0		0		0		0		0		0
India St																
Washington St to Glenwood Dr		0		0		0		0		0		0		0		0
Glenwood Dr to Sassafras St		0		0		0		0		0		0		0		0
Sassafras St to Redwood St		0		0		0		0		0		0		0		0
Redwood St to Palm St		0		0		0		0		0		0		0		0
Normal St																
Columbia St to Union St		0		0		0		0		0		0		0		0
Union St to First Ave		0		0		0		0		0		0		0		0
First Ave to Third Ave		0		0		0		0		0		0		0		0
Third Ave to Sixth Ave		0		0		0		0		0		0		0		0
Park Blvd																
Adams Ave to Mission Ave		0		0		0		0		0		0		0		0
Mission Ave to El Cajon Blvd		0		0		0		0		0		0		0		0
El Cajon Blvd to Polk Ave		0		0		0		0		0		0		0		0
Polk Ave to University Ave		0		0		0		0		0		0		0		0
University Ave to Robinson Ave		0		0		0		0		0		0		0		0
Robinson Ave to Upas St		0		0		0		0		0		0		0		0
Upas St to Zoo Pl		0		0		0		0		0		0		0		0
San Diego Ave																
Hortensia St to McKee St		0		0		0		0		0		0		0		0
McKee St to Washington St		0		0		0		0		0		0		0		0
Washington St to India St		0		0		0		0		0		0		0		0
University Ave																
Ibis St to Albatross St		0		0		0		0		0	30%	-93.6		0		0
Albatross St to First Ave		0		0		0		0		0	30%	-93.6	30%	-79.2		0
First Ave to Fifth Ave		0		0		0		0		0	30%	-93.6	30%	-79.2		0
Fifth Ave to Sixth Ave		0		0		0		0		0	30%	-93.6	30%	-79.2		0
Sixth Ave to Eighth Ave		0		0		0		0		0	30%	-93.6	30%	-79.2		0
Vermont St to Richmond St		0		0		0		0		0	30%	-93.6	30%	-79.2		0
Richmond St to Park Blvd		0		0		0		0		0	30%	-93.6	30%	-79.2		0
Washington St																
India St to University Ave	70%	-79.8	70%	1075.2	70%	-281.4	70%	-575.4	15%	-58.5	70%	-218.4	70%	-184.8	15%	-148.5
University Ave to First Ave	70%	-79.8	70%	1075.2	70%	-281.4	70%	-575.4	15%	-58.5	70%	-218.4	70%	-184.8	15%	-148.5
First Ave to Fourth Ave	70%	-79.8	70%	1075.2	70%	-281.4	70%	-575.4	15%	-58.5		0		0	70%	-693
Fourth Ave to Fifth Ave	0	0	70%	1075.2	70%	-281.4	70%	-575.4	85%	-331.5		0		0	70%	-693
Fifth Ave to Sixth Ave	0	0	70%	1075.2		0		0	70%	-273		0		0	70%	-693
Sixth Ave to Richmond St	0	0	70%	1075.2		0		0	70%	-273		0		0	70%	-693
Richmond St to Normal St		0	70%	1075.2		0		0		0		0		0		0

ROADWAY SEGMENT	TAZ 4728		TAZ 4729		TAZ 4713						NOTES
	Change in ADT = -36		Change in ADT = -96		Change in ADT = -102						
	Dist %	Assign	Dist %	Assign	Dist %	Assign	2035 ADT	Total ADT Change	% Change	Resulting 2035 ADT	
First Ave											
Arbor Dr to Washington Ave		0		0		0	7,500	0	0%	7500	
Washington Ave to University Ave		0		0		0	9,100	0	0%	9100	
University Ave to Robinson Ave	15%	-5.4		0		0	16,300	-602.7	-4%	15697	
Robinson Ave to Pennsylvania Ave	15%	-5.4		0		0	11,500	-849.3	-7%	10651	
Pennsylvania Ave to Walnut Ave	15%	-5.4		0		0	12,800	-438.3	-3%	12362	
Walnut Ave to Laurel St	15%	-5.4		0		0	11,900	-621.3	-5%	11279	
Laurel St to Juniper St	15%	-5.4		0		0	8,400	-768.6	-9%	7631	Recommend intersection evaluation adjustments
Juniper St to Grape St	15%	-5.4		0		0	6,800	-733.5	-11%	6066	Recommend intersection evaluation adjustments
Grape St to Elm St		0		0		0	4,500	-402.6	-9%	4097	Recommend intersection evaluation adjustments
Fourth Ave											
Arbor Dr to Washington Ave		0		0		0	14,900	-289.8	-2%	14610	
Washington Ave to University Ave		0			30%	-30.6	10,400	-486.9	-5%	9913	Recommend intersection evaluation adjustments
University Ave to Robinson Ave		0	15%	-14.4		0	12,900	-621	-5%	12279	Recommend intersection evaluation adjustments
Robinson Ave to Walnut Ave		0	15%	-14.4		0	11,400	-767.7	-7%	10632	Recommend intersection evaluation adjustments
Walnut Ave to Laurel St		0	15%	-14.4		0	15,100	-811.8	-5%	14288	Recommend intersection evaluation adjustments
Laurel St to Grape St		0	30%	-28.8		0	13,700	-793.8	-6%	12906	Recommend intersection evaluation adjustments
Grape St to Elm St		0	15%	-14.4		0	9,700	-695.7	-7%	9004	Recommend intersection evaluation adjustments
Fifth Ave											
Washington Ave to University Ave		0		0		0	11,800	-289.8	-2%	11510	
University Ave to Robinson Ave		0		0		0	14,000	-456.3	-3%	13544	
Robinson Ave to Walnut Ave		0		0		0	15,800	-606.6	-4%	15193	
Walnut St to Laurel St		0		0		0	14,800	-753.3	-5%	14047	Recommend intersection evaluation adjustments
Laurel St to Hawthorn St		0		0		0	14,400	-743.4	-5%	13657	Recommend intersection evaluation adjustments
Hawthorn St to Grape St		0		0		0	14,300	-711	-5%	13589	Recommend intersection evaluation adjustments
Grape St to Elm St		0		0		0	10,100	-627.3	-6%	9473	Recommend intersection evaluation adjustments
Sixth Ave											
Washington St to University Ave		0		0		0	45,100	-32.4	0%	45068	
University Ave to Robinson Ave		0		0		0	32,600	-118.8	0%	32481	
Robinson Ave to Upas St		0		0		0	29,900	-118.8	0%	29781	
Upas St to Laurel St		0		0		0	25,900	-118.8	0%	25781	
Laurel St to Juniper St		0		0		0	16,600	-118.8	-1%	16481	
Juniper St to Grape St		0		0		0	18,700	-118.8	-1%	18581	
Grape St to Elm St		0		0		0	20,300	-118.8	-1%	20181	
Grape St											
Albatross St to First Ave	0.7	-25.2	0.7	-67.2		0	7,300	-163.5	-2%	7136	
First Ave to Third Ave	0.85	-30.6	0.7	-67.2		0	7,300	-241.8	-3%	7058	
Third Ave to Sixth Ave		0	0.7	-67.2		0	9,000	-67.2	-1%	8933	
Hawthorn St											
Brant St to First Ave		0		0		0	15,000	-294	-2%	14706	
First Ave to Third Ave		0		0		0	7,300	-294	-4%	7006	
Third Ave to Sixth Ave		0		0		0	8,700	63	1%	8763	
India St											
Washington St to Glenwood Dr		0		0		0	11,000	21.75	0%	11022	
Glenwood Dr to Sassafras St		0		0		0	10,700	21.75	0%	10722	
Sassafras St to Redwood St		0		0		0	30,000	0	0%	30000	
Redwood St to Palm St		0		0		0	21,300	0	0%	21300	
Laurel St											
Columbia St to Union St		0		0		0	21,100	-525	-2%	20875	
Union St to First Ave		0		0		0	17,900	-525	-3%	17375	
First Ave to Third Ave		0		0		0	16,100	-109.2	-1%	15991	
Third Ave to Sixth Ave		0		0		0	20,200	-12.6	0%	20187	
Park Blvd											
Adams Ave to Mission Ave		0		0		0	14,893	-474	-3%	14419	
Mission Ave to El Cajon Blvd		0		0		0	16,300	-474	-3%	15826	
El Cajon Blvd to Polk Ave		0		0		0	18,600	-142.2	-1%	18458	
Polk Ave to University Ave		0		0		0	22,500	-419.4	-2%	22081	
University Ave to Robinson Ave		0		0		0	19,800	-277.2	-1%	19523	
Robinson Ave to Upas St		0		0		0	17,200	-277.2	-2%	16923	
Upas St to Zoo Pl		0		0		0	17,700	-118.8	-1%	17581	
San Diego Ave											
Hortensia St to McKee St		0		0		0	10,500	0	0%	10500	
McKee St to Washington St		0		0		0	18,200	66.75	0%	18267	
Washington St to India St		0		0		0	7,100	66.75	1%	7167	
University Ave											
Ibis St to Albatross St		0		0	15%	-15.3	14,700	-465.3	-3%	14235	
Albatross St to First Ave		0		0	15%	-15.3	20,800	-544.5	-3%	20255	
First Ave to Fifth Ave	15%	-5.4	15%	-14.4	15%	-15.3	14,100	-1659.6	-12%	12440	Recommend intersection evaluation adjustments
Fifth Ave to Sixth Ave	15%	-5.4	15%	-14.4		0	24,900	-1644.3	-7%	23256	Recommend intersection evaluation adjustments
Sixth Ave to Eighth Ave	15%	-5.4	15%	-14.4		0	29,300	-2168.1	-7%	27132	Recommend intersection evaluation adjustments
Vermont St to Richmond St	15%	-5.4	15%	-14.4		0	25,600	-2277.9	-9%	23322	Recommend intersection evaluation adjustments
Richmond St to Park Blvd		0		0		0	21,200	-2070	-10%	19130	Recommend intersection evaluation adjustments
Washington St											
India St to University Ave		0		0	85%	-86.7	34,800	-1437	-4%	33363	
University Ave to First Ave		0		0	85%	-86.7	25,400	-1437	-6%	23963	
First Ave to Fourth Ave		0		0		0	25,745	-1383.6	-5%	24361	
Fourth Ave to Fifth Ave		0		0		0	37,300	-1375.2	-4%	35925	
Fifth Ave to Sixth Ave		0		0		0	41,100	-459.9	-1%	40640	
Sixth Ave to Richmond St		0		0		0	41,778	-779.1	-2%	40999	
Richmond St to Normal St		0		0		0	47,100	1341.9	3%	48442	