



## EXECUTIVE SUMMARY

In November 2010, the City of San Diego kicked off the University Avenue Mobility Study. The goal of the study is to identify short term, mid-term, and long term improvement projects for the segment of University Avenue between 54<sup>th</sup> Street and 69<sup>th</sup> Street that would allow for the creation of a comprehensive plan to provide a “complete street” system along the corridor which would enable safe, attractive, and comfortable access and travel for all users of the facility including pedestrians, bicyclists, motorists, and public transport users of all ages and abilities. Figure ES-1 illustrates the limits of the study area.

Community workshops, project working group meetings, and walk audits were conducted with members of the City Staff, the project team members, and members from the communities neighboring the study corridor to identify mobility concerns for the corridor and potential solutions that could address each concern. The issues identified for the corridor were widely varied, ranging from providing sidewalk connectivity along the corridor to reducing the illegal parking that occurs along the corridor.

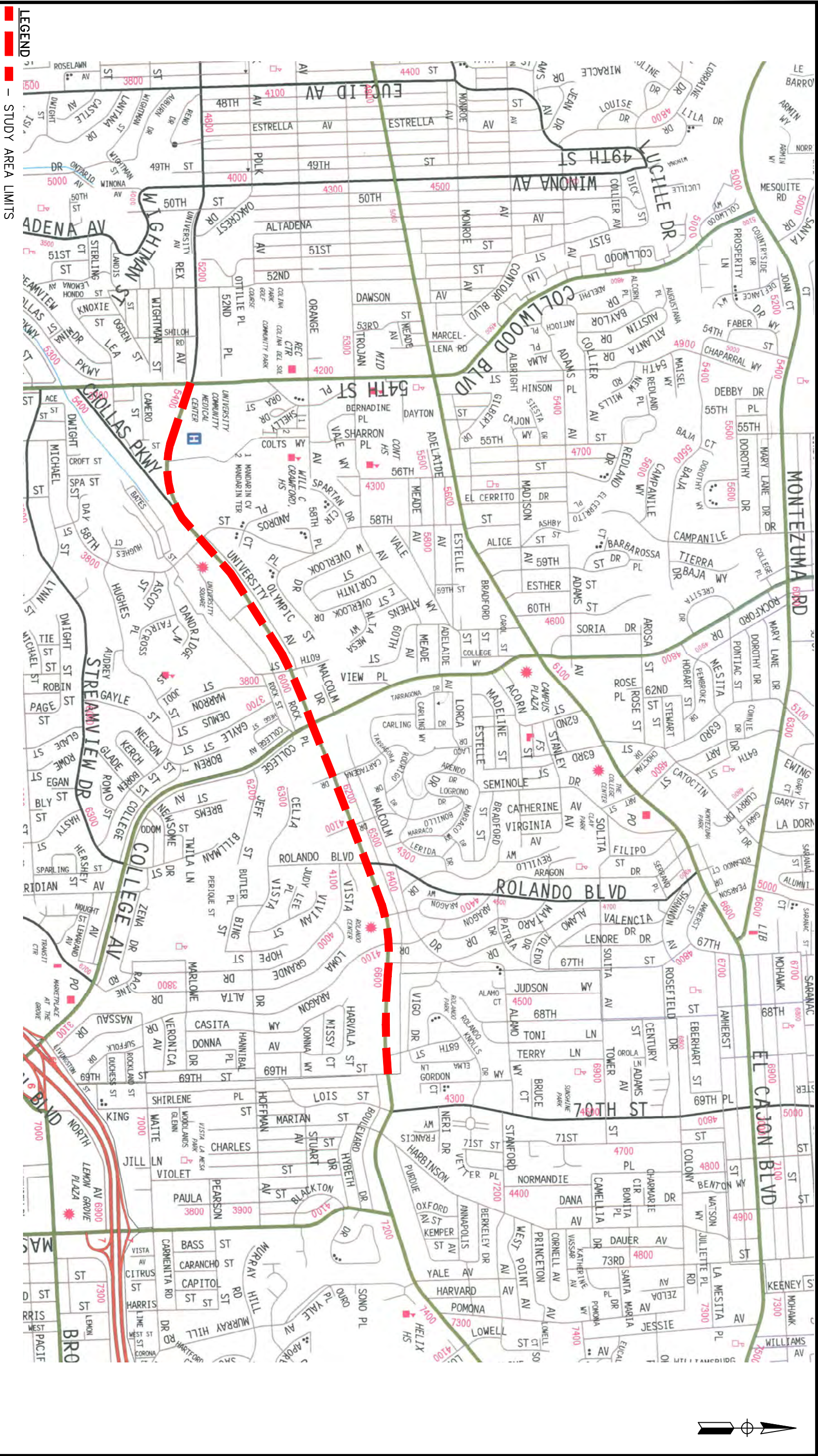
The main components of the University Avenue Mobility Study included Community Outreach, Technical Analysis, Physical Constraints Analysis and Feasibility, Preliminary Design, Cost Estimating, and Implementation. Over a thirteen (13) month period, the Project Team, Project Working Group, and Community worked together to establish the comprehensive University Avenue Mobility Plan. Three (3) options for the University Avenue Mobility Plan were developed, with each option providing different levels of improvements along the corridor. Although all three (3) options for the University Avenue Mobility Plan addressed a majority of the mobility issues/concerns that were raised for the corridor, Option 1 was identified as the preferred/recommended option. The following sections of this report outline the analysis completed, the community outreach process undertaken, and the recommendations of the University Avenue Mobility Study.

### ROLE OF COMMUNITY INPUT

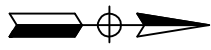
To gain an understanding of the issues within the community, a total of three (3) community workshops, two (2) walk audits, and four (4) project working group meetings were conducted over a five (5) month period between February 2011 and July 2011. The workshops focused on understanding the mobility issues and developing potential solutions. A detailed discussion of the various community outreach events, notification, and project website is provided in Chapter 5 of this study.

Table ES-1 is a reference to the mobility issues/concerns that were raised by the community during the various community outreach programs. Table ES-1 also summarizes how each of the issues/concerns were addressed within each option of the University Avenue Mobility Plan.





**LEGEND**  
 - STUDY AREA LIMITS



**Darnell & Associates, Inc.**

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**FIGURE ES-1 - VICINITY MAP**  
**UNIVERSITY MOBILITY STUDY AREA**





## UNIVERSITY AVENUE MOBILITY STUDY

**Table ES-1 – Summary of Concerns Raised During Community Outreach**

Segment	Issue/Concern	How Issue/Concern is Addressed in Mobility Plan		
		Option 1	Option 2	Option 3
Univ. Ave. – 54 <sup>th</sup> St. to 58 <sup>th</sup> St.	<ul style="list-style-type: none"> <li>Children &amp; Elderly on north side of University Ave. ability to cross traffic is restricted.</li> </ul>	Elimination of free right turns would reduce the pedestrian crossing width		
	<ul style="list-style-type: none"> <li>Bus riders run across the intersection</li> </ul>	An additional signalized intersection with pedestrian crossing would be added at the Chollas intersection. The bus stop is also proposed to be relocated to the far side of 54 <sup>th</sup> Street.		
	<ul style="list-style-type: none"> <li>Free right turn at 54<sup>th</sup> St. while merge</li> </ul>	The free right turn lanes would be eliminated.		
	<ul style="list-style-type: none"> <li>The addition of bike lanes would promote bike riding</li> </ul>	Conflicts with busses and vehicles would be limited to bus stops and right turn lanes.		
	<ul style="list-style-type: none"> <li>Narrow lanes to reduce speeds</li> </ul>	Travel lanes would be reduced to 11'		
	<ul style="list-style-type: none"> <li>Increase sidewalk widths</li> </ul>	Sidewalks would be widened to 5' to 10'		
	<ul style="list-style-type: none"> <li>Add landscape median</li> </ul>	Raised Medians would be added which could accommodate future landscaping if a landscape maintenance agreement is established in the future		
	<ul style="list-style-type: none"> <li>Sight distance at Bridgeport driveway. is restricted due to parked cars</li> </ul>	Parking would be restricted along the north side of University in this area		
	<ul style="list-style-type: none"> <li>There is a blind spot for the free SBR at 54<sup>th</sup> St. onto WB Univ.</li> </ul>	The free SBR would be eliminated		
	<ul style="list-style-type: none"> <li>Free Right Turn at 54<sup>th</sup> St. is dangerous for pedestrians</li> </ul>	The free right turn lanes would be eliminated.		
	<ul style="list-style-type: none"> <li>The left turn movements at the Univ./Chollas are skewed and thus is blind</li> </ul>	The Chollas intersection would be re-aligned to form a 90-degree T-intersection with a new traffic signal		
	<ul style="list-style-type: none"> <li>Speeds at the Chollas intersection are excessive</li> </ul>	The re-alignment of the Chollas intersection would improve safety in this area.		
	<ul style="list-style-type: none"> <li>Drainage at the Chollas intersection is a problem.</li> </ul>	Drainage would be improved throughout the corridor		
Univ. Ave. – 58 <sup>th</sup> St. to College	<ul style="list-style-type: none"> <li>Signal timing on lights seem too short at Univ. Sq.</li> </ul>	Signal timings comply with City criteria.		
	<ul style="list-style-type: none"> <li>Can protected left turn lanes be provided at 58<sup>th</sup> St.</li> </ul>	NBL & SBL turn lanes would be added to 58 <sup>th</sup> St		
	<ul style="list-style-type: none"> <li>Stair access on north side across from Univ. Sq. is in poor shape and not ADA compliant</li> </ul>	An ADA compliant pedestrian ramp would be constructed on the north side of University Ave. at University Sq. to provide direct access to/from the apartments to the north		
	<ul style="list-style-type: none"> <li>At Univ. Sq. bus stop (WB Univ.)– street parking blocks the buses &amp; the buses block traffic; prefer pull-in for buses</li> </ul>	Street parking would be eliminated in this area in all options		
	<ul style="list-style-type: none"> <li>Can a bus shelter be provided at the northeast corner of 58<sup>th</sup> St</li> </ul>	Although a bus shelter would not be added, the bus stop would be relocated to the far side position and the station area would be expanded. Addition of special bus shelters would require a maintenance district for long term maintenance costs. The placement of standard bus shelters will be determined by MTS.		
	<ul style="list-style-type: none"> <li>Another or better location for a traffic signal may be at the Food-For-Less western driveway. w/o 60<sup>th</sup> St</li> </ul>	Additional traffic signals are not warranted within the corridor.		
	<ul style="list-style-type: none"> <li>The frontage road located on the north side of Univ. is too narrow for two-way traffic</li> </ul>	The frontage road is not a part of the study area.		
	<ul style="list-style-type: none"> <li>Is the traffic signal at 60<sup>th</sup> St. warranted?</li> </ul>	Traffic signal warrants provided by the City of San Diego do indicate that a signal is warranted at 60 <sup>th</sup> Street		
	<ul style="list-style-type: none"> <li>Utility boxes are on the slope on the south side of Univ. just west of College</li> </ul>	The sidewalk would be widened throughout the corridor to provide a minimum of 5' of clear walkway. Relocation of major utility boxes within the right of way for aesthetic reasons would not likely happen with this project unless the franchise utility companies are responsible for the cost.		
	<ul style="list-style-type: none"> <li>Steep driveway. on 60<sup>th</sup> St. (may have been improved)</li> </ul>	Comment is noted.		
	<ul style="list-style-type: none"> <li>There are three (3) schools in the area</li> </ul>	Comment is noted.		
	<ul style="list-style-type: none"> <li>Trucks park on the street which create bad visibility</li> </ul>	Parking would be eliminated on both sides of the road between 54 <sup>th</sup> and College		
	<ul style="list-style-type: none"> <li>Limited crossings over long distance</li> </ul>	The crossings would be improved, but additional signals or mid block pedestrian signals do not meet City requirements.		
<ul style="list-style-type: none"> <li>There is a possible future park/garden that may go in at Univ./60<sup>th</sup></li> </ul>	The proposed plan would provide sidewalk for the entire block of 60 <sup>th</sup> St. between Univ. Ave. & Rock Pl. to better accommodate the future park			



## UNIVERSITY AVENUE MOBILITY STUDY

**Table ES-1 (Continued) – Summary of Concerns Raised During Community Outreach**

Segment	Issue/Concern	How Issue/Concern is Addressed in Mobility Plan		
		Option 1	Option 2	Option 3
Univ. Ave. – 58 <sup>th</sup> St. to College	<ul style="list-style-type: none"> <li>The width of the driveway. for the specialty retail center located next to the Arco station w/o College on the north side of Univ. is too wide, plus there is no side walk</li> </ul>	The driveway would be reconstructed and the width would be reduced to comply with City standards		
	<ul style="list-style-type: none"> <li>There is difficulty getting into the parking spaces at the specialty retail center located next to the Arco station w/o College on the north side of Univ.</li> </ul>	The proposed plan calls for removing/restriping the parking spaces at this location		
	<ul style="list-style-type: none"> <li>Do we have pedestrian and bicycle counts?</li> </ul>	Pedestrian & bicycle counts are summarized in Chapter 3 (Tables 3-8 and 3-14)		
	<ul style="list-style-type: none"> <li>What level of landscape will be added to existing medians?</li> </ul>	The proposed plan only calls for raised medians at this time. However, landscaping could be added to the medians in the future if a landscape maintenance agreement is established.		
	<ul style="list-style-type: none"> <li>In general, two ramps at the corners are preferred over one</li> </ul>	The goal of the project is to provide two curb ramps where possible. In general, skewed intersections and very wide intersections do not work as well with two ramps as narrower intersections with smaller curb radii. The details and locations would be a part of the final design based on the final geometrics, existing constraints and drainage conditions.		
Univ. Ave.– College Ave. to Aragon Dr	<ul style="list-style-type: none"> <li>Sidewalk width is a concern, comfortable pedestrian zones 8-14 feet or more</li> </ul>	Sidewalks would be widened to a minimum of 5' with a preferred width of 8' to 10'. The ultimate sidewalk width is constrained by the width of the existing right of way and existing physical improvements.		
	<ul style="list-style-type: none"> <li>Commercial businesses are parking on the sidewalk area</li> </ul>	The plan proposes to re-construct the driveways at standard widths and locations within the City right-of-way. Removal and/or restriping of the commercial off-street parking would be required to help reduce the ability for commercial businesses to park on the sidewalks		
	<ul style="list-style-type: none"> <li>Medical marijuana facility w/o Cartagena has parking overflow, other vehicles park in the Taco Bell lot</li> </ul>	New City Ordinance will address this issue.		
	<ul style="list-style-type: none"> <li>Payphones are mostly inoperable and should be removed</li> </ul>	Comment noted, however this issue is not mobility related.		
	<ul style="list-style-type: none"> <li>Traffic moving too fast, makes it difficult to cross the street.</li> </ul>	Travel lanes would be reduced to 11' and raised medians would be added to serve as a traffic calming measure.	Travel lanes would be reduced to 11' and raised medians would be added to serve as a traffic calming measure.	Provides pop-out to serve as a traffic calming measure in addition to reducing the travel lane width to 11'.
	<ul style="list-style-type: none"> <li>ADA ramps (want two per corner)</li> </ul>	The goal of the project is to provide two curb ramps where possible. In general, skewed intersections and very wide intersections do not work as well with two ramps as narrower intersections with smaller curb radii. The details and locations would be a part of the final design based on the final geometrics, existing constraints and drainage conditions.		
	<ul style="list-style-type: none"> <li>Bike travel is not safe (cars traveling too fast)</li> </ul>	Provides 5' bike lane on both sides of road	Provides 6' bike lane on both sides of road	Provides a 5' – 6' bike lane on both sides of the road
	<ul style="list-style-type: none"> <li>There are parking issues at certain times (find out where &amp; when the business facilities are being used)</li> </ul>	Existing parking demand studies found that the highest parking demand occurs on the north side of University Avenue between Cartagena Boulevard and Rolando Boulevard and between Aragon Drive and 69 <sup>th</sup> Street. All three options would eliminate the use of illegal parking and the parking in public right-of-way.		
		Parking is maximized e/o College, Loss of 192 Spaces	Loss of 273 Spaces	Loss of 246 Spaces
	<ul style="list-style-type: none"> <li>There are no sidewalks after Cartagena Dr.</li> </ul>	Proposed plan would widen/replace/construct 5'-10' sidewalk along entire corridor		
	<ul style="list-style-type: none"> <li>There are long blocks with no mid-block crossings available (e/o Cartagena)</li> </ul>	The crossings would be improved, but additional signals or mid block pedestrian signals do not meet City requirements.		
	<ul style="list-style-type: none"> <li>Consider a traffic signal at Bonillo Dr.</li> </ul>	A traffic signal is not warranted at this time.		
<ul style="list-style-type: none"> <li>Check right-of-way</li> </ul>	The right-of-way shown on the preliminary plans is based on SANGIS records and is schematic in nature. Discrepancies between the SANGIS records and other City records have been noted on the drawings. A further check of right-of-way would be part of the final design.			

Executive Summary



## UNIVERSITY AVENUE MOBILITY STUDY

<b>Table ES-1 (Continued) – Summary of Concerns Raised During Community Outreach</b>				
Segment	Issue/Concern	How Issue/Concern is Addressed in Mobility Plan		
		Option 1	Option 2	Option 3
Univ. Ave.– Aragon Dr. to 69 <sup>th</sup> St.	<ul style="list-style-type: none"> <li>Aragon Dr. &amp; Alamo Dr. intersections needs improvement</li> </ul>	All three (3) options of the proposed plan proposed improvements to these intersections. All options would include curb ramps and drainage improvements.		
	<ul style="list-style-type: none"> <li>Can we put median on all of Univ. Ave. and landscaping maintenance</li> </ul>	Raised median would be added to Univ. between 54 <sup>th</sup> St. & 58 <sup>th</sup> St., & between 60 <sup>th</sup> St. & Aragon Dr. Landscaping could be added in the future if a landscaping maintenance agreement is developed.	Raised median would be added to Univ. between 54 <sup>th</sup> St. & 58 <sup>th</sup> St.	
	<ul style="list-style-type: none"> <li>Needs some type of shelter along corridor</li> </ul>	Addition of special bus shelters would require a maintenance district for long term maintenance costs. The placement of standard bus shelters will be determined by MTS.		
	<ul style="list-style-type: none"> <li>Need for sidewalk w/o Aragon</li> </ul>	Proposed plan would widen/replace/construct 5'-10' sidewalk along entire corridor		
	<ul style="list-style-type: none"> <li>Closeness of Alamo Dr. to Aragon Dr., can we close this opening and expand landscaping?</li> </ul>	Closure of the intersection was considered, but rejected because of the potential for diverting traffic.		
	<ul style="list-style-type: none"> <li>NE corner of Aragon/Alamo intersection needs improvement</li> </ul>	Curb ramps and drainage improvements are included in all options.		
	<ul style="list-style-type: none"> <li>Consider two ramps per corner</li> </ul>	The goal of the project is to provide two curb ramps where possible. In general, skewed intersections and very wide intersections do not work as well with two ramps as narrower intersections with smaller curb radii. The details and locations would be a part of the final design based on the final geometrics, existing constraints and drainage conditions.		
	<ul style="list-style-type: none"> <li>There are drainage problems at Univ./Aragon</li> </ul>	Drainage would be improved throughout the corridor		
	<ul style="list-style-type: none"> <li>Alamo Dr. has speed bumps</li> </ul>	Comment is noted.		
	<ul style="list-style-type: none"> <li>Mesa Green condos and the automotive shop have poor sidewalks</li> </ul>	Sidewalks would be improved throughout the corridor		
	<ul style="list-style-type: none"> <li>Children walking to the Kroc Center should be considered</li> </ul>	Sidewalks and crosswalks would be improved within the corridor. Sidewalks to the north and south of University Avenue are not within the study.		
	<ul style="list-style-type: none"> <li>Placement of bus shelters near intersections should be reviewed for sight distance</li> </ul>	Comment is noted.		
	<ul style="list-style-type: none"> <li>Consideration should be given to relocating shelters for improved visibility</li> </ul>	Comment is noted.		

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### ROLE OF PROJECT WORKING GROUP

In addition to the three (3) Community Workshops, a Project Working Group was formed to provide direction and input to the Technical Project Team. The Project Working Group provided input on key elements of the plan as the process evolved. The public was invited to attend these meetings and share their thoughts with the project team. Members of the Project Working Group were appointed to the group based on their involvement in other key organizations in the communities served by the University Avenue Corridor. The members of the Project Working Group were responsible for distributing the information to their respective organizations through email distributions, announcements at monthly meetings, and postings on their organizations websites.



### ROLE OF THE TECHNICAL PROJECT TEAM

The technical team, which was comprised of City staff and the consulting team met on a monthly basis to discuss the technical analysis of the corridor. A total of twelve (12) technical team meetings were held during the course of the project. During the technical team meetings, traffic engineering staff, planning staff and various representatives from City departments participated in discussion of the key areas of concerns and development of solutions to address the operational and mobility issues within the study area. These meetings were also used to discuss the concerns raised by the community and to identify solutions to issues that arose during the community outreach meetings.

### ELEMENTS OF THE UNIVERSITY AVENUE MOBILITY PLAN

As previously discussed, three (3) options for the University Avenue Mobility Plan were developed, with each option providing different levels of improvements along the corridor. An illustration of each of the three (3) options for the University Avenue Mobility Plan are provided at the end of this chapter. Details of the elements for each option of the University Avenue Mobility Plan are provided in Chapter 7 of this report.

The major improvements that are included in all three (3) options of the Mobility Plan include the following:

- The University Avenue/54th Street intersection would be reconstructed to eliminate the free westbound and southbound right turn lanes and to provide dual westbound left turn lanes.
- The University Avenue/58th Street intersection would be reconstructed to eliminate the free eastbound right turn lane.
- Northbound and southbound left turn lanes would be added to the University Avenue/58<sup>th</sup> Street intersection.
- The University Avenue/Chollas Parkway intersection would be realigned to form a 90-degree T-intersection with a new traffic signal. The new intersection location would provide an additional protected crossing for pedestrians. The existing bus stop at Chollas Parkway would be relocated to the far side position and the station area would be expanded.
- The northeast corner of 58th Street and the northwest corner of 60th Street would be widened to provide a wider plaza area for pedestrians. The bus stop on the north side of the street at University Square would be enlarged and a pedestrian ramp would be constructed to provide direct access for the housing located to the north on the frontage road between 58<sup>th</sup> Street and 60<sup>th</sup> Street.
- A new five-foot (5') wide sidewalk would be constructed along the north side of University Avenue between 58th Street and 60th Street.
- The bus stop areas at 54<sup>th</sup> Street, 58<sup>th</sup> Street, 60<sup>th</sup> Street westbound, Cartagena Drive westbound, and Aragon Drive westbound would be enlarged to improve the waiting area.
- Access would be improved at all bus stops along the corridor.
- To accommodate the future demand, the University Avenue/College Avenue intersection would be modified to provide dual eastbound and westbound left turn lanes and northbound and southbound right turn lanes.



- The plan provides for 5-foot (5') to 10-foot (10') sidewalk widths.
- All curb ramps are proposed to be upgraded to be ADA compliant.
- All traffic signals are proposed to be upgraded to be ADA compliant, to meet City standards, to provide pedestrian signal heads, pedestrian countdown signals, bicycle loop detection, and to remove median mounted signals as required.
- Street lights are proposed to be added where necessary to meet current standards.
- Parking that encroaches into the public sidewalk area is proposed to be eliminated.
- Bus pads are proposed to be added at all transit stops and bus stops are proposed to be relocated per discussions with MTS.
- Driveways are proposed to be reconstructed/closed where necessary to comply with City Standards relative to maximum width and location relative to intersections.
- Drainage improvements are proposed throughout the corridor.

The following provides a brief description of each option of the University Avenue Mobility Plan.

**Option 1:** Option 1 provides five-foot (5') bike lanes with a two-foot (2') buffer between the adjacent travel lane and two (2) 11-foot (11') travel lanes in each direction and raised median from 54th Street to 58<sup>th</sup> Street. Between 58<sup>th</sup> Street and College Avenue, Option 1 provides for a raised median, two (2) westbound travel lanes, three (3) eastbound travel lanes, and a dedicated five-foot (5') bike lane with a two-foot (2') buffer from the travel lane on both sides of the road. Consideration was given to the use a shared transit/bike lane along the portion of College Avenue between 54<sup>th</sup> Street and College Avenue; however the option was eliminated from further consideration at this time due to conflicts with the California Vehicle Code. Parking would be eliminated along the segment of University Avenue between 54th Street and College Avenue with the exception of the 300 foot long segment on the north side of the road west of 58<sup>th</sup> Street where the existing pavement is wide enough to allow parking.

Between College Avenue and Aragon Drive, Option 1 proposes to provide seven-foot (7') parking lanes, five-foot (5') bike lanes, and two (2) 11-foot (11') travel lanes in each direction and a 12-foot (12') median. Between Aragon Drive and 69th Street, Option 1 proposes to re-stripe this section of the roadway to provide a raised median, two (2) standard 11-foot travel lanes (one in each direction) and one (1) twenty-one-foot (21') wide sharrow lane (shared bicycle/vehicle/parking lane) on each side of the road.

With Option 1, curb pop outs would be provided at the northeast and southwest corners of the University Avenue/Rolando Boulevard intersection. Additionally, with Option 1, a new sidewalk would be constructed on the north side of College Avenue between 58<sup>th</sup> Street and 60<sup>th</sup> Street.



**Option 2:** Option 2 provides five-foot (5') bike lanes with a two-foot (2') buffer from the travel lane and two (2) 11-foot (11') travel lanes in each direction and a raised median from 54th Street to 58<sup>th</sup> Street. Between 58<sup>th</sup> Street and College Avenue, Option 2 would provide for a raised median, four (4) standard vehicle travel lanes (two in each direction), a standard five-foot (5') bike lane with a two-foot (2') buffer from the travel lane on the north side of the road, and a dedicated five-foot (5') minimum bike lane and a dedicated 11-foot (11') wide minimum transit lane on the south side of the road. Parking would be eliminated along the segment of University Avenue between 54th Street and College Avenue with the exception of the 300 foot long segment on the north side of the road west of 58<sup>th</sup> Street where the existing pavement is wide enough to allow parking.

Option 2 proposes deleting parking on the south side of University Avenue between College Avenue and Cartagena Drive and between Rolando Boulevard and Aragon Drive. With Option 2, parking would be eliminated from both the north and south sides of University Avenue between Aragon Drive and 69<sup>th</sup> Street. The proposed parking deletion generally allows for the provision of two (2) travel lanes in each direction, a raised median, and a six-foot (6') bike lane on both sides of the roadway along University Avenue between College Avenue and 69<sup>th</sup> Street. Improvements of the alleys to the north of University Avenue is suggested to provide better access to onsite parking areas and help mitigate the loss of on street parking.

**Option 3:** Option 3 provides five-foot (5') bike lanes with a two-foot (2') buffer between the adjacent travel lane and two (2) 11-foot (11') travel lanes in each direction and a raised median from 54th Street to 58<sup>th</sup> Street. Between 58<sup>th</sup> Street and College Avenue, Option 3 provides for a raised median, two (2) westbound travel lanes, three (3) eastbound travel lanes, and a dedicated five-foot (5') bike lane with a two-foot (2') buffer from the travel lane on both sides of the road. Consideration was given to the use a shared transit/bike lane along the portion of College Avenue between 54<sup>th</sup> Street and College Avenue; however the option was eliminated from further consideration at this time due to conflicts with the California Vehicle Code. Parking would be eliminated along this portion of the corridor with the exception of the 300 foot long segment on the north side of the road west of 58<sup>th</sup> Street where the existing pavement is wide enough to allow parking.

Between College Avenue and Rolando Boulevard, Option 3 proposes to provide seven-foot (7') parking lanes, five-foot (5') bike lanes, and two (2) eleven-foot (11') travel lanes in each direction. Between Rolando Boulevard and Aragon Drive, Option 3 proposes to provide two (2) 11-foot (11') travel lanes in each direction, a five-foot (5') bike lane adjacent to a seven-foot (7') parking lane along the south side of University Avenue and a six-foot (6') bike lane with no parking along the north side of University Avenue. With Option 3, a twelve-foot (12') two-way left turn lane will be provided along University Avenue between College Avenue and Aragon Drive.

Between Aragon Drive and 69<sup>th</sup> Street, Option 3 proposes to re-stripe this section of the roadway to eliminate parking on the south side of the roadway and provide the following lane configurations: a raised median, three (3) standard travel lanes (2 eastbound, 1 westbound), one (1) six-foot (6') wide bike lane with a two-foot (2') buffer from the travel lane on the south side of the road (eastbound direction), and one (1) twenty-one-foot (21') wide sharrow (shared bicycle/vehicle/parking lane) in the westbound direction.





**Recommended University Avenue Mobility Plan**

The three (3) options for the University Avenue Mobility Plan were reviewed based on how they addressed the community’s concerns and the measures of effectiveness. (Chapter 2.2 provides a detailed description of the measures of effectiveness established for evaluating the University Avenue Mobility Plan.) The community’s input on each of the proposed options was also considered. Each option was then ranked on a scale of 1 to 3, where 1 represents the option where the measure of effectiveness satisfied the goals of the measures of effectiveness the best, and 3 represents the option that satisfied the goals of the measure of effectiveness the least. Table ES-2 summarizes the ranking system. As shown in Table ES-2, Option 1 was ranked the best. As you will notice from Table ES-2, Measures of Effectiveness were ranked the same (i.e. all three options were given a ranking of 1 for intersection LOS). In those cases, that just means all three options satisfied the measure of effectiveness equally.

Each of the three (3) options provide improvements to the corridor that meet the initial requirements and provide options to improve mobility and meet the 2030 demand for vehicles, pedestrians, bicycles and transit. The common elements include elimination of free right turns at 54<sup>th</sup> Street and 58<sup>th</sup> Street, addition of dual left turn lanes at 54<sup>th</sup> Street and College Avenue, and upgrades of all traffic signals to include countdown pedestrian heads, bicycle detection and ADA upgrades. Each of the three (3) options also includes continuous accessible sidewalks, curb ramps at all intersections, improvements to public transit stations and associated drainage and utility relocations to accommodate these improvements. As you will notice from Table ES-2, many of the Measures of Effectiveness were ranked the same (i.e. all three options were given a ranking of 1 for intersection LOS). This reflects the common elements described above in which all three options satisfied the measure of effectiveness equally. The differences between the options centered around additional bicycle, pedestrian and transit improvements with varying tradeoff for parking and vehicular access. Based on the measures of effectiveness, input from the community and our engineering analysis, Option 1 provides the best balance for all modes of transportation and was selected as the preferred option with concurrence from the Working Group and the Eastern Planning Area Committee.

**Table ES-2 – Summary of How Each Option Ranks By Measure of Effectiveness**

Measure of Effectiveness	How Each Option Ranks By Measure of Effectiveness		
	Option 1	Option 2	Option 3
<b>Traffic Flow</b>			
Intersection – LOS, Delay	1	1	1
Roadway Segments – LOS, Capacity	1	1	1
Arterial Segments – Avg. Travel Speed (mph)	1	2	3
<b>Pedestrian</b>			
Presence and Quality of Sidewalks/Sidewalk Accessibility	1	1	1
Pedestrian Exposure at Crosswalks	2	2	1
Walking Environment/Pedestrian Walking Comfort	2	2	1
Crosswalk Locations	1	1	1
Crosswalk Visibility	2	2	2
Vehicle Speeds at Pedestrian Crossings	1	1	1
Potential for Pedestrian/Vehicle Conflicts	1	1	3
<b>Bicycles</b>			
Capacity	1	1	1
Crossings	1	1	2
Riding Environment/Bicycle Rider Comfort	2	1	2
Potential for Bicycle/Vehicle Conflicts	1	1	2
Linkage to Bicycle Master Plan	1	1	1



## UNIVERSITY AVENUE MOBILITY STUDY

<b>Transit</b>			
Transit Access	1	3	2
Transit Amenities	1	1	1
<b>Parking</b>			
No. & Change in Number of Parking Spaces	1	3	2
Effects of Increase/Decrease in Parking	1	3	2
Interaction of Parking Maneuvers & Traffic Flow	2	1	2
<b>Engineering</b>			
Compliance With City Design Standards	1	1	1
Storm Drainage	1	1	1
Storm Water Management	1	1	1
Right-of-Way Impacts	1	1	1
Environmental Impacts	1	3	2
Maintenance	1	1	1
Liability	2	2	1
Constructability	1	2	3
<b>Overall Ranking:</b>	<b>BEST</b>	<b>BETTER</b>	<b>GOOD</b>
1 = Satisfies the Goals the Best, 3 = Satisfies the Goals the Least			

### OPERATIONAL ASSESSMENT OF UNIVERSITY AVENUE STUDY CORRIDOR

Roadway segment operations, intersection operations, and travel speed analysis were conducted to evaluate the vehicular benefits associated with the proposed elements of the three (3) options of the University Avenue Mobility Plan. The analysis was conducted under 2030 conditions and assumed that all of the improvements identified for each of the three (3) options of the University Avenue Mobility Plan were constructed. It should be noted that benefits associated with implementing the elements of any one option the University Avenue Mobility Plan individually may vary and may need to be evaluated further prior to design and implementation to achieve the optimal results for each improvement.

Detailed discussions on the operational analysis associated with the implementation of the University Avenue Mobility Plan are provided in Chapter 8 of this report. A brief summary of the operational analysis is provided in the following sections.

#### Roadway Segment Level of Service Analysis

Table ES-3 provides a summary of the roadway segment level of service analysis with the implementation of the three (3) options of the University Avenue Mobility Plan. As shown in Table ES-3, the improvements identified in the University Avenue Mobility Plan do not directly improve nor degrade the roadway segment operations based on the volume-to-capacity ratio methodology adopted by the City of San Diego. Table ES-3 shows that all segments of University Avenue along the study corridor will operate at an acceptable LOS C or better under 2030 conditions with either option of the proposed University Avenue Mobility Plan.

The benefits of the improvements identified in the University Avenue Mobility Plan are demonstrated in the discussion of the travel time assessment.

#### Intersection Level of Service Analysis

Table ES-4 provides a summary of intersection level of service analysis with the implementation of the three (3) options of the University Avenue Mobility Plan. As shown in Table ES-4, implementation of any of the three (3) options of the University Avenue Mobility Plan results in improved operations at the



## UNIVERSITY AVENUE MOBILITY STUDY

following intersections when the 2030 No Build conditions are compared to the 2030 with recommended improvements conditions:

- University Avenue/Chollas Parkway: PM Peak hour LOS F to LOS B;
- University Avenue/College Avenue: PM Peak hour LOS F to LOS D.

Table ES-4 shows that all intersections along the University Avenue Mobility study corridor will operate at an acceptable LOS D or better under 2030 conditions with either option of the proposed University Avenue Mobility Plan.





## UNIVERSITY AVENUE MOBILITY STUDY

**Table ES-3 – Summary of Roadway Segment Level of Service Analysis**

Segment	Class	LOS E Capacity	Existing Conditions				2030 Conditions															
			Existing ADT	No Build			2030 ADT	No Build			With Mobility Plan – Option 1			With Mobility Plan – Option 2			With Mobility Plan – Option 3					
				# of Lanes	V/C	LOS		# of Lanes	V/C	LOS	# of Lanes	V/C	LOS	# of Lanes	V/C	LOS	# of Lanes	V/C	LOS			
<b>University Avenue</b>																						
West of 54 <sup>th</sup> St.	4M	40,000	28,304	4	0.71	C	25,000	4	0.63	C	4	0.63	C	4	0.63	C	4	0.63	C	4	0.63	C
54 <sup>th</sup> St. to 58 <sup>th</sup> St.	4M	40,000	23,772	4	0.59	C	27,000	4	0.68	C	4	0.68	C	4	0.68	C	4	0.68	C	4	0.68	C
58 <sup>th</sup> St. to 60 <sup>th</sup> St.	4M	40,000	22,726	5	0.57	C	25,000	5	0.63	C	5	0.63	C	4+	0.63	C	5	0.63	C	5	0.63	C
60 <sup>th</sup> St. to College Ave.	4M	40,000	21,587	5	0.54	C	23,000	5	0.58	C	5	0.58	C	4+	0.58	C	5	0.58	C	5	0.58	C
College Ave. to Cartagena Dr.	4M	40,000	17,645	4	0.44	B	25,000	4	0.63	C	4	0.63	C	4	0.63	C	4	0.63	C	4	0.63	C
Cartagena Dr. to Rolando Blvd.	4M	40,000	17,059	4	0.43	B	26,000	4	0.65	C	4	0.65	C	4	0.65	C	4	0.65	C	4	0.65	C
Rolando Blvd. to Aragon Dr.	4M	40,000	15,824	4	0.40	B	20,000	4	0.50	B	4	0.50	B	4	0.50	B	4	0.50	B	4	0.50	B

Class = roadway classification; ADT = average daily traffic/trips; V/C = volume to LOS E capacity; LOS = level of service  
 4M = 4-Lane Major Arterial  
 4+ = 4 standard travel lanes plus the addition of 1 transit lane (Option 2)



# UNIVERSITY AVENUE MOBILITY STUDY

**Table ES-4 – Summary of Intersection Level of Service Analysis**

Intersection	Traffic Control	Crit. Move	Existing		2030 (No Build)		2030 With Recommend Plan					
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Option 1		Option 2		Option 3	
							Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>AM Peak Hour</b>												
University (E-W) @ 54 <sup>th</sup> (N-S)	Sig.	Int.	28.2	C	30.1	C	28.9	C	28.9	C	28.9	C
University (E-W) @ Chollas (N-S) <sup>(a)</sup>	OWSC	WBL	25.2	D	33.3	D	(a)	(a)	(a)	(a)	(a)	(a)
	Sig.	Int.	(a)	(a)	(a)	(a)	10.3	B	10.3	B	10.3	B
University (E-W) @ 58 <sup>th</sup> (N-S)	Sig.	Int.	20.2	C	24.3	C	17.0	B	17.3	B	17.0	B
University (E-W) @ University Sq. (N-S)	Sig.	Int.	9.2	A	10.8	B	6.0	A	5.9	A	6.0	A
University (E-W) @ 60 <sup>th</sup> (N-S)	Sig.	Int.	13.5	B	15.0	B	8.4	A	8.5	A	8.4	A
University (E-W) @ College (N-S)	Sig.	Int.	41.5	D	53.9	D	38.9	D	38.9	D	38.9	D
University (E-W) @ Rolando (N-S)	Sig.	Int.	14.7	B	17.6	B	17.4	B	17.4	B	17.4	B
University (E-W) @ Aragon (N-S)	Sig.	Int.	10.3	B	11.0	B	11.0	B	11.0	B	11.0	B
University (E-W) @ Salvation (N-S)	Sig.	Int.	7.0	A	7.4	A	7.5	A	7.5	A	7.5	A
<b>PM Peak Hour</b>												
University (E-W) @ 54 <sup>th</sup> (N-S)	Sig.	Int.	34.3	C	42.5	D	36.4	C	36.4	D	36.4	D
University (E-W) @ Chollas (N-S) <sup>(a)</sup>	OWSC	WBL	<b>40.6</b>	<b>E</b>	<b>221.3</b>	<b>F</b>	(a)	(a)	(a)	(a)	(a)	(a)
	Sig.	Int.	(a)	(a)	(a)	(a)	13.4	B	13.4	B	13.4	B
University (E-W) @ 58 <sup>th</sup> (N-S)	Sig.	Int.	21.5	C	28.7	C	17.5	B	18.0	B	17.5	B
University (E-W) @ University Sq. (N-S)	Sig.	Int.	16.2	B	16.5	B	15.6	B	16.3	B	15.6	B
University (E-W) @ 60 <sup>th</sup> (N-S)	Sig.	Int.	7.5	A	9.0	A	10.1	B	11.2	B	10.1	B
University (E-W) @ College (N-S)	Sig.	Int.	53.8	D	<b>88.3</b>	<b>F</b>	45.9	D	45.9	D	45.9	D
University (E-W) @ Rolando (N-S)	Sig.	Int.	16.5	B	21.3	C	20.6	C	20.6	C	20.5	C
University (E-W) @ Aragon (N-S)	Sig.	Int.	10.9	B	12.7	B	12.9	B	12.9	B	12.9	B
University (E-W) @ Salvation (N-S)	Sig.	Int.	8.6	A	9.7	A	9.9	A	9.9	A	9.9	A
sec/veh = seconds of delay per vehicle; LOS = Level of Service; E-W = East-West Street; N-S = North-South Street WBL = Westbound Left; Int. = Intersection; Sig. = Signalized; OWSC = One-Way Stop-Controlled (a) University Avenue/Chollas Parkway intersection is one-way stop-controlled under existing and 2030 (no build) conditions but is signalized under 2030 conditions with the recommended plan												

Executive Summary



**Travel Speed Analysis Summary**

Table ES-5 provides a summary of the travel speeds along the University Avenue Corridor with the implementation of the three (3) options of the University Avenue Mobility Plan. As shown in Table ES-5, implementation of any of the three (3) options of the University Avenue Mobility Plan results in improved operations based on travel times on the following roadway segments when the 2030 No Build conditions are compared to the 2030 with recommended improvements conditions:

- Westbound University Avenue-between College Avenue and Salvation Driveway:
  - AM Peak Hour - LOS E to LOS D
  - PM Peak Hour – LOS F to LOS D
- Westbound University Avenue-between 54<sup>th</sup> Street and Salvation Driveway:
  - PM Peak Hour - LOS E to LOS D

As shown in Table ES-5, with the implementation of either option of the University Avenue Mobility Plan, the Year 2030 average travel speeds along the study corridor are projected to operate at an acceptable LOS D or better.

Executive Summary

<b>Table ES-5 – Summary of Travel Speed Analysis</b>											
Segment	Direction of Travel	Existing (a)		2030 (No Build)		2030 With Recommend Plan					
		Speed (mph)	LOS	Speed (mph)	LOS	Option 1		Option 2		Option 3	
						Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
<b>AM Peak Hour</b>											
University Avenue – 54 <sup>th</sup> St. to College Ave.	Eastbound	19.9	D	18.3	D	20.6	D	20.4	D	20.6	D
	Westbound	21.7	D	20.9	D	20.9	D	20.9	D	20.9	D
University Avenue – College Ave. to Salvation Dwy.	Eastbound	25.4	C	24.7	C	24.6	C	24.7	C	24.7	C
	Westbound	18.8	D	<b>16.1</b>	<b>E</b>	19.1	D	19.1	D	19.1	D
University Avenue – 54 <sup>th</sup> St. to Salvation Dwy.	Eastbound	22.0	D	20.6	D	22.2	D	22.0	D	22.2	D
	Westbound	20.3	D	18.5	D	20.1	D	20.1	D	20.1	D
<b>PM Peak Hour</b>											
University Avenue – 54 <sup>th</sup> St. to College Ave.	Eastbound	19.8	D	18.1	D	18.2	D	17.4	D	18.2	D
	Westbound	21.4	D	20.2	D	19.8	D	19.8	D	19.8	D
University Avenue – College Ave. to Salvation Dwy.	Eastbound	24.7	C	23.1	C	23.1	C	23.1	C	23.1	C
	Westbound	17.5	D	<b>12.6</b>	<b>F</b>	19.8	D	19.8	D	19.8	D
University Avenue – 54 <sup>th</sup> St. to Salvation Dwy.	Eastbound	21.7	D	19.9	D	20.0	D	19.5	D	20.0	D
	Westbound	19.5	D	<b>16.0</b>	<b>E</b>	19.8	D	19.8	D	19.8	D
(a) The travel speeds shown for the existing conditions are based on the synchro analysis and not the actual travel time studies conducted in the field in order to provide an equal assessment of the recommended improvements Speed = average travel speeds per synchro in miles per hour (mph); LOS = level of service											





**Traffic Signal Warrant Analysis**

As part of all three (3) options of the University Avenue Mobility Plan, one (1) new traffic signal was included along the study corridor, at the intersection of University Avenue/Chollas Parkway. Operationally, the traffic signal would offset the delay of the westbound left turn movement from University Avenue onto Chollas Parkway while at the same time it would provide for additional controlled pedestrian crossing along University Avenue.

Operationally, the stop controlled movements at the University Avenue/Chollas Parkway intersection are projected to operate at LOS F during the PM peak hour under 2030 conditions if no improvements are made. Re-alignment and signalization of the intersection would reduce delay, in particular to the westbound left turn movement from University Avenue onto Chollas Parkway, and allow the intersection as a whole to operate at an acceptable LOS B during both peak hours. To complete the analysis for the proposed new traffic signal, a traffic signal warrant analysis was conducted. The traffic signal warrants were conducted in accordance with the guidelines published in the January 21, 2010 Edition of the California Manual of Uniform Traffic Control Devices for Streets and Highways (2010 CA MUTCD). The individual traffic signal warrants that are being analyzed in this study include:

- Warrant 2 – Four-Hour Vehicular Volume
- Warrant 3 – Peak Hour
- Warrant 4 – Pedestrian Volume
- Warrant 7 – Crash Experience

The traffic signal warrants were conducted under existing conditions and future year 2030 conditions with the proposed re-alignment of Chollas Parkway. The results of the traffic signal warrants are summarized in Table ES-6.

<b>Table ES-6 – Summary of Traffic Signal Warrant Analysis</b>			
Intersection	Warrant	Warrant Satisfied?	
		Existing Conditions	2030 Conditions With Re-Aligned Chollas Parkway
University Avenue @ Chollas Parkway	Warrant 2- Four Hour Vehicular Volume	No	Yes
	Warrant 3 – Peak Hour	Yes (PM Peak)	Yes
	Warrant 4 – Pedestrian Volume	No	No
	Warrant 7 – Crash Experience	No	Not Analyzed
Warrants Per 2010 CA MUTCD			

As shown in Table ES-6, a traffic signal is currently warranted at the University Avenue/Chollas Parkway intersection under existing conditions based on the PM peak hour traffic volumes. Under 2030 conditions, a traffic signal is warranted based on the four-hour volume warrant as well as the peak hour (both the AM and PM peak hour volumes satisfy the warrant) volume warrant.

Based on concerns raised by the community, the University Avenue Corridor was reviewed to determine if there were any locations that would warrant the installation of a pedestrian only signal. However, the pedestrian volumes along the University Avenue Corridor were not high enough to warrant the installation of pedestrian only signals between the existing traffic signals along the corridor.



## **PARKING IMPROVEMENTS**

Based on the information received from a review of the existing conditions in the field, Community Workshops, Project Working Group Meetings, and Walk Audits some of the key parking related issues that were noted for the study corridor included:

- A concern about the large trucks parking on University Avenue west of College Avenue;
- Illegal parking east of College Avenue; and
- Parking in the public right-of-way.

The majority of the community expressed that they could accept some loss of parking along the corridor as long as any improvements made strived to maintain the on-street parking on the north side of University Avenue between Cartagena Drive and Rolando Boulevard and between Aragon Drive and 69<sup>th</sup> Street.

### **Parking Improvements Included in University Avenue Mobility Plan - Option 1**

#### **54th Street to College Avenue**

With Option 1, parking would be eliminated along the segment of University Avenue between 54<sup>th</sup> Street and College Avenue with the exception of the 300 foot long segment on the north side of the road west of 58<sup>th</sup> Street where the existing pavement is wide enough to allow parking.

#### **College Avenue to 69th Street**

Option 1 proposes to provide seven-foot (7') parking lanes on both sides of the road along the segment of University Avenue between College Avenue and Aragon Drive.

Between Aragon Drive and 69th Street, Option 1 proposes to provide a one (1) twenty-one-foot (21') wide sharrow (shared bicycle/vehicle/parking lane) on each side of the road.

### **Parking Improvements Included in University Avenue Mobility Plan - Option 2**

#### **54th Street to College Avenue**

With Option 2, parking would be eliminated along the segment of University Avenue between 54th Street and College Avenue with the exception of the 300 foot long segment on the north side of the road west of 58<sup>th</sup> Street where the existing pavement is wide enough to allow parking.

#### **College Avenue to 69th Street**

Option 2 proposes deleting parking on the south side of University Avenue between College Avenue and Cartagena Drive and between Rolando Boulevard and Aragon Drive. With Option 2, parking would be eliminated from both the north and south sides of University Avenue between Aragon Drive and 69th Street.



**Parking Improvements Included in University Avenue Mobility Plan - Option 3**

**54th Street to College Avenue**

With Option 3, parking would be eliminated along the segment of University Avenue between 54th Street and College Avenue with the exception of the 300 foot long segment on the north side of the road where the existing pavement is wide enough to allow parking.

**College Avenue to 69th Street**

Option 3 proposes to provide seven-foot (7') parking lanes along both sides of the road on the segment of University Avenue between College Avenue and Rolando Boulevard. Between Rolando Boulevard and Aragon Drive, Option 3 proposes to provide a seven-foot (7') parking lane along the south side of University Avenue and no parking along the north side of University Avenue.

Between Aragon Drive and 69th Street, Option 3 proposes to provide one (1) twenty-one-foot (21') wide sharrow (shared bicycle/vehicle/parking lane) in the westbound direction (on the north side of the road). No parking will be allowed on the south side of the road (eastbound direction).

**Parking Improvements Included in University Avenue Mobility Plan – All Three Options**

All three (3) options of the University Avenue Mobility Plan proposes to re-construct the commercial driveways along the corridor, especially east of College Avenue to ensure driveways are standard widths and are located within City right-of-way to help reduce the parking within the City’s right-of-way and on sidewalk areas. Removal and/or restriping the commercial off-street parking areas would be required to help further reduce the ability for commercial businesses to encroach on the sidewalks.

**PEDESTRIAN BENEFITS AND IMPROVEMENTS**

Based on 2011 pedestrian data, there were only four (4) intersections along the University Avenue Corridor where pedestrian crossings exceeded 100 during the AM or PM peak hour. By the year 2030, there were projected to be seven (7) intersections along the corridor with 100 or more pedestrian crossings during the AM or PM peak hour. The increase in pedestrian activity warranted evaluation of existing pedestrian facilities to ensure that pedestrian capacity on sidewalks is being met.

A review of the pedestrian activity found that the majority of the pedestrian traffic along the University Avenue Corridor occurs west of Rolando Boulevard with the highest peaks occurring at the intersections of University Avenue/54<sup>th</sup> Street and University Avenue/College Avenue. The peak in pedestrian activity at these two (2) intersections is primarily due to the location of the bus transfer stations that exist at 54<sup>th</sup> Street and College Avenue.

A review of the existing conditions found that there are either missing or poor sidewalk conditions along most of the University Avenue Mobility study area with the majority of the problems occurring between College Avenue and Aragon Drive. Additionally, there was found to be a total of 555 feet of sidewalk along the University Avenue Corridor that provided less than 48 inches (4 feet) of clearance and was thus concluded to be obstructed. In addition to missing and obstructed sidewalk, existing field reviews found that there are a total of ten (10) missing curb ramps at four (4) intersections (University Avenue/Chollas Parkway; University Avenue/60<sup>th</sup> Street; University Avenue/Cartagena Drive; and University Avenue 68<sup>th</sup> Street) along the study corridor.

These pedestrian mobility issues were pointed out by the community during the Community Workshops, Project Working Group Meetings, and Walk Audits as the Pedestrian Walkability along the majority of the University Avenue Corridor, with the exception of the segment between College Avenue and Bonillo





## UNIVERSITY AVENUE MOBILITY STUDY

Drive was ranked poorly by the majority of the walk auditor participants.

The University Avenue Mobility Study looked at existing conditions along the corridor and identified projects that would improve the overall pedestrian environment. The following summarizes some of the key components that were included in the University Avenue Mobility Plan that will improve the pedestrian connectivity and walking environment:

- New or improved curb ramps to meet current ADA Standards. (This improvement is part of all three options.)
- New sidewalks. (This improvement is part of all three options, although some options have more sidewalks added than others.)
- Upgraded traffic signals with ADA push buttons and pedestrian countdown heads. (This improvement is part of all three options.)
- Reduce pedestrian crossing distances and improve pedestrian/bicycle and vehicle safety by eliminating free right turns at 54th Street and 58th Street. (This improvement is part of all three options.)
- New signal at re-aligned University Avenue/Chollas Parkway intersection provides additional protected pedestrian crossing. (This improvement is part of all three options.)
- The northeast corner of 58th Street and northwest corner of 60th Street would be widened to provide a wider plaza area for pedestrians (This improvement is part of all three options.)
- Curb pop outs would be provided at intersections to provide traffic calming and shorten the pedestrian crossing lengths. (Curb pop-outs are generally only provided as part of Option 3.)
- Tree wells/trees could be added to intersections to provide additional shade for the pedestrians.

### **BICYCLE BENEFITS AND IMPROVEMENTS**

Based on 2011 data, approximately 255 bicycles were observed during the AM peak period and 354 bicycles were observed during the PM peak period at the key intersections along the University Avenue Corridor. By the year 2030, bicycle activity along the University Avenue Corridor is projected to increase to 590 during the AM peak period and 790 during the PM peak period. The highest bicycle activity along the University Avenue Corridor occurs at the University Avenue/54<sup>th</sup> Street intersection.

The absence of bike lanes or bikeways along the University Avenue Corridor is a major concern. The University Avenue Corridor is identified in the Mid-Cities Community Plan and City's Bicycle Master Plan as having a Class II Bike Lane; however, there are no posted signs to identify this segment of University Avenue as a bike route. Therefore, a key component of the University Avenue Mobility Study was to identify ways to provide Class II Bike Lanes or at a minimum a Class III bike route along the University Avenue Corridor where feasible.



Elements of the University Avenue Mobility Plan that will improve the bicycle riding environment include:

- Option 1 includes the provision for a five-foot (5') dedicated bike lane with a two-foot (2') striped buffer between the adjacent travel lane along both the north and south sides of University Avenue between 54th Street and College Avenue. Between College Avenue and Aragon Drive, Option 1 provides for a five-foot (5') bike lane adjacent to a seven-foot (7') parking lane along both the north and south sides of University Avenue. Between Aragon Drive and 69th Street, Option 1 provides for one (1) twenty-one-foot (21') wide sharrow lane (shared bike/vehicle/parking lane) along both the north and south sides of University Avenue.
- Option 2 includes the provision for a five (5') minimum dedicated bike lane along both the north and south sides of University Avenue along the entire University Avenue Corridor between 54<sup>th</sup> Street and 69<sup>th</sup> Street.
- Option 3 includes the provision for a five-foot (5') dedicated bike lane with a two-foot (2') striped buffer between the adjacent travel lane along both the north and south sides of University Avenue between 54th Street and College Avenue. Between College Avenue and Rolando Boulevard, Option 3 provides for a five-foot (5') bike lane adjacent to a seven-foot (7') parking lane along both the north and south sides of University Avenue. Between Rolando Boulevard and Aragon Drive, Option 3 provides for a five-foot (5') bike lane adjacent to a seven-foot (7') parking lane along the south side of University Avenue and a five-foot (5') bike lane with no parking along the north side of University Avenue. Between Aragon Drive and 69th Street, Option 3 provides for one (1) twenty-one-foot (21') wide sharrow lane (shared bike/vehicle/parking lane) along the north side of University Avenue and a dedicated six-foot (6') bike lane along the south side of University Avenue.

**TRANSIT BENEFITS AND IMPROVEMENTS**

Based on the average daily ridership provided by MTS (January 2011), the corridor has 3,195 daily trip ends. The breakdown by route is shown in Table ES-7. The majority of ridership leaving the corridor is in the westerly direction. The Bus Route 7 carries the majority of riders.

By the Year 2030, the University Avenue Corridor is anticipated to have a total of 3,830 trip ends, with Route 7 having 3,100 trip ends (1,510 eastbound, 1,590 westbound) and Route 10 having 730 trip ends (520 eastbound, 210 westbound). Per discussions with MTS, the existing bus supply should be able to adequately accommodate the additional transit ridership.

Table ES-7 - Summary of Year 2030 Transit Daily Ridership for University Avenue Corridor							
Route	Direction of Travel	Year 2011 Ridership			Year 2030 Ridership		
		Boardings	Alightings	Trip Ends	Boardings	Alightings	Trip Ends
7	Eastbound	373	889	1,262	450	1,060	1,510
	Westbound	991	343	1,334	1,180	410	1,590
<b>Route 7 Total</b>		<b>1,364</b>	<b>1,232</b>	<b>2,596</b>	<b>1,630</b>	<b>1,470</b>	<b>3,100</b>
10	Eastbound	44	385	429	60	460	520
	Westbound	150	20	170	180	30	210
<b>Route 10 Total</b>		<b>194</b>	<b>405</b>	<b>599</b>	<b>240</b>	<b>490</b>	<b>730</b>
<b>Corridor Total</b>		<b>1,558</b>	<b>1,637</b>	<b>3,195</b>	<b>1,870</b>	<b>1,960</b>	<b>3,830</b>



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As previously summarized in Tables ES-4 and ES-5, if no improvements are made to the corridor, the segment of University Avenue between College Avenue and Salvation Driveway is projected to operate at LOS E in the westbound direction during the AM peak hour and LOS F during the PM peak hour under 2030 conditions by the year 2030, and the University Avenue/College Avenue intersection is also forecasted to operate at LOS F during the PM peak hour. These changes to traffic operations will have a direct impact on the operations of transit operations along the corridor. Slower run times and longer wait times for buses will result in impacts to bus on-time performance.

In addition to reviewing ways to improve traffic flows along the corridor to maintain/improve the transit on-time performance, per field reviews of the existing transit stops, and discussions with the community members the University Avenue Mobility Study also looked at ways to improve pedestrian access to the transit stops, providing better transit stop locations, and improving the transit stops themselves where feasible.

Elements of the University Avenue Mobility Plan that will improve the accessibility and/or appeal of the transit stops along the corridor include:

- Bus Pads would be added at all transit stops.
- Several bus stops along the corridor would be relocated to provide a more accessible/appealing location. Please refer to the University Avenue Mobility Plan illustrations located at the end of this chapter for the specific bus stops that are being relocated.
- The station area at the University Square Bus Stop on the north side of University Avenue (Bus Stop 4W) would be enlarged and a pedestrian ramp would be added to provide direct access for the housing located to the north on the frontage road between 58<sup>th</sup> Street and 60<sup>th</sup> Street.
- The bus stop areas at 54<sup>th</sup> Street, 58<sup>th</sup> Street, 60<sup>th</sup> Street westbound, Cartagena Drive westbound, and Aragon Drive westbound would be enlarged to improve the waiting area.
- Access to all bus stops along the corridor would be improved.
- Consideration was given to providing a combined transit and bike lane along both the north and south sides of University Avenue between 54th Street and College Avenue. There is adequate room within the existing right-of-way to accommodate this type of scenario. Joint uses of bicycle and transit have been tried in several other jurisdictions; however, this use is not currently allowed per the California Vehicle Code and was therefore not included in any of the proposed options at this time.
- Option 2 would provide a dedicated transit lane along the south side of University Avenue lane between 58th Street and College Avenue. The dedicated transit lane should help decrease the delay experienced by the transit vehicles which could help improve the efficiency of the transit vehicles operating schedule and thus make transit more appealing.





## COST AND IMPLEMENTATION

Chapter 9 of this study provides a detailed description of the costs associated with implementing the recommend University Avenue Mobility Plan (Option 1) while Chapter 10 provides a summary of how construction of the various improvements along the University Avenue Study Corridor can be phased to provide the greatest benefit to the community while still considering the project’s underlying budget constraints.

## HOW THIS STUDY CAN BE USED

This study should be used as the guiding document for improvements for the University Avenue Corridor. There are many steps that will need to occur before any of the improvements identified in the University Avenue Mobility Plan can be constructed. This document or portions of this document will be helpful in completing many of the steps required before design or construction can begin, as well as pursuing funding for future phases of implementation.

Integration into the Community Plan Update and Capital Improvement Program: As local Community Plans undergo the process of updating the Mobility Elements, the elements of this plan should be considered by the community and integrated, as appropriate, into the Mid-Cities Community Plan. Based on the prioritization of projects and the funding sources available, short term projects should be considered for the City’s Capital Improvement Program (CIP).

Environmental Documental: Traffic operation analysis conducted for this report is consistent with the traffic study requirements established for the City of San Diego. Therefore operation analysis of the key intersections could be used in the development of environmental documents to support elements of the project. Traffic signal warrants could be used to justify the implementation of the new traffic signal at the University Avenue/Chollas Parkway intersection.

Grant Application Materials: Conceptual design plans and cost estimates are effective tools that the City could use to pursue grant funding opportunities that could lead environmental documents, final design, and construction. Digital files of the conceptual engineering and cost estimates as well as the traffic operational analysis files were provided with this document to the City for use in future phases of the project.

There are many ways the City and the community could utilize the analysis prepared as part of this project. Community Planning Groups have the technical information necessary to identify high-priority projects and work with the local government in seeking funding to complete those elements that could resolve current mobility issues along the University Avenue Corridor.

## SUMMARY

The Technical Project Team would like to thank all the volunteers and community members who participated in the development of this plan. The countless hours of meetings attended by the Project Working Group, the active participation by the community at the workshops, and the hard work by the technical team resulted in a plan that identifies feasible solutions for the University Avenue Corridor. The concepts identified in this study are a starting point and could be used to attract both potential funding sources as well as community support for much needed mobility improvements along the University Avenue Corridor.