

ROSECRANS CORRIDOR MOBILITY STUDY

FINAL REPORT

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EXECUTIVE SUMMARY

The Rosecrans Corridor Mobility Study was initiated in May 2009. The goal of the study was to identify physical improvements within the four (4) mile corridor that improve access and circulation to all modes of transportation. To complete this task, the corridor was first divided into four areas:

Area 1: North Bay-Midway (Camino del Rio from I-8 connectors to Sports Arena and Rosecrans Pacific Highway to Lytton Street)

Area 2: Liberty Station/NTC (Lytton Street to Nimitz Boulevard)

Area 3: Point Loma Village (Lytton Street to Talbot Street)

Area 4: Peninsula (Talbot Street to Naval Submarine Base)

As each of these four areas had their own characteristics and transportation issues, dividing the corridor into sections allowed the community and project team to focus on the specific mobility concerns for each area. In doing so, the Project Team and Project Working Group developed study area specific solutions. Meeting with community members from each of the study areas, conducting walk audits by study area and conducting workshops that focus in each area resulted in mobility solutions that address the transportation concerns for each area. The issues identified for the corridor were widely varied, ranging from improving traffic flow to slowing down speeding traffic.

In Area 1 (North Bay-Old Town), concerns from the community focused on improving the traffic flow and improving access for all modes through the most congested portion of the corridor. High level traffic simulation software and modeling were used to evaluate the flow of traffic and identify improvements that would address these mobility concerns. In Areas 3 and 4 (Peninsula), concerns about mobility focused around pedestrian access and maintaining existing roadway capacity. Improvements through this area centered on improving the pedestrian and bicycle environment, providing opportunity for streetscape and/or landscape and improving operating conditions at critical intersections.





The main components of the Mobility Study included Community Outreach, Technical Analysis, Physical Constraints Analysis and Feasibility, Preliminary Design and Cost Estimating and Implementation. Over a nine month period, the Project Team, Project Working Group and Community worked together to establish this comprehensive plan. The sections of the report outline the analysis completed, the community outreach process undertaken and the recommendations of this Mobility Study.

ROLE OF COMMUNITY INPUT IN THE MOBILITY STUDY

To gain an understanding of the issues within the community a total of three workshops were conducted over a four month period. A detailed discussion of the various community outreach events, notification, media coordination and project website is provided in Chapter 6 of this study.

The workshops focused on understanding the issues and developing solutions. Although this project evaluated improvements to mobility, a number of comments from the community raised concerns over existing land uses and development of future properties in the study area. Although valuable, and documents in this report, the land use comments were not directly addressed in this study.

Workshop 1

Comments received during the first workshop were used to establish key areas of concern in conjunction with the technical analysis conducted for the corridor. Input received during the first workshop is provided in Table ES-1. Included in Table ES-1 is a reference to the improvement identified in this study that addresses this concern. As shown in Table ES-1, a number of the concerns raised during the first workshop are address in this Mobility Study.

Table ES-1
Summary of Concerns Raised at Workshop #1

Concern Raised	Addressed in Mobility Study?
AREA 1 – I-8 to Lytton Street	
Pedestrian and bicyclist safety	Improvement B: Sidewalks & Bicycle Lanes on Rosecrans (Old Town Transit Center to Sports Arena)
Traffic and circulation around Old Town	Outside of Study Area
Odd geometry at Rosecrans /Midway and Rosecrans / Sports Arena	Improvement C: Extension of Sports Arena & Improvement D: Rosecrans & Midway Improvements
Poor signage for Interstate 5	Improvement C: Extension of Sports Arena
Lack of bike lanes	Improvement B: Sidewalks & Bicycle Lanes on Rosecrans (Old Town Transit Center to Sports Arena) & Improvement E: Bicycle Lanes on Rosecrans (Midway to Lytton)

ROSECRANS CORRIDOR MOBILITY STUDY

Table ES-1 (continued)
Summary of Concerns Raised at Workshop #1

Concern Raised	Addressed in Mobility Study?
AREA 2 –Lytton Street to Nimitz Boulevard	
Access from side streets	Improvement F: Modified Signals at Roosevelt & Womble
Traffic congestion during Rock Church services, lunch hours, rush hours, and Sundays	Met with Rock Church and conveyed circulation issues with staff.
Speed	Improvement G: Intermittent medians with landscape & Improvement I: Side street curb extensions to control turning speed.
Traffic blocks emergency access	Improvement H: Widen bicycle lanes (Lytton to Nimitz); provides additional room for vehicles to pull over.
Poor visibility / line of sight	Recommended that landscape in median and along corridor be pruned to improve visibility. Low branches on trees block view from side streets. Future median landscape includes low vegetation.

Concern Raised	Addressed in Mobility Study?
AREA 3 –	
Condition of road (pot holes)	
Emergency access and bike safety	Improvement K: Stripe bicycle lanes through Area 3; provides room for vehicles to pull over and a dedicated lane for bicycles.
Policy/Trust (city council members)	Not addressed.
The navy surge	Recommended off-site parking facility and future consideration for Navy Shuttle service. US Navy participated in monthly PWG meetings and is aware of this community concern.
Close/relocate Rock Church	Land use issue – not addressed in study

Concern Raised	Addressed in Mobility Study?
AREA 4 –	
Speed: slower traffic Talbot to Kellogg	Improvements R through U: Traffic Calming Plan including midblock chokers, mini roundabout and curb extensions at intersections.
Accidents	Improvements R through U: Traffic Calming Plan including midblock chokers, mini roundabout and curb extensions at intersections.
Access from side streets and driveways	Not addressed.
Paving/potholes	Addressed through street maintenance program.
Stop adding residences to Area 4. There is no way out in case of an emergency	Land use issue – not addressed.
Increased traffic due to Rock Church and other large businesses in Liberty Station	Land use issue – not addressed.
Stop densification and increased traffic	Land use issue – not addressed.

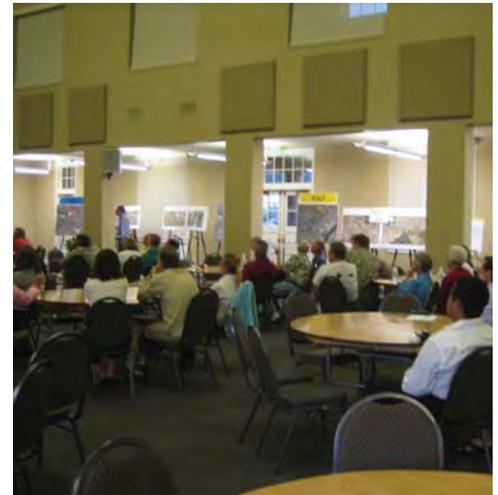


Concern Raised	Addressed in Mobility Study?
GENERAL COMMENTS FOR CORRIDOR OVERALL	
Access in Peninsula in case of emergency	Improvements along the corridor do not reduce the capacity of the road. Bicycle lanes help provide a "breakdown area" and turn lanes help improve the flow of traffic through intersections.
Speeding	Traffic calming through Area 4 aimed at reducing speeds from Submarine Base. Operational analysis of other portions of the corridor suggests that traffic improvements are needed for operations and speeds are not the issue.
Traffic congestion	Intersection improvements at Sports Arena, Midway, Roosevelt, Womble, Emerson and Talbot will improve the flow through these intersections. With the proposed improvements, the operational analysis suggests significant improvements in level of service and travel time will result.
Truck traffic	There are no limits on truck traffic for this corridor. Therefore, no improvements are identified to control or restrict truck access.
Traffic volumes	Traffic volume along the corridor is anticipated to increase through 2030 due to expansion of the airport, mixed use development at the Sport Arena and pending development/redevelopment throughout the study area. The Mobility Study suggests considering offsite parking and/or improving transit opportunities to address this long term growth.
Image/Aesthetics	Multiple opportunities for improved landscape and/or public art are included in the Mobility Study including curb extensions, raised medians and chokers.
Ugly, wide street	Due to the operational characteristics of the road, the curb to curb width is needed to maintain traffic flow. However, median improvements will help break up the visual width of the road and create opportunities for landscape and public art.
Lack of transit facilities	SANDAG/MTS have not plans to increase service along the corridor. The Mobility Study includes a new queue jump lane on Rosecrans (southbound at Midway) and extension of the existing queue jump lane at Pacific Highway.
Dangerous to walk	New sidewalks through Area 1 and Area 4 improve pedestrian access along the corridor. Through Area 2, curb extensions help reduce the pedestrian crossing distance and wider bicycle lanes increase the buffer between the pedestrian and traffic flow. New curb ramps are proposed along the corridor along with ADA enhancements at signalized intersections including countdown timers and audible push buttons.
Pedestrian connections across Rosecrans	New traffic signal at Rosecrans/Hancock and Rosecrans Emerson create two new signalized crossings for pedestrians. In addition, curb extensions are recommended in Areas 2 through 4 to help reduce the crossing distance for pedestrians and increase pedestrian visibility from the side street.

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Workshop 2

At the second workshop, preliminary concepts were presented. Participants were given the opportunity to review draft concept plans and share their thoughts with the project team. A preference survey was conducted to collect participant opinions about the concepts developed. The concepts presented at the workshop received mixed results. Approximately 50 people participated in the workshop and their input was valuable in identifying the elements of the plan that needed further refinement or consideration.



Executive Summary

Workshop 3

At the final workshop, the Draft Recommended Concept Plan was presented. The Draft Recommended Concept Plan included a wide array of improvements for the corridor. Although the elements of the plan are designed to work together to improve overall mobility, the cost to design and construct the improvements as one project is infeasible. Therefore, components of the Recommended Concept Plan were grouped into 22 improvements identified as Improvements A through V. Each improvement included elements of the plan that could be constructed together to provide an overall mobility benefit to the corridor. In most cases, the elements provide a benefit to more than one mode. These 22 improvements are used throughout this document for the purpose of cost estimating, implementation planning and project ranking.



Rosecrans Corridor Mobility Study Preliminary Recommended Alternative Preference Survey			
As you visit each station, please complete the form and drop it in the comments box before you leave. The comment box is located at the right side.			
Station 1: Area 1 (Taylor to Harbor)			
	Like	Neutral	Dislike
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
Station 2: Area 2 (Downtown to Harbor)			
	Like	Neutral	Dislike
	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
Station 3: Area 3 (Downtown to Harbor)			
	Like	Neutral	Dislike
	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
Station 4: Area 4 (Downtown to Harbor)			
	Like	Neutral	Dislike
	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
Comments:			
Thank you! Please remember to turn in your survey at the sign-in station!			



During the third workshop, participants were invited to visit multiple stations and view the 22 improvements identified in the Draft Recommended Concept Plan. Participants were asked to complete a preference survey identifying whether they liked or dislike the improvement concept. Results of the survey are presented in Table ES-2.

Table ES-2.
Rosecrans Corridor Mobility Study Open House Preference Survey Results

	Like	Neutral	Dislike	Total Responses	No Response
Area 1					
Moore Street Median	25 47.2%	10 18.9%	18 34.0%	53	40 (43.0%)
Sidewalks & Bike Lanes to Transit Center	29 52.7%	10 18.2%	16 29.1%	55	38 (40.9%)
Extension of Sports Arena	20 37.7%	11 20.8%	22 41.5%	53	40 (43.0%)
Rosecrans & Midway Intersection Imp	37 67.3%	7 12.7%	11 20.0%	55	38 (40.9%)
Bicycle Lanes on Rosecrans/Parking Removal	19 35.8%	7 13.2%	27 50.9%	53	40 (43.0%)
Long Term: Grade Separation	18 39.1%	9 19.6%	19 41.3%	46	47 (50.5%)
Long Term: Realignment	22 45.8%	11 22.9%	15 31.3%	48	45 (48.4%)
Area 2					
Modified Signals (Roosevelt & Womble)	33 55.0%	13 21.7%	14 23.3%	60	33 (35.5%)
Intermittent Medians & NB Left Turn Access	25 42.4%	14 23.7%	20 33.9%	59	34 (36.6%)
Wider Bicycle Lanes	16 26.2%	9 14.8%	36 59.0%	61	32 (34.4%)
Side Street Curb Extensions	18 31.0%	13 22.4%	27 46.6%	58	35 (37.6%)
Consolidation of Transit Stops	27 46.6%	16 27.6%	15 25.9%	58	35 (37.6%)
Long Term: Bicycle Boulevard	26 48.1%	4 7.4%	24 44.4%	54	39 (41.9%)
Area 3					
Stripe Bicycle Lane	11 22.0%	8 16.0%	31 62.0%	50	43 (46.2%)
Landscape Medians & Left Turn Pockets	15 31.3%	12 25.0%	21 43.8%	48	45 (48.4%)
New Signal at Emerson	24 48.0%	7 14.0%	19 38.0%	50	43 (46.2%)
Side Street Curb Extensions	17 34.0%	12 24.0%	21 42.0%	50	43 (46.2%)
Relocation of Transit Stops	26 52.0%	11 22.0%	13 26.0%	50	43 (46.2%)
Long Term: Bicycle Boulevard	23 52.3%	4 9.1%	17 38.6%	44	49 (52.7%)
Area 4					
Restripe Rosecrans & Talbot	32 51.6%	11 17.7%	19 30.6%	62	31 (33.3%)
Complete Sidewalks on West Side	27 40.3%	17 25.4%	23 34.3%	67	26 (28.0%)
Curb Extensions at Owen & Bessemer	14 22.2%	22 34.9%	27 42.9%	63	30 (32.3%)
Median Islands at Armada	13 21.0%	7 11.3%	42 67.7%	62	31 (33.3%)
Chokers at Qualtrough & Kona	12 19.4%	12 19.4%	38 61.3%	62	31 (33.3%)
Mini Roundabout at McCall	14 20.9%	6 9.0%	47 70.1%	67	26 (28.0%)
Consolidation of Transit Stops	26 42.6%	24 39.3%	11 18.0%	61	32 (34.4%)

According to the 93 surveys received during the workshop, the following concepts liked by a majority of responding participants (greater than 50%):

- Sidewalks & Bike Lanes to Transit Center (many participants commented they supported the concept of the sidewalks but not the bicycle lanes)
- Rosecrans & Midway Intersection Improvements
- Modified Signals (Roosevelt & Womble)
- Relocation of Transit Stops (Area 3)
- Long Term: Bicycle Boulevard (Area 3)
- Restripe Rosecrans & Talbot

ROSECRANS CORRIDOR MOBILITY STUDY

Concepts disliked by a majority of responding participants (greater than 50%) included:

-
- Bicycle Lanes on Rosecrans/Parking Removal (Area 1)
- Wider Bicycle Lanes (Area 2)
- Stripe Bicycle Lanes (Area 3)
- Median Islands at Armada
- Chokers at Qualtrough & Kona
- Mini Roundabout at McCall

Input from the community during the workshops was one element used in the development of the Rosecrans Corridor Recommended Concept Plan. Other key components of the selection and evaluation included input from the Project Working Group and the Project Team as well as the results of the technical analysis.

ROLE OF PROJECT WORKING GROUP IN MOBILITY STUDY

In addition to the three workshops, a Project Working Group was formed to provide direction and input to the Technical Project Team. The Project Working Group was comprised of leaders from various organizations within the community. The group met monthly to discuss issues pertaining to the project, receive updates on the technical analysis and provide direction in the selection of the Recommended Concept Plan. The group also served as liaisons to their respective community groups and was responsible for disseminating information about the project to the community at large. The 22 improvements included in the Recommended Concept Plan were presented to the Project Working Group in November 2009. The Project Working Group collectively completed the preference survey, the results of which are summarized in Table ES-3.

Overall, the Project Working Group supported the 22 improvements of the Recommended Concept Plan, with the following exceptions:

- Improvement C: PWG recommended further study of improvements at Rosecrans St. / Sports Arena Blvd. They did not approve of the removal of the northbound left turn pocket.
- Improvement N: PWG was split on the side street curb extensions through Area 2. The PWG recommended that the installation of such devices be considered on a case-by-case basis pending requests by the community.
- Improvements S through U: PWG agreed with the community pertaining to the traffic calming recommendations for Area 4. Several community members in Area 4 attended the final workshop for the project and opposed the implementation of traffic calming. PWG members stated that they were not opposed to traffic calming through Area 4, but future implementation of such devices would require additional coordination with the community.



The Project Working Group unanimously agreed that the study area would benefit from the construction of an off-site parking structure. As part of the recommendations for this study, the Project Working Group recommended that such a site be identified in the future and major traffic generators from the study area participate in a shuttle service to help reduce the traffic coming into and out of the study area.

ROLE OF THE TECHNICAL PROJECT TEAM IN MOBILITY STUDY

The Technical Project Team was comprised of City staff, the consulting team and representatives from Caltrans. The Technical Project Team met on a monthly basis to discuss the operational analysis of the corridor, pedestrian and bicycle modeling efforts and transit operational assessment.

During the Technical Project Team meetings, members of City of San Diego staff participated to provide input on the analysis conducted. Staff from traffic engineering, planning and other City departments participated as necessary in discussion of the key areas of concerns and collaborated in the development of solutions to address the operational issues within the study area. These meetings were used to discuss the concerns raised by citizens and to identify solutions to issues that arose during the community outreach meetings.

ELEMENTS OF THE RECOMMENDED CONCEPT PLAN

A total of 22 improvement areas or improvement elements were identified in the project study area. The improvement areas are identified in Exhibit ES-1. Details of the elements are provided in Chapter 7 of this report. Table ES-2 summarizes all of the elements of the Recommended Concept Plan, results of the community preference survey, results of the PWG preference survey, cost and implementation timeline. This section provides a brief description of each element and the purpose of the element in resolving mobility issues.

Improvement A: Median at Moore Street

The intersection of Moore Street / Camino del Rio is currently unsignalized. Over the past 10 years 45 accidents, including one fatality, has occurred at this intersection. In the a.m. peak hour, over 250 vehicles turn southbound onto Moore Street. The intersection is located at the end of the I-8 freeway ramp where vehicles approach the intersection at upward of 45 to 55 mph. Signage has been placed in advance of this intersection from multiple directions to attempt to restrict traffic maneuvers approaching the intersection.

The Recommended Concept Plan includes closing the existing southbound left turn lane and constructing a raised median across Moore Street. Left turn traffic would be redirected to Hancock Street where improvements would be made to accommodate the additional traffic. U-turning movements would be allowed to maintain access to Moore Street at Camino Del Rio West.



ROSECRANS CORRIDOR MOBILITY STUDY

Table ES-3
Summary of Elements of Recommended Concept Plan

Improvement	Project Working Group Summary	Workshop #3 Summary	Implementation Timeline	Estimated Construction Cost	Type of Improvement
Area 1					
A. Moore Street Median	Like (90%)	Like (47.2%)	Short	\$334,225	Traffic Safety
B. Bicycle Lanes & Sidewalk Improvements	Like: Sidewalk & Bike (90%) Neutral: Signal (50%)	Like (52.7%)	Short	\$520,788	Pedestrian, Bicycle, Transit
C. Extension of Sports Arena	Extension Concept (40%/40%) Further Study (90%)	Dislike (41.5%)	Long	\$739,491	Traffic Flow & Pedestrian
D. Rosecrans & Midway Intersection Improvements	Like (70%)	Like (67.3%)	Medium	\$539,405	Traffic Flow, Transit & Bicycle
E. Remove Parking & Stripe Bike Lanes on Rosecrans (Midway to Nimitz)	Like (80%)	Dislike (50.9%)	Short	\$131,765	Bicycle
Area 2					
F. Modify Signals	Like (100%)	Like (55.0%)	Short	\$176,815	Traffic Flow & Pedestrian
G. Intermittent Medians and Northbound Left Turn Lanes	Like: 20% Neutral: 40% Dislike: 30%	Like (42.4%)	Medium	\$125,112	Traffic Safety & Pedestrian
H. Widen Bicycle Lanes through Area 2 (in conjunction with Improvement G)	Like (90%)	Dislike (59.0%)	Medium	\$47,040	Bicycle
I. Side Street Curb Extensions	Like: 40% Neutral: 20% Dislike: 30%	Dislike (46.6%)	Long	\$328,141	Pedestrian
J. Consolidation of Transit Stop	Like (100%)	Like (46.6%)	Short	\$30,000	Transit & Pedestrian
Area 3					
K. Stripe Bicycle Lanes	Like (90%)	Dislike (62.0%)	Short	\$105,545	Bicycle



Table ES-3
Summary of Elements of Recommended Concept Plan

Improvement	Project Working Group Summary	Workshop #3 Summary	Implementation Timeline	Estimated Construction Cost	Type of Improvement
L. Landscape Medians and Left Turn Pockets	Like (90%)	Dislike (43.8%)	Medium	\$276,767	Traffic Safety & Pedestrian
M. New Signal at Emerson	Like (80%)	Like (48.0%)	Short	\$201,196	Traffic, Pedestrian & Bicycle
N. Side Street Curb Extensions	Split (40%/40%)	Like (42.0%)	Long	\$207,181	Pedestrian
O. Relocation of Transit Stops	Like (100%)	Dislike (52.0%)	Short	\$33,000	Transit & Pedestrian
Area 4					
P. Restripe Rosecrans & Talbot	Like (100%)	Like (51.6%)	Short	\$68,924	Traffic Flow & Pedestrian
Q. Complete Sidewalks on West Side of Rosecrans	Like (90%)	Like (40.3%)	Medium	\$151,172	Pedestrian
R. Curb Extensions at Owens Bessemer	Like (80%)	Dislike (42.9%)	Uncertain	\$167,507	Traffic Calming & Pedestrian
S. Median Islands at Armada	Like: 30% Neutral: 20% Dislike: 40%	Dislike (67.7%)	Uncertain	\$36,570	Traffic Safety
T. Chokers at Qualthrough & Kona	Like: 30% Neutral: 20% Dislike: 40%	Dislike (61.3%)	Uncertain	\$56,560	Traffic Calming & Pedestrian
U. Mini-Roundabout at McCall	Dislike (80%)	Dislike (70.1%)	Uncertain	\$250,000	Traffic Flow & Traffic Calming
V. Consolidation of Transit Stops	Neutral (60%)	Like (42.6%)	Short	\$27,500	Transit
Recommendation by PWG					
Identify location for off-site parking structure	Like (100%)	N/A	Long	TBD	Reduction in Traffic Volume



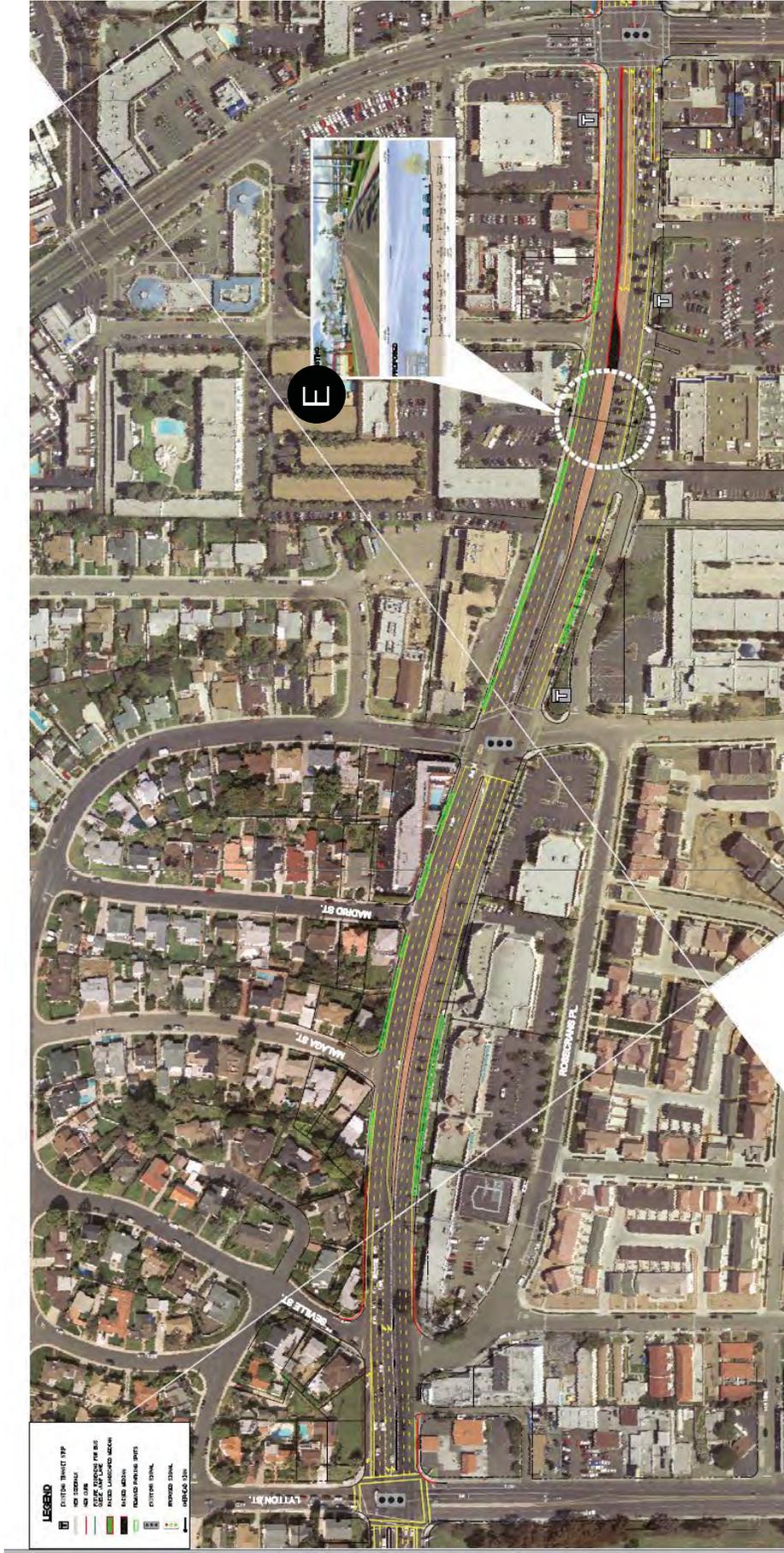
ROSECRANS CORRIDOR MOBILITY STUDY

Recommended Concept Plan

Area 1 (Sheet 1 of 2)

Exhibit ES-1





ROSECRANS CORRIDOR MOBILITY STUDY

Recommended Concept Plan
Area 1 (Sheet 2 of 2)

Exhibit ES-1





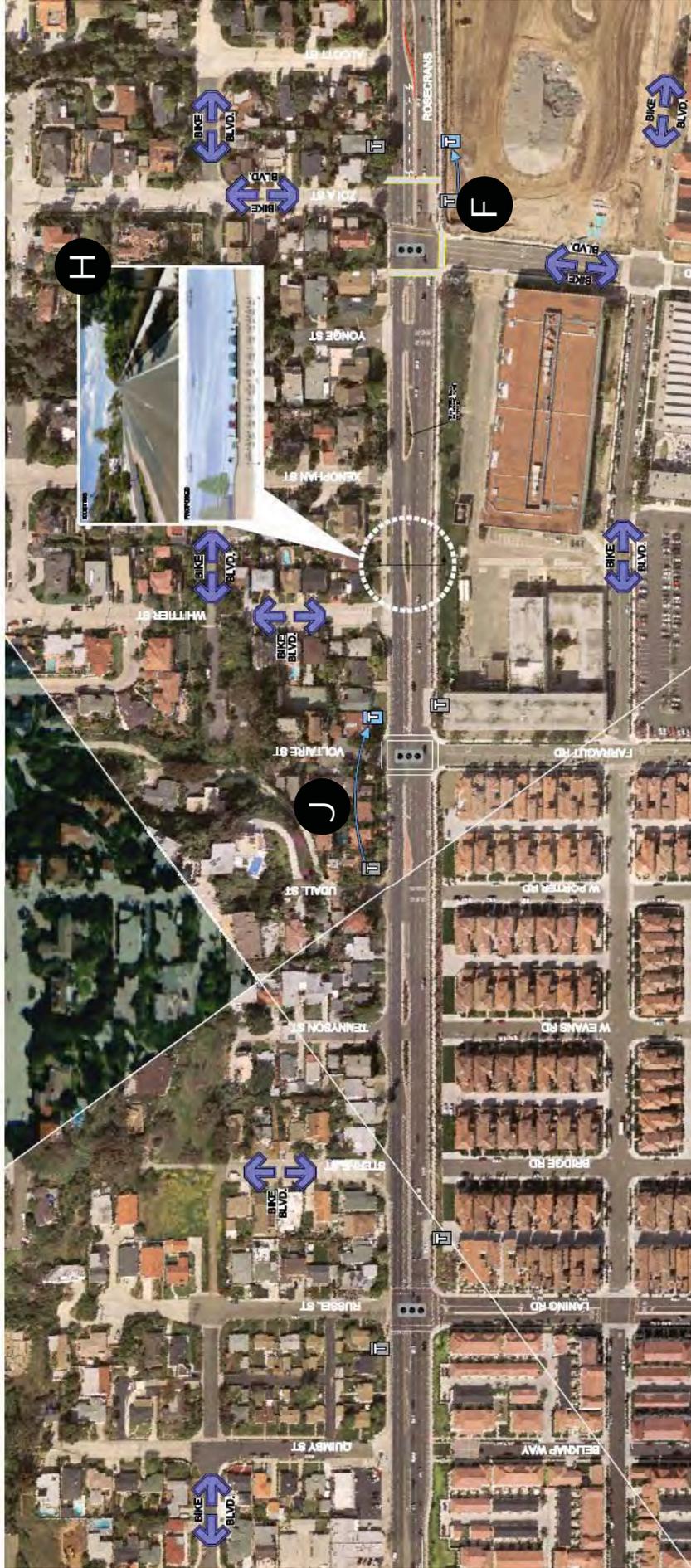
ROSECRANS CORRIDOR MOBILITY STUDY

Recommended Concept Plan

Area 2 (Sheet 1 of 3)

Exhibit ES-1





ROSECRANS CORRIDOR MOBILITY STUDY

Recommended Concept Plan

Area 2 (Sheet 2 of 3)

Exhibit ES-1





ROSECRANS CORRIDOR MOBILITY STUDY

Recommended Concept Plan

Area 4 (Sheet 1 of 2)

Exhibit ES-1





ROSECRANS CORRIDOR MOBILITY STUDY
 Recommended Concept Plan
 Area 4 (Sheet 2 of 2)

Exhibit ES-1



ROSECRANS CORRIDOR MOBILITY STUDY

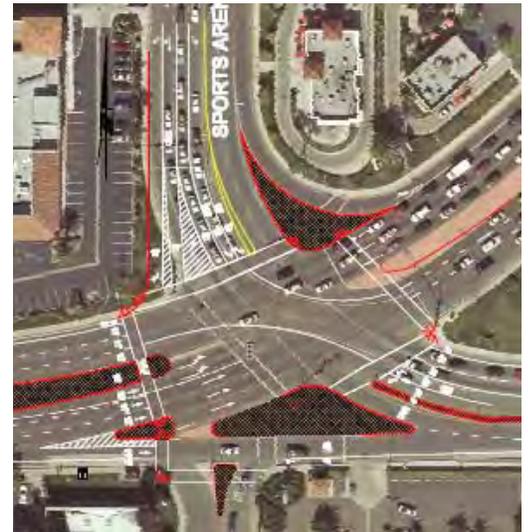
Improvement B: Sidewalks and Bicycle Lanes on Rosecrans (Old Town to Sports Arena)

Rosecrans Street links the Old Town Transit Center with Activity Centers in the Midway Community. Through this primarily industrial area, there are intermittent sidewalks, multiple curb cuts and no bicycle lanes. The Recommended Concept Plan includes constructing sidewalks, curb ramps, curb extensions and restriping the road to provide for Class II bicycle lanes along Rosecrans Street. These improvements would maintain existing parking and work within the available right-of-way. A new traffic signal is recommended at Hancock Street to improve pedestrian access and control left turn access from Rosecrans Street onto Hancock Street. This signal would be implemented in conjunction with the changes at Moore Street as outlined in Improvement A.



Improvement C: Extension of Sports Arena East at Rosecrans St

The Midway Community Plan currently identifies the long-term improvement of extending Sports Arena east and connecting to Pacific Highway. The existing alignment of Sports Arena through the intersection is such that this improvement could not be accomplished without impacts to right-of-way on the southwest corner of the intersection. Sports Arena is currently offset and the extension would require the north leg to move to the southwest to accomplish an acceptable alignment. To avoid introducing a fifth approach to the intersection, the westbound through movement on Sports Arena would continue to be restricted to right turn onto Rosecrans only.



Improvement D: Rosecrans and Midway Intersection Improvements

Traffic delays at Rosecrans St. / Midway Dr. are amongst the highest in the study area. In Area 1, the delays through this intersection control the flow of traffic both northbound and southbound. Existing queues extend beyond the available storage capacity and affect the ability of through traffic to fully utilize the capacity of the road. Recognizing this existing condition, the City of San Diego is will be improving the intersection of Rosecrans and Midway in early 2010 to include a second northbound left-turn lane and extend the existing dual southbound left-turn lanes. Although this is sufficient to address the existing operational deficiencies at this intersection, additional improvements were determined to be necessary to address the mid to long-term mobility at Midway Dr.



Therefore, the Recommended Concept Plan includes widening the intersection on west side of the street and reconstructing the median to provide for a northbound dedicated right-turn lane along Rosecrans. Adding a northbound right turn lane would reduce the delay northbound through and right-turning vehicles. On the southbound approach, Improvement D includes constructing a southbound right turn lane and possible queue jump lane for transit vehicles. With these improvements, the existing Class II bicycle lanes would be extended through the intersection.



Improvement E: Bicycle Lanes on Rosecrans (Midway to Lytton)



Rosecrans Street connects the Old Town Transit Center with several residential and commercial areas in Point Loma. Through this commercial area, there are multiple curb cuts and no bicycle lanes. Traffic counts collected for the corridor revealed that numerous bicyclists use this corridor on a daily basis. Without or with bicycle lanes, bicycles can and will use Rosecrans Street. The Recommended Concept Plan includes striping bicycle lanes within the existing right-of-way. To accomplish this, existing on-street parking would be removed from Evergreen Street to Lytton Street. With speeds along this portion of Rosecrans exceeding 40 mph, it is not a conducive environment for on-street parking and bicycle activity. Removal of the parking would remove one of the many challenges for bicyclists and passenger vehicles along this corridor.

ROSECRANS CORRIDOR MOBILITY STUDY

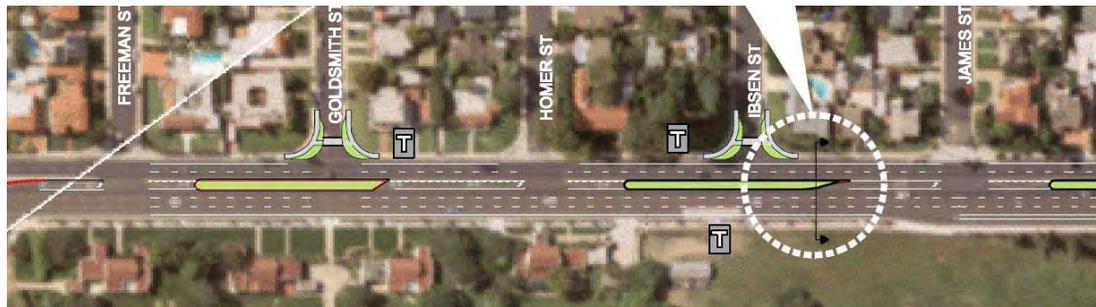


Improvement F: Modified Traffic Signals at Roosevelt Street and Womble Road.

Through Area 2 the west side of Rosecrans Street has no signalized access. Traffic signals provided at Roosevelt Street and Womble Road provide for controlled access for the east side of the street only.

The Recommended Concept Plan includes signalization of the west side of Rosecrans Street by offsetting the intersection at Roosevelt to include Dumas Street and offsetting Womble Road to include Zola Street. Although this may add some delay to Rosecrans Street due to the longer green time for the side street, it will improve the overall access for pedestrian, vehicles and access to the nearby transit stops.

Improvement G: Intermittent Medians with Northbound Left Turn Access



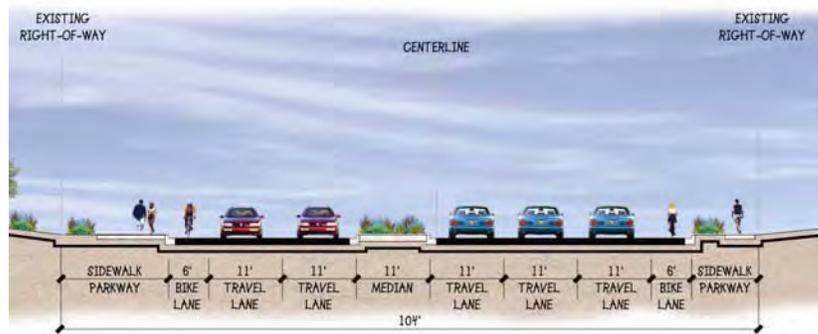
Through Area 2, most side street connections between Lytton Street and Freeman Street allow left turns both onto and off of Rosecrans Street. Existing traffic speeds and traffic volumes along Rosecrans Street make it difficult at best to turn from the side streets onto Rosecrans Street. Overall, the side street traffic volume through this section is low (10 to 20 vehicles in the peak hour), but the delay and potential risk of severe accidents is high.

The Recommended Concept Plan includes consolidating the number of access points by constructing a raised, landscaped median. This improvement would help traffic flow and reduce the potential for accidents through this section. Landscaped medians would match the existing aesthetic fronting NTC.



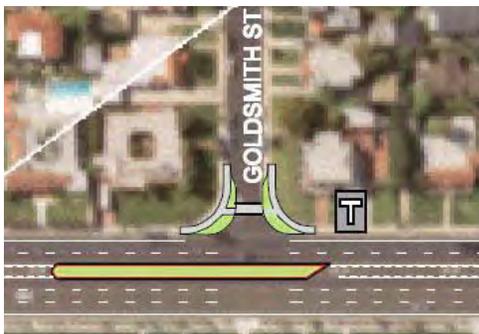
Improvement H: Widen Bicycle Lanes on Rosecrans Street (Area 2)

The existing bike lanes between Lytton and Roosevelt are four feet wide and include the gutter. Bicyclists who travel through this section ride very close to vehicular traffic with a posted speed limit of 35 mph. In many cases, bicycles have been observed on the sidewalk to avoid traveling with traffic. In addition, the



proximity of traffic to the sidewalk makes for an uncomfortable pedestrian environment. By narrowing the width of the existing 12 to 14 foot striped median to 10 feet and modifying the location and length of raised medians through this section, an additional two feet can be added to the bicycle lane on the west side of the street.

Improvement I: Side street Curb Extensions (Area 2)



In Area 2, the parkway on the west side of Rosecrans has no buffer from the adjacent vehicular traffic. The walk audits conducted for this project indicated that pedestrians do not feel safe walking on the west side of the street and many residents commented on the frequency of accidents that run up the curb and onto the sidewalk. Extending the curbs at intermittent corners will provide reduced crossing distance for pedestrians and will reduce the turning speeds of motorists at such intersections.

The Recommended Concept Plan includes curb extensions a total of three locations through Area 2. These three locations correspond to the locations of the proposed medians in Improvement H (Elliott Street, Goldsmith Street, Ibsen Street). If the community determines this improvement to be a high priority, the implementation of the curb extensions should involve community support for the traffic calming device. The quantity of the curb extensions and the location may be determined based on additional community input that should be conducted in this next phase of this project.

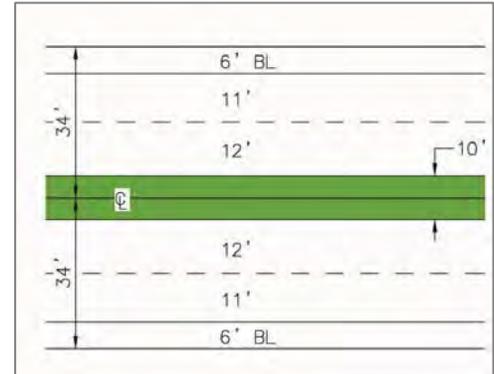
Improvement J: Consolidation of Transit Stops (Area 2)

Some existing transit stops along Rosecrans are placed mid-block, which may encourage illegal and unsafe pedestrian crossings. Some existing transit stops are minimally used and located near other stops. The Recommended Concept Plan consolidates and relocates transit stops to coincide with crosswalks at signalized intersections.

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Improvement K: Restripe Rosecrans Street to Include Bicycle Lanes (Area 3)

Class II bicycle lanes are provided in Areas 2 and 4 but are not provided in Areas 1 or 3, creating a discontinuous bicycle route through the study area. Through Area 3 it is feasible to restripe the road to provide Class II bicycle lanes within the existing right-of-way. This can be accomplished by narrowing the center left-turn lane and travel lanes. Narrowing and re-striping the existing travel lanes would provide six-foot bike lanes through Area 3.



Improvement L: Construct Landscaped Medians in Area 3

Through Area 3 left turns are permitted to and from Rosecrans from all unsignalized intersection. Level of service analysis of the unsignalized intersections showed that delays to side street vehicles typically exceed the acceptable LOS E threshold (more than 50 seconds per vehicle). Because the blocks are short, most blocks do not have a center median requiring vehicles to cross both directions of traffic during available gaps.



The Recommended Concept Plan includes constructing a landscaped raised median through Area 3. By consolidating the number of access points, traffic flow can be improved, delays on the side streets can be reduced, and the potential for accidents through this section is reduced. Peak hour side street traffic is less than 100 vehicles per hour on most connecting streets. Therefore, there may be some diversion of traffic through out the village with this change. However, parallel routes are available for traffic to circulate within a block of Rosecrans Street. Sufficient capacity is provided along the parallel streets to accommodate the potential changes in traffic patterns.

In addition to improving traffic conditions, the raised medians will also help to channelize pedestrian traffic and provide for a refuge area mid-crossing distance for pedestrians. The medians can be used to enhance the aesthetics of the corridor through landscape and provides opportunities for public art.



Improvement M: New Traffic Signal at Emerson Street

The lack of crosswalks or signalized intersections between Byron Street and North Harbor Drive results in illegal and unsafe pedestrian crossings. This section of Rosecrans is primarily commercial and has the potential to generate high pedestrian activity both around transit stops and along the many shops that front Rosecrans Street.

Due to the lack of traffic signals, vehicle traffic can flow uninterrupted through most of Area 3. This creates an environment focused on the automobile and creates a barrier between the east and west sides of Rosecrans Street. When traffic volumes are low, this lack of interruption can lead to speeding.

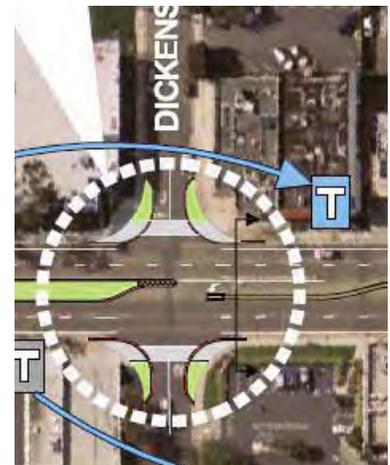


The Recommended Concept Plan includes the installation of a traffic signal midway between Byron Street and North Harbor Drive. The new signal at Emerson Street would provide a striped crosswalk for pedestrians, improved curb extensions, count down timers and audible push buttons.

Improvement N: Side Street Curb Extensions (Area 3)

This section of Rosecrans contains pedestrian generators, including commercial uses, motels, and proximity to the marina village. The roadway is currently four lanes with a center turn lane and a posted speed limit of 40 miles per hour. The land uses in this area are pedestrian-oriented but the streetscape lacks pedestrian amenities.

The Recommended Concept Plan includes the installation of curb extensions at three locations. The curb extensions would improve the visibility of pedestrians, reduce the pedestrian crossing distance and exposure in the street and provide opportunities to improve the aesthetic quality along the corridor through landscaping.



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Improvement O: Relocation of Transit Stops (Area 3)



Existing transit stops along Rosecrans Street in Area 3 are placed mid-block, which has been observed to result in unsafe pedestrian crossings. Transit ridership data indicates that many of the existing transit stops through Area 3 are minimally used and located near other stops.

To improve transit operations and flow and improve the safety of pedestrians around the transit stop, the Recommended Concept Plan proposes to consolidate and relocate transit stops. In most cases, the relocation

or consolidation places the transit stop closer to an existing crosswalk at a signalized intersection. This includes relocating transit stops closer to the proposed signal at Emerson (Improvement M).

Improvement P: Restripe Intersection of Rosecrans Street & Talbot Street

The intersection of Rosecrans at Talbot is currently striped to provide a shared northbound left-through-right turn lane. Vehicles heading northbound on Rosecrans often go around motorists waiting to make the northbound left turn onto Talbot, creating a weaving pattern. The southbound direction has two lanes (one through lane and one shared through-right turn lane), but only has one receiving lane, requiring vehicles to quickly merge at the receiving end of the intersection. To resolve these issues, the proposed improvement is to re-stripe the intersection to provide two northbound lanes, one left turn and one shared through-right turn lane, and re-stripe the southbound leg to contain one left-turn lane and one shared through-right turn lane. The existing crosswalks are also proposed to be re-striped to match the proposed lane configurations.



Improvement Q: Complete Sidewalks on West Side of Rosecrans Street (Area 4)

The southernmost portion of the Rosecrans corridor is primarily residential. Sidewalks are intermittent on both sides of the street and provide a discontinuous pedestrian path. In areas where sidewalks are missing, pedestrians must walk in either the bicycle lane or travel lane with no separation from vehicular traffic. Community outreach efforts have revealed that many residents prefer not to have sidewalks on both sides of the street, particularly on the east side of the street where several resident driveways front the road.



The Recommended Concept Plan includes installation of sidewalks on the west side of Rosecrans Street only. In completing the sidewalks on the west side of the street, a continuous pedestrian path that meets current ADA requirements will be provided for residents and guests of this community. This improvement may have minimal impacts on right of way, parking or bicycle access, but will greatly improve pedestrian access through this area.



Improvements R, T &U: Traffic Calming in Area 4

The southernmost portion of Rosecrans is primarily residential and provides access to the Navy Sub Base as well as local beach access. The roadway is currently two lanes with a posted speed limit of 30 miles per hour and intermittent sidewalks. Community outreach efforts have revealed that some residents feel that speeding is an issue through this section of the corridor. Therefore, traffic calming devices were identified for Area 4 to address the speeding issue. Three improvements comprise the total traffic calming plan developed:

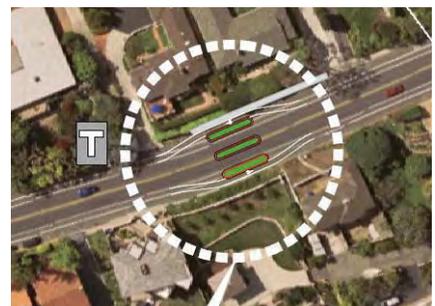
Improvement R: Curb Extensions at Owens & at Bessemer

Curb extensions would reduce the pedestrian crossing distance and exposure in the street and would serve as a traffic calming device to reduce speeds through the residential area. Curb extensions are proposed at two locations, Owen and Bessemer, due to studies that show traffic calming devices to reduce speed work best in sequence. In addition, curb extensions would improve visibility of pedestrians to motorists.



Improvement T: Choker at Qualthrough and Kona

Mid-block chokers would neck down the roadway and serve as a traffic calming device to reduce speeds through the area. Chokers near Qualthrough and Kona are proposed in addition to the previously mentioned curb extensions, due to studies that show traffic calming devices to reduce speed work best in sequence.



ROSECRANS CORRIDOR MOBILITY STUDY

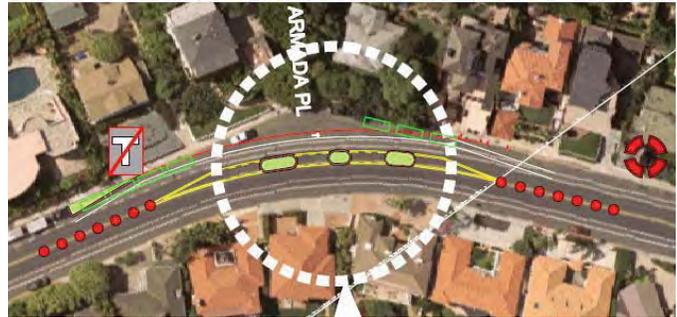
Improvement U: Mini Roundabout at McCall

A mini roundabout at McCall would neck down the roadway and serve as a traffic calming device to reduce speeds through the intersection. The proposed roundabout would require motorists to maneuver around the roundabout and be cautious of others entering the intersection. The design of the roundabout would provide curb extensions at each of the corners, thereby reducing the crossing distance for pedestrians and improving visibility of pedestrians to motorists. The roundabout is proposed at McCall because it provides east-west access to and from the beach, which is a pedestrian generator. On-street parking would not be removed as the curb extensions would be placed where there is existing red curb.



Improvements S: Median Islands at McCall

Rosecrans curves at Armada Place within the southern portion of the corridor. The roadway is currently two lanes with bike lanes and on-street parking. The posted speed limit is 30 miles per hour. Speed surveys show the 85th percentile at 35 mph northbound and 38 mph southbound. Accident reports show that most accidents occur on the southbound approach adjacent to the intersection of Kona Way. The cause of the accidents is most typically associated with hitting fixed objects, hitting parked vehicles or running off the road.



Residents have expressed concern about speeding through this particular section of the corridor. Therefore, the Recommended Concept Plan includes the installation of medians and highly reflective striping to help control traffic and reduce speeds as motorists travel through the curve. Median breaks are also proposed to maintain access to the surrounding residential driveways.

Improvements T: Consolidation of Transit Stops (Area 4)

Some transit stops along Rosecrans are underutilized with only a few riders per stop per day. The proposed improvement is to consolidate transit stops at locations with higher ridership to increase utilization of the transit stops.





OPERATIONAL ASSESSMENT OF ROSECRANS CORRIDOR

Intersection operations, roadway segment operations, signal timing improvements, travel time analysis, queue analysis and signal warrants were conducted to evaluate the vehicular benefits associated with the proposed elements of the Recommended Concept Plan. The analysis conducted assumed all of the improvements included in the Recommended Concept Plan are constructed as defined in the previous section. Benefits associated with implementing the elements of the plan individually may vary and may need to be evaluated further prior to design and implementation to achieve the optimal results for each improvement.

The following tables summarize the results of the technical analysis conducted for the overall operations of the corridor:

- Table ES-3: Intersection operating conditions
- Table ES-4: Roadway segment operational analysis
- Table ES-5: Travel time assessment

Intersection Operational Analysis Summary

Results of the intersection level of service analysis demonstrated that most intersections in the study corridor will operate at LOS D or better through year 2030. Implementation of the elements of the Recommended Concept Plan results in improved intersection operations at the following intersections when the 2030 No Build conditions are compared to the 2030 with Recommended Concept Plan:

- Camino del Rio West / Moore St. – Improvement A (median closure): LOS F to LOS E
- Rosecrans St. / Pacific Highway – Improvement B (signal timing improvement): LOS E to LOS D
- Rosecrans St. / Sports Arena Blvd. – Improvement C (geometric improvements): LOS E to LOS C
- Rosecran St. / Midway Dr. – Improvement D (geometric improvements): LOS E to LOS D
- Rosecrans St. / Garrison St. – Improvements L and M (landscape medians and traffic signal at Emerson): LOS F to LOS B
- Rosecrans St. / Carleton St. – Improvements L and M (landscape medians and traffic signal at Emerson): LOS F to LOS B

Although a number of intersections will benefit from the improvements identified in the Recommended Concept Plan, some intersections will continue to operate at LOS E or F by year 2030. In all cases, significant widening would be needed, which includes acquisition of residential and commercial right-of-way in highly constrained areas. Improvements that would significantly impact right-of-way in residential areas or would affect existing structures were not considered as feasible improvements within the timeframe associated with this Mobility Study. Long term improvements should continue to be considered in the Community Plan and be considered with land use changes or redevelopment along the corridor.

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Roadway Segment Operational Analysis Summary

Results of the roadway segment analysis showed that improvements identified in the Recommended Concept Plan do not directly improve the roadway segment operations based on the volume-to-capacity ratio methodology adopted by the City of San Diego. Similarly, the improvements do not negatively impact the roadway operations.

Improving the identified deficient segments to acceptable LOS D or better based on the volume-to-capacity ratio methodology requires widening to provide additional travel lanes. The Midway Community Plan includes improving Rosecrans Street from six lanes to eight lanes through portions of the corridor. Although this would resolve the deficient levels of service, such widening would have a negative impact on the existing land uses along the corridor. Due to right-of-way constraints and the extraordinary cost of widening the deficient roadway segments, adding capacity to improve daily roadway segment level of service is not included in the Recommended Concept Plan. Consideration for widening through Area 1 (North Bay – Midway) should be considered with potential redevelopment along the corridor as the right-of-way impacts would affect residents and businesses that front the corridor.

Due to the level of congestion and the traffic flow characteristics, the improvements along the corridor focused on improving the capacity at key signalized intersections. Field investigations showed that the source of congestion along the corridor is both due to volume of traffic through the intersections and the signal timing. If key improvements are made along the corridor to improve traffic flow (Midway/Rosecrans and Sports Arena/Rosecrans), the capacity of the existing roadway would significantly improve and improve the operations of the roadway segments. The benefits of these operational improvements are demonstrated in the discussion of the travel time assessment.

Long Range Recommendations for Corridor Circulation

The Project Working Group recommended that an “off-site” parking structure be provided that would help offset the traffic volumes coming into the Rosecrans Corridor Study Area. Combining this off-site parking lot with a Transportation Demand Strategy that integrates carpooling/vanpooling and shuttles to major traffic generators in the study area would help to reduce the overall traffic volume in the area. Coupling this type of improvement with improved access to transit and improved transit service and improved bicycle and pedestrian facilities will help to reduce the reliability on the passenger vehicle and reduce the overall traffic flow along the corridor.



Table ES- 3
Intersection Operational Analysis Summary

Intersection	Traffic Control (1)	Existing (2009)						2030 No Build						2030 With Recommended Plan					
		AM Peak		PM Peak		LOS		AM Peak		PM Peak		LOS		AM Peak		PM Peak		LOS	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
2) Rosecrans-Taylor St. / Pacific Highway	S	22.8	C	25.1	C	31.6	C	31.6	C	57.1	E	31.6	C	52.3	D				
3) Rosecrans St. / Jefferson St.	O	10.9	B	12.1	B	12.5	B	15.7	C	12.4	B	15.3	C						
4) Rosecrans St. / Moore St.	O	11.7	B	11.9	B	14.4	B	15.8	C	11.8	B	14.2	B						
5) Rosecrans St. / Hancock St.	(2)	8.6	A	9.4	A	11.7	B	17.0	C	20.6	C	11.9	B						
6) Rosecrans St. / Kurtz St.	S	15.3	B	25.4	C	20.4	C	52.3	D	25.3	C	38.1	D						
7) Rosecrans/Sports Arena/Camino D. Rio	S	23.3	C	35.5	D	43.0	D	62.9	E	17.2	B	26.6	C						
8) Rosecrans St. / Midway Dr.	S	37.0	D	60.0	E	41.5	D	68.2	E	30.7	C	44.0	D						
9) Rosecrans St. / N. Evergreen St.	S	15.9	B	30.3	C	20.7	C	30.7	C	13.7	B	18.6	B						
10) Rosecrans St. / Lyfton St.	S	47.9	D	51.7	D	77.2	E	69.2	E	67.4	E	55.0	E						
11) Rosecrans St. / Roosevelt Rd.	S	10.3	B	13.3	B	11.3	B	16.2	B	20.7	C	23.2	C						
12) Rosecrans St. / Curtis St.	O	20.5	C	15.5	C	17.2	C	14.6	B	14.7	B	10.0	A						
13) Rosecrans St. / Womble Rd.	S	18.8	B	17.9	B	20.6	C	20.3	C	16.0	B	30.6	C						
14) Rosecrans St. / Xenophon St.	O	13.6	B	12.1	B	13.3	B	12.7	B	10.0	B	10.7	B						
15) Rosecrans St. / Farragut - Voltaire St.	S	20.7	C	18.1	B	23.5	C	21.8	C	23.9	C	19.1	B						
16) Rosecrans St. / Russell - Laning Rd.	S	17.0	B	23.2	C	18.1	B	25.9	C	16.5	B	18.5	B						
17) Rosecrans St. / Oliphant St.	O	22.6	C	14.1	B	28.2	D	19.7	C	28.1	D	19.7	C						
18) Rosecrans St. / Macaulay St.	T - LTR	12.0	B	13.0	B	13.2	B	14.2	B	13.2	B	14.2	B						

Note: Deficient intersection operation indicated in bold.

(1) S = Signalized, A = All-Way Stop, T = Two-Way Stop, O = One-Way Stop, LTR = Left Turn Restriction

ROSECRANS CORRIDOR MOBILITY STUDY

Table ES-3 (continued)
Intersection Operational Analysis Summary

Intersection	Traffic Control (1)	Existing (2009)				2030 No Build				2030 With Recommended Plan			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
19) Rosecrans St. / Nimitz Blvd.	S	40.8	D	59.3	E	113.5	F	184.3	F	116.3	F	190.0	F
20) Rosecrans St. / Jarvis St.	T	16.3	C	30.9	D	22.2	C	14.8	B	10.2	B	10.7	B
21) Rosecrans St. / N. Harbor Dr.-Hugo St.	S	15.0	B	18.0	B	29.7	C	34.9	C	30.4	C	35.3	D
22) Rosecrans St. / Garrison St.	T	79.6	F	133.6	F	185.4	F	305.7	F	11.1	B	9.8	A
23) Rosecrans St. / Emerson St.	T	NA	NA	NA	NA	NA	NA	NA	NA	12.0	B	15.0	B
24) Rosecrans St. / Carleton St.	T	146.6	F	252.0	F	322.4	F	>1000	F	10.1	B	11.2	B
25) Rosecrans St. / Shelter Island - Byron	S	13.3	B	16.7	B	10.3	B	15.4	B	11.3	B	23.5	C
26) Rosecrans St. / Canon St.	S	23.0	C	20.1	C	33.5	C	45.7	D	42.3	D	38.1	D
27) Rosecrans St. / Talbot St.	S	22.1	C	12.5	B	19.2	B	15.0	B	21.8	C	24.1	C
28) Camino del Rio W. / Moore St.	T - LTR	31.5	D	30.6	D	71.3	F	65.0	F	35.8	E	24.4	C
29) Camino del Rio W. / Hancock St.	S	10.9	B	13.2	B	29.2	C	31.4	C	29.7	C	35.2	D
30) Camino del Rio W. / Kurtz St.	S	8.5	A	13.8	B	11.6	B	20.3	C	12.1	B	17.2	B

Note: Deficient intersection operation indicated in bold. NA = Not Available.

(1) S = Signalized, A = All-Way Stop, T = Two-Way Stop, O = One-Way Stop, LTR = Left Turn Restriction

(2) There is currently no stop control since Hancock Street is one-way westbound, away from Rosecrans Street. This intersection is proposed to be signalized under 2030 conditions with the Recommended Concept Plan.



Table ES-4
Roadway Segment Analysis Summary

Roadway	Segment	Class	Lanes	LOS E Capacity	Existing Conditions			2030 No Build			2030 With Recommended Plan		
					ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS
Rosecrans Street	From Pacific Highway to Sports Arena Blvd.	Major	4	40,000	15,503	0.39	B	28,300	0.71	C	28,000	0.70	C
	From Sports Arena Blvd. to Midway Dr.	Major	6	50,000	59,120	1.18	F	66,700	1.33	F	65,600	1.31	F
	From Midway Dr. to Lytton St.	Major	6	50,000	46,384	0.93	E	49,200	0.98	E	48,900	0.98	E
	From Lytton St. to Roosevelt Rd.	Major	5	45,000	42,513	0.94	E	49,500	1.10	F	49,500	1.10	F
	From Roosevelt Rd. to Laning Rd.	Major	5	45,000	37,950	0.84	D	46,100	1.02	F	46,100	1.02	F
	From Laning Rd. to Nimitz Blvd.	Major	4	40,000	34,259	0.86	D	43,100	1.08	F	43,100	1.08	F
	From Nimitz Blvd. to N. Harbor Dr.	Major	4	40,000	36,450	0.91	E	44,300	1.11	F	44,100	1.10	F
	From N. Harbor Dr. to Canon St.	Major	4	40,000	34,390	0.86	D	37,100	0.93	E	37,100	0.93	E
	From Canon St. to Talbot St.	Major ⁽¹⁾	2	27,000	17,850	0.66	C	18,600	0.69	C	18,600	0.69	C
	From Talbot St. to Kellogg St.	Major ⁽¹⁾	2	27,000	15,200	0.56	B	21,000	0.78	D	21,000	0.78	D
Camino Del Rio	North of Hancock St.	Prime	7	70,000	55,300	0.79	C	77,300	1.10	F	77,300	1.10	F
	Hancock St. to Kurtz St.	Prime	7	70,000	54,400	0.78	C	71,600	1.02	F	73,200	1.05	F
	Kurtz St. to Sports Arena Blvd.	Prime	7	70,000	50,700	0.72	C	67,600	0.97	E	69,700	1.00	E
Pacific Highway	North of Rosecrans St.	Major ⁽²⁾	2	20,000	5,818	0.29	A	13,400	0.67	C	13,400	0.67	C
	South of Rosecrans St.	Prime	6	60,000	13,070	0.22	A	27,100	0.45	B	27,100	0.45	B
Sports Arena Blvd.	Northwest of Rosecrans St.	Major	5	45,000	26,780	0.60	C	35,200	0.78	D	35,200	0.78	D

Note: Deficient roadway segment operation indicated in bold.

⁽¹⁾ LOS E Capacity has been estimated based on results of the Highway Capacity Manual Urban Street Methodology.

ROSECRANS CORRIDOR MOBILITY STUDY

Table ES-4 (continued)
Roadway Segment Analysis Summary

Roadway	Segment	Class	Lanes	LOS E Capacity	Existing Conditions			2030 No Build			2030 With Recommended Plan		
					ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS
Midway Drive	Northwest of Rosecrans St.	Major	4	40,000	27,130	0.68	C	32,300	0.81	D	33,100	0.83	D
	Southeast of Rosecrans St.	Major	4	40,000	29,440	0.74	C	32,200	0.81	D	32,200	0.81	D
Lytton Street	Northwest of Rosecrans St.	Major ⁽²⁾	2	20,000	11,797	0.59	C	15,300	0.77	D	15,600	0.78	D
	Southeast of Rosecrans St.	Major	4	40,000	19,650	0.49	B	25,600	0.64	C	25,600	0.64	C
Nimitz Boulevard	Northwest of Rosecrans St.	Major	4	40,000	17,264	0.43	B	34,300	0.86	D	34,300	0.86	D
	Southeast of Rosecrans St.	Major	4	40,000	12,020	0.30	A	44,100	1.10	F	44,300	1.11	F
North Harbor Drive	Rosecrans St. to Scott Rd.	Major	4	40,000	6,321	0.16	A	14,000	0.35	A	14,700	0.37	A
Canon Street	Northwest of Rosecrans St.	Collector	2	15,000	12,870	0.86	D	22,000	1.47	F	22,000	1.47	F
Talbot Street	Northwest of Rosecrans St.	Collector	2	8,000	5,950	0.74	D	8,800	1.10	F	8,800	1.10	F

Note: Deficient roadway segment operation indicated in bold.

⁽¹⁾ LOS E Capacity has been estimated based on results of the Highway Capacity Manual Urban Street Methodology.

⁽²⁾ Since a published standard capacity for a 2-Lane Major does not exist, capacity is assumed to be half of a 4-Lane Major.



In addition, major infrastructure will be needed to better distribute the traffic throughout the area. Caltrans has identified a number of long term improvements that will improve access to Lindberg Field, access to major transit facilities and freeway connection improvements. All these improvements will aid in reducing the passenger vehicle demand along the Rosecrans Corridor. However, the future of these improvements is uncertain as funding was unknown at the time this report was prepared. Therefore, the improvements suggested by Caltrans for the Horizon Year were not included in this analysis unless specifically in the Regional Transportation Plan.

In 2010, SANDAG will be revisiting the Regional Transportation Plan and identify projects through the year 2050. It is recommended that the City and Community work closely with SANDAG in this effort to identify these future deficiencies in the study area. Regional improvements to the I-5/I-8 interchange, connections to the freeway from Jefferson and connections to the I-8 from Kurtz will all provide congestion relief to Rosecrans Street.

Without this traffic relief, the operations along the corridor will continue to operate at LOS E/F conditions. The North Bay/Midway Community Plan should look closely at these segments and discuss the need to maintain the plan for eight lanes on Rosecrans Street. Long term redevelopment plans should consider the long term benefits of mix-use development in the area to address the traffic related issues.

Travel Time Analysis Summary

The improvements associated with the Recommended Concept Plan are forecast to result in a decrease in travel time along the corridor by as much as three minutes from Lytton Street to Taylor Street. This is primarily due to improved signal timing between intersections to reflect the year 2030 traffic volumes and the reduction in weaving between the intersections of Rosecrans/Sports Arena and Rosecrans/Kurtz. Between Lytton Street and I-8 freeway connectors, travel time is reduced by nearly four (4) minutes in the northbound direction. This is due to improved signal timing along the corridor and geometric improvements between Midway and Rosecrans. Overall, the improvements included in the Recommended Concept Plan are forecast to improve the travel times to near existing conditions travel times.

Table ES-5
Summary of Area One Travel Time Analysis (VISSIM Simulated for All Conditions)

Travel Time	Direction of Travel	Existing Conditions	2030 No Build	2030 With Recommended Plan	Difference RCP-NB (seconds)
Rosecrans: Lytton to Taylor Street	NB	5:45	9:32	5:56	-3:36
	SB	6:28	8:26	5:34	-2:52
Rosecrans: Lytton to Camino del Rio/ I-8	NB	4:34	9:23	4:26	-3:57
	SB	4:51	6:58	4:18	-2:40

Note: NB = No Build; RCP = Recommended Concept Plan

ROSECRANS CORRIDOR MOBILITY STUDY

Traffic Signal Warrant Assessment

Two new traffic signals are included in the Recommended Concept Plan (Improvement B & Improvement M). Operationally, the traffic signals offset the side street delay and provide for controlled pedestrian access in areas where limited pedestrian access is currently available.

Operationally, the stop controlled or yield (left turn) movements at the intersections are forecast to operate at deficient conditions by the year 2030 if no improvements are made. Signalization of the intersections would reduce delay, in particular to the side street movements, to acceptable levels (LOS D or better). To complete the analysis of the proposed new traffic signals, a traffic signal warrant analysis was conducted for the intersections of Rosecrans Street / Hancock Street (Improvement B) and Rosecrans Street / Emerson Street (Improvement M). The traffic signal warrants were conducted in accordance with the guidelines published in the Manual on Uniform Traffic Control Devices (MUTCD – 2006 Edition). The individual traffic signal warrants analyzed in this study include:

- Warrant 2 - Four-Hour Vehicular Volume.
- Warrant 3 - Peak Hour.
- Warrant 4 - Pedestrian Volume.
- Warrant 7 - Crash Experience.
- Table 4C-101 from MUTCD (2006) – ADT Estimate Form

Results of the traffic signal warrant analysis show that the intersections do not currently meet the minimum thresholds established in the MUTCD. By year 2030, as the traffic along the corridor increases, the thresholds are exceeded at both locations.

Table ES-6
Summary of Traffic Signal Warrant Analysis

Intersection	Warrant				
	2	3	4	7	Table 4C-101
Existing Conditions					
Rosecrans St. / Hancock St.					
Rosecrans St. / Emerson St.					
Year 2030 with Recommended Concept Plan					
Rosecrans St. / Hancock St.		✓			✓
Rosecrans St. / Emerson St.		✓			

✓ = Warrant Satisfied



PEDESTRIAN AND BICYCLE BENEFITS AND IMPROVEMENTS

Pedestrian and bicycle activity along the Rosecrans Corridor varies. In Area 1, high volume of pedestrian and bicycle traffic is directly related to the proximity to the Old Town Transit Center. In Area 2, there is a high volume of pedestrian activity near the Rock Church and High Tech High, both located with Liberty Station. Through the Village (Area 3), the potential for pedestrian traffic is high, but lack of connections between the east and west side of Rosecrans Street affects the level of pedestrian activity through this area. In Area 4, most pedestrian activity is recreational. Regardless of the source of pedestrian or bicycle activity, there are people out and about along the corridor on a daily basis. Many of the participants of the walk audits and community workshops stated that they felt it is unsafe to walk or bicycle along Rosecrans Street. Some stated that they would consider walking if the environment for walking was improved.

The mobility study looked at existing conditions along the corridor and identified projects that would improve the overall pedestrian and bicycling environment.

Pedestrians

Based on 2009 pedestrian data, approximately 1,525 pedestrian crossings occur during the a.m. peak period (7:00 to 9:00 a.m.) and 2,105 occur during the p.m. peak period along the Rosecrans Corridor. By the year 2030, pedestrian activity is forecast to increase to 2,311 pedestrian crossings in the a.m. peak and 2,808 in the p.m. peak periods. The increase in pedestrian activity warranted evaluation of the existing pedestrian facilities to ensure that pedestrian capacity on sidewalks is being met.

Analysis of the corridor showed that there are numerous gaps and multiple obstructions along the corridor. In addition, curb ramps at intersections did not meet the current ADA requirements. Therefore, the Rosecrans Corridor Mobility Study looked to improve accessibility for pedestrians by completing the sidewalks, providing curb extensions and removing obstructions where feasible. Approximately 30,800 linear feet of sidewalks are currently provided along the entire study corridor, which includes both Rosecrans Street and Camino Del Rio. The Recommended Concept Plan proposes to provide an additional 2,100 linear feet of new sidewalks in locations with currently discontinuous sidewalks, which does not include the sidewalks that will need to be reconstructed or replaced. The Recommended Concept Plan will increase the total linear feet of sidewalks along the corridor to approximately 32,900 feet. Other pedestrian improvements proposed with the Recommended Concept Plan include 71 new curb ramps and 39 new crosswalks along the corridor.

Bicycles

Based on 2009 bicycle data, approximately 476 bicyclists were observed during the a.m. peak period (7:00 to 9:00 a.m.) and 687 were observed during the p.m. peak period along the Rosecrans Corridor. By the year 2030, bicycle activity is forecast to increase to 788 bicycle trips along the corridor in the a.m. peak and 1,091 in the p.m. peak periods.

It should be noted that the highest bicycle activity along the corridor occurs in Area 1 along Rosecrans Street between the Old Town Transit Center and Sports Arena Boulevard. Through this section, there are currently no bicycle lanes and many of the sidewalks are discontinuous.

ROSECRANS CORRIDOR MOBILITY STUDY

Community members shared their concerns about mixing bicycle traffic and passenger vehicle traffic along Rosecrans Street. To address this concern, multiple alternatives were considered to provide Class I bicycle facilities (bicycle paths) along Rosecrans Street as part of this study and presented to both the project technical team and the Project Working Group. Results of this analysis showed that right-of-way constraints, existing curb cuts/driveways and the spacing between major intersections resulted in unfavorable conditions for providing such a facility. Therefore, this study recommends maintaining the Class II bicycle facilities and completing the network by adding new facilities in Areas 1 and 3.

The Rosecrans Corridor Mobility Study aimed to complete the bicycle network along the corridor by completing the gaps in the Class II bicycle lanes that occur in Area 1 and in Area 3. The study corridor currently includes approximately 21,000 feet of Class II bicycle lanes. The Recommended Concept Plan proposes to provide an additional 20,000 feet of Class Two bike lanes, which increases the total length of bike lanes along the study corridor to approximately 41,000 feet. The Recommended Concept Plan also includes recommendations for future consideration of Bicycle Boulevards parallel to Rosecrans Street to provide recreational cyclists an alternate, slower speed route through the study area.

TRANSIT OPERATIONAL BENEFITS AND IMPROVEMENTS

Based on SANDAG 2009 ridership data, the Rosecrans Corridor is responsible for 2,571 trips ends per day. By year 2030, the number of trip ends is anticipated to increase to 5,557 trip ends per day. The greatest increase is forecast to occur along Route 35, where trips ends are expected to increase by over 660%. The breakdown in trip ends by Route through year 2030 is summarized in Table 4-6.

Table ES-7.
Forecast Year 2030 Trip Ends

Route	Existing FY 09 Trip Ends	Projected 2030 Trip Ends	%Change
8/9	103	196	90%
28	1,654	2,227	35%
35	260	2,000	669%
84	369	0	-100%
923	185	1,134	513%
Total	2,571	5,557	116%



As summarized in the previous section of this document, ten segments along the Rosecrans corridor are forecast to operate at LOS E or F by the year 2030 according to the roadway segment operating conditions analysis. Similarly, by the year 2030, the number of intersections forecast to operate at deficient LOS increase from four to seven in the p.m. peak. These changes to traffic operations will have a direct impact on the operations of transit operations along the corridors. Slower run times and longer wait times for buses will result in impacts to bus on-time performance.

The Rosecrans Corridor Mobility Study focused on improving pedestrian access to transit and improving corridor flows to maintain or improve transit on-time performance. There are 42 transit stops currently provided along the Rosecrans corridor. Intersections with the highest delay and associated highest transit ridership were identified as key intersections in the transit study, which include:

- Rosecrans St / Taylor Street
- Rosecrans St. / Sports Arena / Camino Del Rio
- Rosecrans St. / Midway St.
- Rosecrans St. / Lytton St.
- Rosecrans St. / Nimitz Blvd. (LOS F in a.m. & p.m. peaks)

Operational Improvements

Intersection improvements planned for the intersections of Rosecrans St. /Sports Arena Blvd. and Rosecrans St. / Midway Dr. improve the traffic operating conditions to LOS D or better. By reducing the delay and queue length, transit operating conditions through the intersection. According to the travel time analysis conducted, the Recommended Concept Plan is likely to reduce transit travel time by as much as three minutes through Area 1. Additional improvements such as signal priority and queue jump lanes would further improve the operating conditions for transit vehicles.

Queue jump lanes are included in the Recommended Concept Plan at two locations. At the Rosecrans St. /Midway Dr. intersection, a new queue jump lane is planned that will reduce the transit wait time at the intersection. This will allow transit vehicles to bypass queues along the right shoulder in order to reach the proposed transit stop on the far side of the intersection on the southbound approach. Due to right-of-way constraints, this improvement is included in the long-term improvements for the intersection.

The existing queue jump lane at Rosecrans/Pacific Highway is also proposed to be extended to improve the transit vehicle access approaching the Old Town Transit Center (Improvement B). The extension of this queue jump lane can be accomplished through a re-stripe of Rosecrans Street, but may result in a restriction in left turn access at Jefferson Street.

ROSECRANS CORRIDOR MOBILITY STUDY

Transit Stop Modifications

There are 42 transit stops currently provided along the Rosecrans Corridor. To improve transit operations and pedestrian access to the stops, spacing between stops and daily riderships at each stop was evaluated. The plan includes the removal of eight existing transit stops. These stops are either located close to an existing stop or have very low (less than 10 boardings and alightings per day). In addition, seven transit stops are proposed to be relocated to near signalized intersections and other locations with safer pedestrian access, and one new transit stop is proposed to be added to the study corridor. The Recommended Concept Plan proposes a total of 35 transit stops to be provided on the Rosecrans corridor.

COST AND IMPLEMENTATION

Cost estimates were prepared for the 22 individual projects identified in the Recommended Concept Plan. Both construction cost (with contingency) and overhead costs (design, environmental review, bonding, etc) were considered in developing the preliminary estimates for the projects.

In total, the project is estimated to cost over \$13.3 million (in 2010 dollars). Additional costs that should be anticipated, but not included in this estimate include right-of-way and utility relocation. Detail cost estimates are provided in Chapter 9 along with conceptual design of the proposed improvements for each of the 22 elements of the Recommended Concept Plan. In many cases detailed environmental analysis may be necessary for implementation of the proposed improvements. In other cases, additional community outreach may be necessary.

Several projects identified for the Long Term or Beyond 20 year horizon do not include cost estimates. For example, the Project Working Group recommended further investigation of a parking structure to help offset the traffic impacts along the corridor. The location of the off-site lot will impact the cost associated with potential property acquisition and construction costs. Such long-term improvements will need to be re-evaluated for both cost and feasibility when the City determines such opportunities are available or if a funding source to conduct further evaluation becomes available.

With over \$13.3 million in improvements, the elements of the project will need to be implemented in a series of phases. Projects that require minimal right-of-way, have little to no environmental or community outreach needed and could be funded through available city or grant funds were identified as short-term (0-5 year) improvements. Projects that require environmental documentation, are more costly and/or need further input from the community were identified as medium (5-10 year) improvements. Higher cost projects that will require additional design, extensive environmental analysis or require substantial right-of-way acquisition were identified for the long term (10-20 years). Project receiving lower community and/or Project Working Group support and require additional community outreach were identified as beyond 20 years.

Using the general categories listed above, the projects were identified as short, medium and long term projects. However, with community support and available funding, medium and/or long term projects could be considered in an earlier phase. Likewise, lack of funding or additional constraints that could arise during final engineering could result in short term projects occurring in the medium or long term. The purpose of the project phasing plan is to distribute



the projects over several years and provide the City with guidance in allocating funds for future improvements along the corridor.

To further assist the City in identifying priorities in the study area, each of the projects identified were ranked in accordance with the criteria established in Council Policy 800-14. The 22 elements of the Recommended Concept Plan were allocated points based on Health and Safety (25%), Capacity and Mobility (20%), Cost and Potential for Funding (20%), Revitalization and Community Support (15%), Multiple Category Benefits (10%), Project Recurring Cost (5%) and Project Readiness (5%). Details of this ranking process and implementation plan are summarized in Chapter 10.

Projects that serve multiple modes, qualified for potential grant funding programs and required minimal environmental analysis naturally ranked higher than projects that were higher in cost, required additional environmental clearance and served only a single mode. Bicycle lanes and pedestrian improvements were amongst the highest ranking projects based on the scoring criteria established in Council Policy 800-14 and the elements of the project identified in the Mobility Study.

HOW THIS STUDY CAN BE USED

This study should be used as the guiding document for improvements with the study area. There are many steps that will need to occur before any of the 22 improvements identified in the Recommended Concept 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 respective North Bay/Pacific Highway, Old Town and Peninsula Community Plans. 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 Documentation: Traffic operational analysis conducted for this report is consistent with the traffic study requirements established for the City of San Diego. Therefore operational analysis of the key intersection can be used in the development of environmental documents to support elements of the project. Traffic signal warrants can also be used to justify the implementation of new traffic signals.

ROSECRANS CORRIDOR MOBILITY STUDY

Grant Application Materials: Conceptual design plans and cost estimates are effective tools that the City can use to pursue grant funding opportunities that will 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 can 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 will resolve current mobility issues.

SUMMARY AND CONCLUSION

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 meeting 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 Rosecrans Corridor. Many of the elements that received mixed community opinions will require additional community outreach before a final resolution may be met. The concepts identified in this study area are a starting point and can be used to attract both potential funding sources as well as community support for much needed mobility improvements along the corridor.



ROSECRANS CORRIDOR MOBILITY STUDY

Chapter 1: Introduction

The Rosecrans Corridor Mobility Study was initiated in April 2009 through a Community Planning Grant awarded to City of San Diego by Caltrans in 2008. For approximately nine months, the City and consulting team worked closely with the communities of Midway, Old Town and Peninsula in developing concepts to improve connectivity and mobility along Rosecrans Street. The study corridor extends from Camino Del Rio West to Kellogg Street, a distance of approximately four miles.

Combining the technical analysis with input from the community the City and consulting team worked together to identify potential solutions to address the various transportation issues along the study corridor. Because of the length of the corridor, the study area was broken into four distinct study areas, as illustrated below.



Throughout the course of the project, the study areas needs and concerns focused on these four study areas. In Area 1, traffic flow and connectivity to the transit center was identified as a high priority. In Area 2, improvements to the interface between the established residential neighborhood on the west side of Rosecrans and the newer development in NTC on the east side of Rosecrans was identified as a priority. Through Areas 3 and 4, pedestrian enhancements, streetscape and reducing speeds ranked high amongst community concerns.

This report summarizes the results of the technical analysis and community input received that resulted in the development of the Recommended Concept Plan. In Chapter 2 of the document, the methodology undertaken to complete the technical analysis is summarized. Using analytical methodologies approved by City of San Diego, the corridor was evaluated for traffic flow, pedestrian access, transit access and operations, bicycle access and parking.

In early 2009, new traffic count data was collected for the study corridor to document the existing conditions. Chapter 3 summarizes the results of the existing conditions analysis and identifies locations along the study corridor that would currently benefit from mobility enhancements.

To project the state of mobility to the year 2030, the SANDAG Traffic Model was used to project traffic volume data. Chapter 4 summarizes the methodology used to forecast daily and peak hour traffic, pedestrian, bicycle and transit



activity along the corridor through the year 2030. In addition, this chapter presents the operational analysis of the future year conditions. This data was then used to identify corridor mobility issues summarized in Chapter 5.

One of the many components involved in developing a plan for the Rosecrans corridor is input from the community. Three workshops, monthly meetings, web page postings, newsletters and media outreach are many of the ways the progress of the project was communicated to the community. The City and consultant team met monthly with a Project Working Group (PWG) who provided input and direction regarding the project process. The Project Working Group meetings were a forum for discussing the technical details of the alternatives as well as a forum for the public to share their insight and concerns about the elements of the project. In addition, Project Technical Team Meetings between City staff and the consultant team were held on a regular basis to discuss the technical aspects of the project. Details of the community outreach approach and results of the workshops are summarized in Chapter 6.

Combining the results of the technical analysis with the input from the community, the City and consultant team developed alternatives that address the over 20 key areas along the corridor. Areas along the corridor identified for improvement are summarized in Chapter 7 along with the recommended improvement for that location and the alternatives considered.

Technical analysis of the elements of the Recommended Concept Plan is presented in Chapter 8. This includes operational assessment of traffic improvements, connectivity assessment of bicycle and pedestrian facilities and accessibility assessment for transit. Cost estimates and conceptual engineering of the recommended improvements are provided in Chapter 9.

Each of the improvements identified in the Recommended Concept Plan were ranked based on priority. Higher priority projects meet existing mobility needs, are inexpensive to implement and need little to no environmental analysis. Medium priority projects may also address existing mobility needs, but are more expensive or more difficult to implement. Low priority projects may meet long term needs and may be far more costly than short or medium term projects. The details on how the key elements of the plan rank and the implementation plan are provided in Chapter 10.

During the final stages of this project, the consultant and City attended numerous meetings with the community groups in Peninsula, Old Town and North Bay. The project team requested that the community groups review the recommendations and provide final input regarding the elements of the Recommended Plan. Each group was asked to provide the project team a letter addressing their support for the elements of the plan. Chapter 11 includes all letters received from the community organizations as well as a summary of the Project Working Group's recommendations.

ROSECRANS CORRIDOR MOBILITY STUDY

The report concludes in Chapter 12 with a summary of the benefits of the project and an overview of the steps needed to continue the project.



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Chapter 2: Methodology

This chapter summarizes the methodology used to conduct the feasibility and alternatives analysis for the Rosecrans Corridor Mobility Study. The study analyzed the effects of potential changes within the public right-of-way that would affect pedestrian, bicycle, transit and vehicular circulation within the four identified study areas.

For traffic flow, an operational analysis was conducted to determine existing (2009) and horizon year (year 2030) levels of service and traffic flows for the improvements proposed. The operational analysis involved measuring and evaluating the ability of cars, trucks, and emergency vehicles to access, serve and travel along the corridor. Transit performance including spacing between stops, delay at stops and ridership were elements of the mobility study as well.

Improving access and circulation for bicycles and pedestrians was a key objective of this study. Improvements to existing facilities, completion of missing segments of sidewalks and bicycle lanes and identification of improved connections between pedestrians and transit were goals of the mobility analysis.

2.1 OPERATIONAL ANALYSIS REQUIREMENTS

The operational analysis requirements of the Rosecrans Corridor Mobility Study were as follows:

- Establish and report measures of effectiveness (MOEs) that assess conditions for pedestrians, bicycles, transit, cars/trucks, and parking
- Generate micro-simulations to accurately quantify and illustrate operations
- Conduct traffic analysis consistent with City of San Diego Traffic Impact Study Guidelines
- Assess impacts to, and accommodate, emergency vehicles in the recommended alternative.

2.2 MEASURES OF EFFECTIVENESS

In order to understand the effects of potential changes along the Rosecrans Corridor, measures of effectiveness (MOEs) were developed based on community input to comprehensively assess future conditions for each mode under each study alternative. Traffic analysis and simulation software programs such as Synchro and VISSIM were used to determine some of the measures.



Measures of effectiveness can be quantitative or qualitative. Qualitative MOEs describe a benefit or disbenefit along the corridor that is difficult to quantify. Pedestrian features such as street lighting and landscaping are improvements that would be typically classified as qualitative MOEs. Quantitative MOEs can be measured and are reported in measurements such as seconds of delay and minutes of travel time. The following sections summarize the MOEs established for each mode for this study.

Pedestrians

The Rosecrans Corridor Mobility Study focused on identifying ways to improve walkability in the study area. Walkability is a measure of the overall walking conditions in the area. Factors that affect walkability include land use mix, residential density, street connectivity, orientation and placement of homes and buildings, retail floor area ratio, access to mass transit, presence and quality of sidewalks, presence of curb ramps, presence of a buffer between walkways and moving vehicles (planter strips, on-street parking or bike lanes), safe and convenient pedestrian crossings, nearby local destinations, street furniture, street lighting, traffic flow, and air quality.

The walkability of the corridor was evaluated based on the criteria listed below. Based on the findings, recommendations to improve the walkable nature of the corridor were proposed.

- *Crosswalk Locations:* Spacing of safe, convenient, and accessible street crossings along the corridor.
- *Crosswalk Visibility:* Clearly marked and identifiable crosswalks for pedestrians and drivers.
- *Pedestrian Exposure at Crosswalks:* Distance/number of lanes for pedestrians to cross the street. (May indicate the need for center median refuge areas).
- *Vehicle Speeds at Pedestrian Crossings*
- *Conflicts between Pedestrians*
- *Presence and Quality of Sidewalks:* Adequate width, presence of four zones (edge zone, furnishings zone, throughway zone and frontage zone), accessible by persons with disabilities.
- *Walkability:* Quality of the walking environment considers presence of buffer from moving vehicles, street trees, street lighting, street furniture, and public art.
- *Access to Transit:* Spacing between transit stops, quality of the pedestrian waiting areas at stops and quality of pedestrian connections to transit stops.

Bicycles

Bicycle circulation was evaluated based on several different criteria, which included:

- *Capacity:* Ability to safely provide separate or shared facility for bicycle use on Rosecrans Street.
- *Crossings:* Safe and convenient east-west bicycle crossings of the principal north-south corridor streets to improve bicycle connectivity in study area.



ROSECRANS CORRIDOR MOBILITY STUDY

- *Linkage to Bicycle Master Plan:* Evaluates potential alternative routes in the study area and whether direct linkage to the City's Bicycle Master Plan and/or Community Plan bicycle routes is provided to and within the study corridor.
- *Vehicle Speeds:* Recommends bicycle facilities depending on the speed limits and prevailing speeds on the roadways. On roadways with speeds higher than 25 miles per hour it is recommended that a bicycle facility be provided to separate the bicycle and motorist travel lanes.
- *Access to Transit:* Quality of bicycle connections to transit service, presence of bicycle storage facilities at transit stops and ability to transport bicycles on transit vehicles.

Transit

The alternatives analysis evaluated the potential for improving access to transit within the study area. This included improvements to pedestrian and bicycle access near the Old Town Transit Center. Additionally, a reduction of total transit stops and relocation of specific stops are considered in this study that would affect transit operations along the corridor.

Traffic

The Highway Capacity Manual (HCM) methodology is the most widely accepted and familiar tool for analyzing intersection operations in the San Diego region. It is also required by the City of San Diego in traffic studies. As such, intersection delay using the HCM methodology was reported for both existing conditions and future changes to the intersection and roadway geometry as part of the alternatives analysis. VISSIM, a traffic micro-simulation program, was used to report additional MOEs for the Base and 2005 Concept scenarios as well as for all alternative concept plan scenarios because it provided a more accurate and useful tool to evaluate the alternatives. The traffic MOEs evaluated in the study area are as follows:

- *Intersections Delay (HCM Methodology):* Average vehicle delay for all approaches of an intersection, reported in seconds per vehicle.
- *Roadway Segment Daily Volume-to-Capacity (VIC) Ratios (City Average Daily Traffic (ADT) Thresholds):* Reports a Level of Service (LOS) based on daily traffic volumes and associated planning-level capacity thresholds.
- *Passenger Vehicle Travel Time (VISSIM):* Average time it takes to travel from one end of the corridor to the other, reported in minutes per vehicle. Additional information on the VISSIM traffic simulation software program is provided in Section 8.3.
- *Corridor Delay (VISSIM):* Cumulative delay along each corridor during the peak hour measured in hours. Additional information on the VISSIM traffic simulation software program is provided in Section 8.3.



Parking

Changes to the roadway configuration, pop-outs and transit improvements in the alternatives may affect parking supply and traffic flow. The measures of effectiveness for evaluating parking are as follows:

- *Number and Change in Number of Parking Spaces:* Number of spaces and net increase or decrease in parking spaces by block and corridor.
- *Effects of Increase/Decrease in Parking:* The effect of increase/decrease in parking by location.
- *Interaction of Parking Maneuvers and Traffic Flow:* Evaluation of safety and delay time to complete parking maneuvers for parallel, head-in diagonal and back-in diagonal parking which corresponds to delays imposed on traffic flow.

2.3 VISSIM – WHAT IS IT?

The VISSIM analysis software is a microscopic model capable of simulating multi-modal traffic flows, including cars, trucks, buses, heavy rail, light rail, bicycles, and pedestrians. The simulation capabilities of VISSIM are unlike typical HCM methods of analysis in that VISSIM tracks the individual vehicle interactions in the study corridor that affect overall operating conditions. VISSIM quantifies overall and individual intersection delays more realistically, as well as other measures of effectiveness, such as travel time and intersection delay. VISSIM also measures the effects of transit signal priority measures at individual intersections.

VISSIM was selected as an analytical tool because it is sensitive to the conditions that affect transit and traffic operations along the corridor, and allows passenger vehicle and transit travel characteristics to be quantified separately. The VISSIM traffic model generates travel time and delay based on multiple model runs that simulate a range of potential traffic operations scenarios.

2.4 CITY OF SAN DIEGO TRAFFIC IMPACT STUDY REQUIREMENTS

The Rosecrans Corridor Mobility Study was not a typical traffic impact study. Rather than analyzing the effects of a proposed development project or change in land use, the study analyzed the effects of potential changes in roadway configuration in order to determine the alternative that would best meet the project goals. The study still followed the City's Traffic Impact Study Guidelines to help evaluate the alternatives and to provide the required traffic analysis for the environmental study to follow.



ROSECRANS CORRIDOR MOBILITY STUDY

Study Scenarios

The following scenarios were analyzed to determine the impacts of the proposed changes in roadway capacity along the corridor:

- Existing Conditions
- Horizon Year 2030 Conditions with Existing Roadway/ Intersection Configuration
- Horizon Year 2030 with Recommended Improvements

Peak hour conditions within the a.m. peak period (7:00 to 9:00 a.m.) and p.m. peak period (4:00 to 6:00 P.M.) were evaluated for each study scenario. The following sections discuss the detailed operational analysis methodology.

Intersection Analysis Methodology

According to City standards, intersections are typically analyzed using the Highway Capacity Manual (HCM) methodology. Several software packages, such as Traffix, Synchro, and HCS, are available to evaluate traffic signals with the HCM methodology.

The HCM methodology peak hour intersection analysis calculates the average delay per vehicle for all approaches of an intersection in the case of signalized and all-way stop intersections and for the stop-controlled approach only in the case of a minor street stop-controlled intersection. A letter designation ranging from A through F is then associated to the intersection operations based on a set of delay ranges. Levels of service (LOS) A, B, and C are generally considered acceptable, LOS D is considered marginal, and LOS E and F are considered unacceptable. Table 2-1 presents the delay range for LOS A through F at signalized and unsignalized intersections.

Table 2-1.

Intersection LOS & Delay Ranges

LOS	Average Delay (sec)	
	Signalized Intersection	Unsignalized Intersection
A	0.0 – 10.0	0.0 – 10.0
B	>10.0 – 20.0	>10.0 – 15.0
C	>20.0 – 35.0	>15.0 – 25.0
D	>35.0 – 55.0	>25.0 – 35.0
E	>55.0 – 80.0	>35.0 – 50.0
F	>80.0	>50.0

Source: 2000 Highway Capacity Manual.



Roadway Segment Methodology

Roadway segment operations are generally evaluated by comparing existing and forecast average daily traffic levels to planning-level daily capacity thresholds. Daily capacity thresholds vary based on the street classification which is determined by functionality, roadway width, and the number of travel lanes.

Table 2-2 presents the various street classifications and associated planning-level daily traffic thresholds for LOS A through LOS E as published in the City of San Diego Traffic Impact Study Manual (TISM). The TISM indicates that the volumes and the average daily levels of service listed in Table 2-2 are only intended as a general planning guideline. The table does not take into consideration other factors that affect actual roadway capacity, such as lane widths, presence of a raised median, presence of driveways, number and spacing of cross streets, traffic controls, presence of parallel or angled parking and grade.

Table 2-2.
Roadway Classifications, LOS, and ADT Thresholds

Street Classifications (# Lanes)	Levels of Service				
	A	B	C	D	E
Expressway (6)	30,000	42,000	60,000	70,000	80,000
Prime Arterial (6)	25,000	35,000	50,000	55,000	60,000
Major Arterial (6)	20,000	28,000	40,000	45,000	50,000
Major Arterial (4)	15,000	21,000	30,000	35,000	40,000
Secondary Arterial/Collector (4)	10,000	14,000	20,000	25,000	30,000
Collector, no center lane (4); continuous left-turn lane (2)	5,000	7,000	10,000	13,000	15,000
Collector, no fronting (2)	4,000	5,500	7,500	9,000	10,000
Collector, Commercial-industrial fronting (2)	2,500	3,500	5,000	6,500	8,000
Collector, multi-family (2)	2,500	3,500	5,000	6,500	8,000
Sub-Collector, single-family (2)	-	-	2,200	-	-

Source: City of San Diego Traffic Impact Study Manual

*The daily roadway segment capacities summarized in Table 3-2 for one-way Streets were developed with City of San Diego staff.



ROSECRANS CORRIDOR MOBILITY STUDY

Thresholds of Significance

The City has established thresholds of significance to determine when a project's impact is significant and mitigation measures are to be identified. The thresholds are based upon the current and future operating conditions at an intersection or along a roadway segment. Table 2-3 summarizes the City's adopted thresholds of significance.

Table 2-3.

City of San Diego Thresholds of Significance Criteria

Level of Service with Project *	Allowable Change Due To Project Impact **					
	Freeways		Road Segment		Int.	Ramp Meter
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
LOS E (or ramp meter delays above 15 min.)	0.010	1.0	0.020	1.0	2.0	2.0
LOS F (or ramp meter delays above 15 min.)	0.050	1.0	0.010	0.5	1.0	1.0

* All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual. The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

** If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see above * note), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

KEY: Delay = Average control delay per vehicle measured in seconds for intersections, or minutes for ramp meters
LOS = Level of Service
Speed = Speed measured in miles per hour
V/C = Volume to Capacity ratio

2.5 SUMMARY

Establishing a clear set of measures of effectiveness at the onset of the project allowed the Project Team to objectively evaluate alternatives for the corridor. In this chapter, city criteria as well as project MOEs were established which were used and referenced throughout this document.

After a thorough review of the MOEs reported for each of the alternatives, the alternative with the most favorable overall balance of travel time and delay among the various modes and users along the corridor will be identified as the Recommended Concept Plan. The Recommended Concept Plan will be reviewed to ensure that the plan met the initial goals and community concerns identified for the project.



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ROSECRANS CORRIDOR MOBILITY STUDY

Chapter 3: Existing Conditions Assessment

The Rosecrans Corridor extends from Camino Del Rio and Taylor Street to Kellogg Street. In total, the corridor is approximately four miles with approximately fifteen signalized and over 60 unsignalized intersections. Exhibit 3-1 illustrates the limits of the study area. Due to the length and variation in land uses along the corridor, Rosecrans Street was broken into four distinct study areas:

- Area 1: Old Town & North Bay – From the Transit Center & I-8 Freeway to Lytton Street. This area is highly congested and caters primarily to the auto with wide streets and connections to the freeway system. However, this is also a key link to the transit system as it serves the Old Town Transit Center and many key transit stops serving North Bay and Peninsula. Significant congestion was observed between Midway and Camino Del Rio during both the a.m. and p.m. peak periods. Multiple studies have been done over the past 10 years evaluating the potential for improvements in Area 1. These recommendations will be considered as short and long term improvement plans are developed for the project.
- Area 2: NTC/Liberty Station – Recently modified as part of the Liberty Station project, this area serves both the redeveloped NTC site and the historic neighborhoods west of Rosecrans Street. Signalized intersection are provided at Lytton Street, Roosevelt Road, Womble Road, Farragut Road and Laning Road-Russell Street. Sidewalks and bicycle lanes are provided on both sides of Rosecrans through this section. As part of the Liberty Station project, Rosecrans Street was converted from a four lane arterial to a five lane arterial with three lanes northbound and two lanes southbound. To accomplish this change, the parking on the west side of Rosecrans was eliminated and the bicycle lane was narrowed to between four and five feet. Intermittent raised medians were constructed along Rosecrans and a parkway was created on the east side of Rosecrans buffering the sidewalk from the travel lanes.
- Area 3: Peninsula Village – Through this area Rosecrans is four lanes with a two way left turn lane. Although storefronts line each side of the street on street parking is not permitted through most of the corridor. Signalized intersections are provided at Nimitz Boulevard, North Harbor Drive, Shelter Island Drive and Canon Street. Continuous sidewalks are provided through Section 3 on both sides of Rosecrans Street, but bicycle lanes are not provided. In many areas, curb ramps and sidewalk obstructions make traversing this area on foot difficult.
- Area 4: Residential Peninsula/Marina – South of Taylor Street, Rosecrans narrows to two lanes and continues as such to Kellogg Street, where Rosecrans enters the Naval Sub-base. Through this section, single family residential properties line both sides of Rosecrans Street. On-street parking is provided along with a bicycle lane through much of Area 4. Sidewalks are intermittent between Taylor Street and Kellogg Street. Where sidewalks are not provided, pedestrians have been observed walking in the parking and bicycle lanes.



This chapter of the Rosecrans Corridor Mobility Study will focus on an assessment of the existing state of mobility for all modes of transportation and identify areas where short term improvements should be considered. To complete this assessment, the corridor was evaluated to determine the existing traffic operating conditions, accessibility and performance of transit, pedestrian facilities and accessibility, and bicycle access and circulation. A parking inventory was also conducted to determine the adequacy of and location of parking along the corridor.

Exhibit 3-1 - Project Study Area



3.1 TRAFFIC DATA COLLECTION

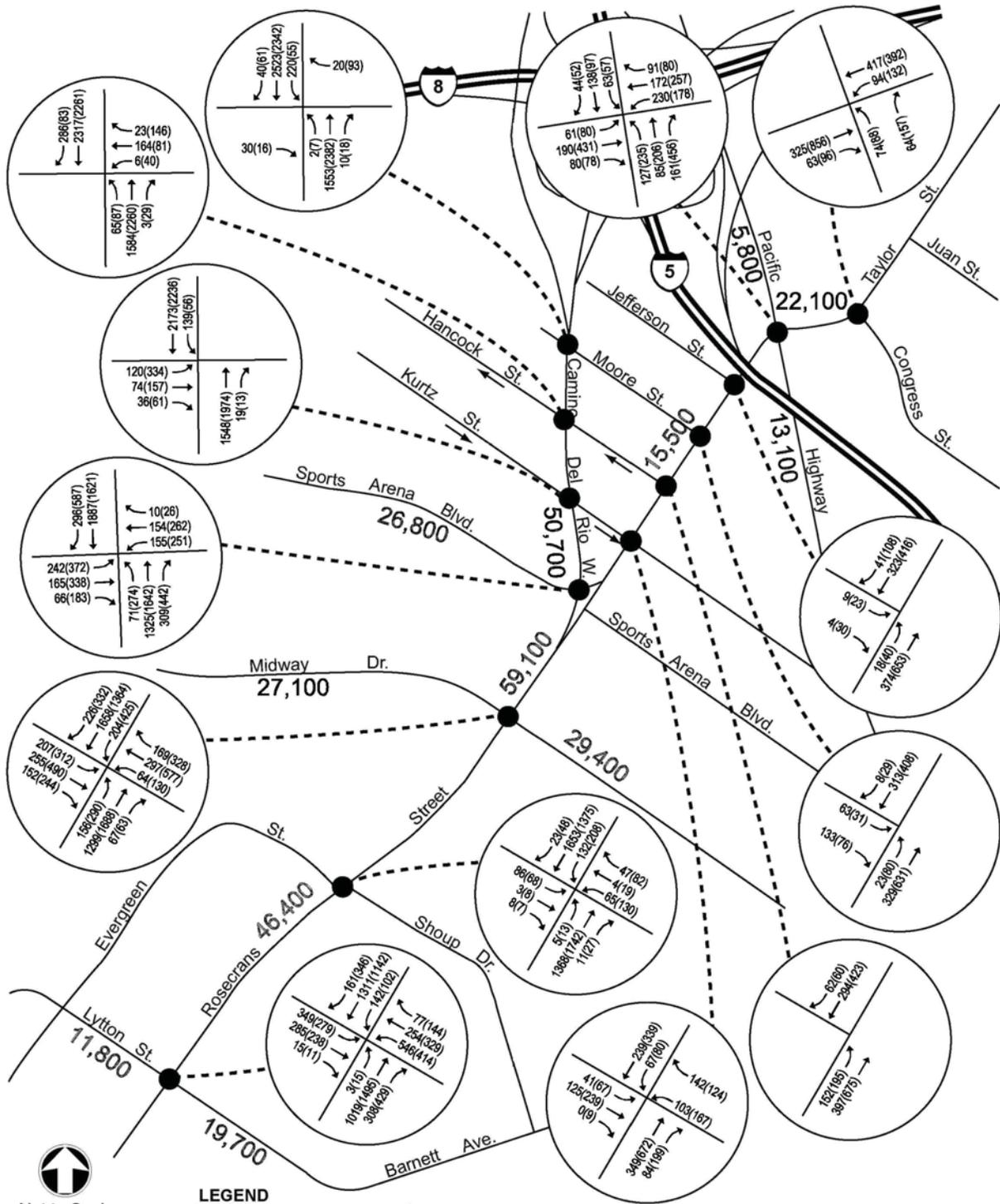
The corridor was evaluated to determine the existing operating conditions and available facilities for transit users, pedestrians and bicycles. In addition, a parking inventory was conducted to determine the types, location and quantity of parking available within the study area.

Traffic count data was collected at 29 intersections along both Rosecrans Street and Camino Del Rio West. All signalized intersections and key unsignalized locations were included in the traffic count data collection. Peak hour traffic counts were collected mid-week between the hours of 7:00 and 9:00 a.m. and 4:00 and 6:00 p.m. In addition, daily traffic count data was collected for a period of one-week at a total of 23 locations along the corridor and along segments adjacent to the corridor. Exhibits 3-2 through 3-4 illustrate the peak hour intersection volumes and daily traffic volumes. Traffic count data, intersection inventory data and signal timing sheets for each intersection is provided as Appendix 3-A.

In addition, speed survey data was collected along the corridor at six locations. Speed survey data was collected during the morning and the afternoon by direction. In accordance with the California Vehicle Code, the speed survey data was reported for a minimum of 100 vehicles per direction over a period of not less than one hour. The surveys were conducted during non-peak hours to reflect the free-flow speed along the roadway. Exhibit 3-5 illustrates the results of the speed surveys. Speed survey summary sheets are provided as Appendix 3-B of this report.

To supplement the speed survey data and to validate the capacity of the roadway, floating car surveys were conducted to document the travel time along the corridor. Travel time runs were conducted both northbound and southbound during the a.m. and p.m. peak periods. Floating car survey data is provided in Appendix 3-C. The results of the travel time runs are provided in Exhibit 3-6.

ROSECRANS CORRIDOR MOBILITY STUDY



Not to Scale

LEGEND
 XX/XX AM/PM Peak Hour Volumes
 XX,XXX ADT Volumes
 → One-Way Street

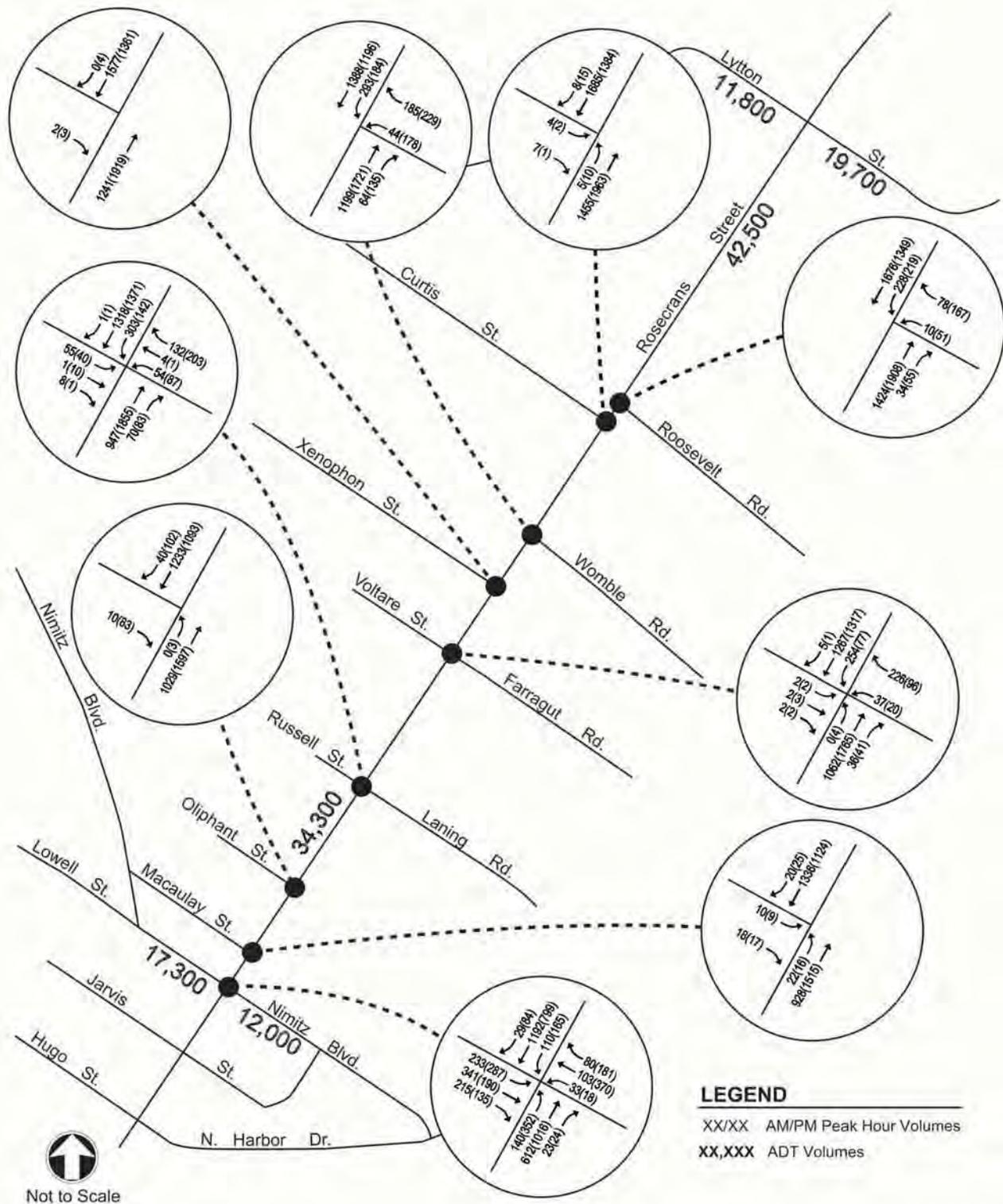


EXISTING TRAFFIC VOLUMES (AREA 1)

Exhibit 3-2

Existing Conditions Assessment

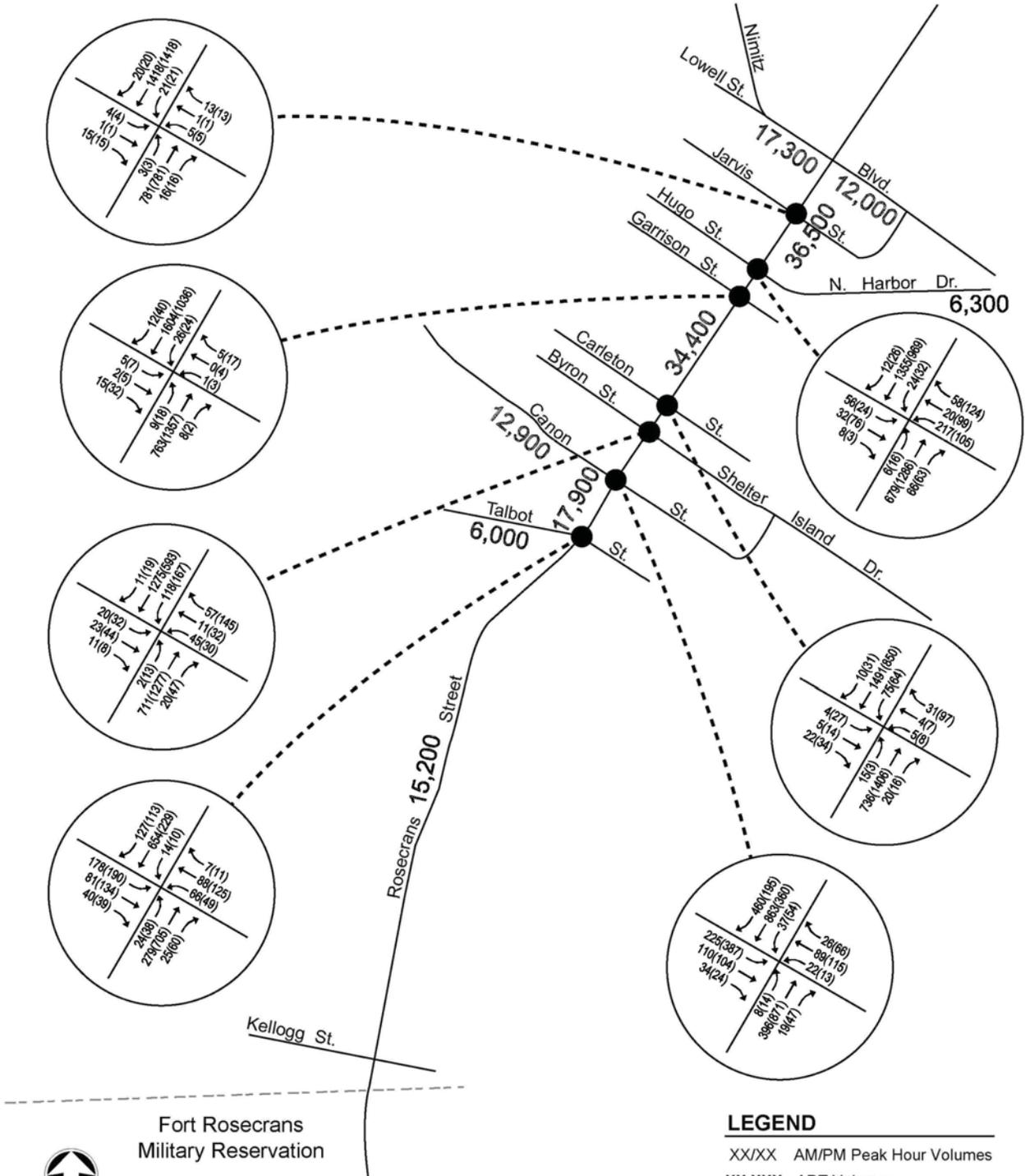




EXISTING TRAFFIC VOLUMES (AREA 2)

Exhibit 3-3

ROSECRANS CORRIDOR MOBILITY STUDY



Existing Conditions Assessment

Fort Rosecrans
Military Reservation

Not to Scale

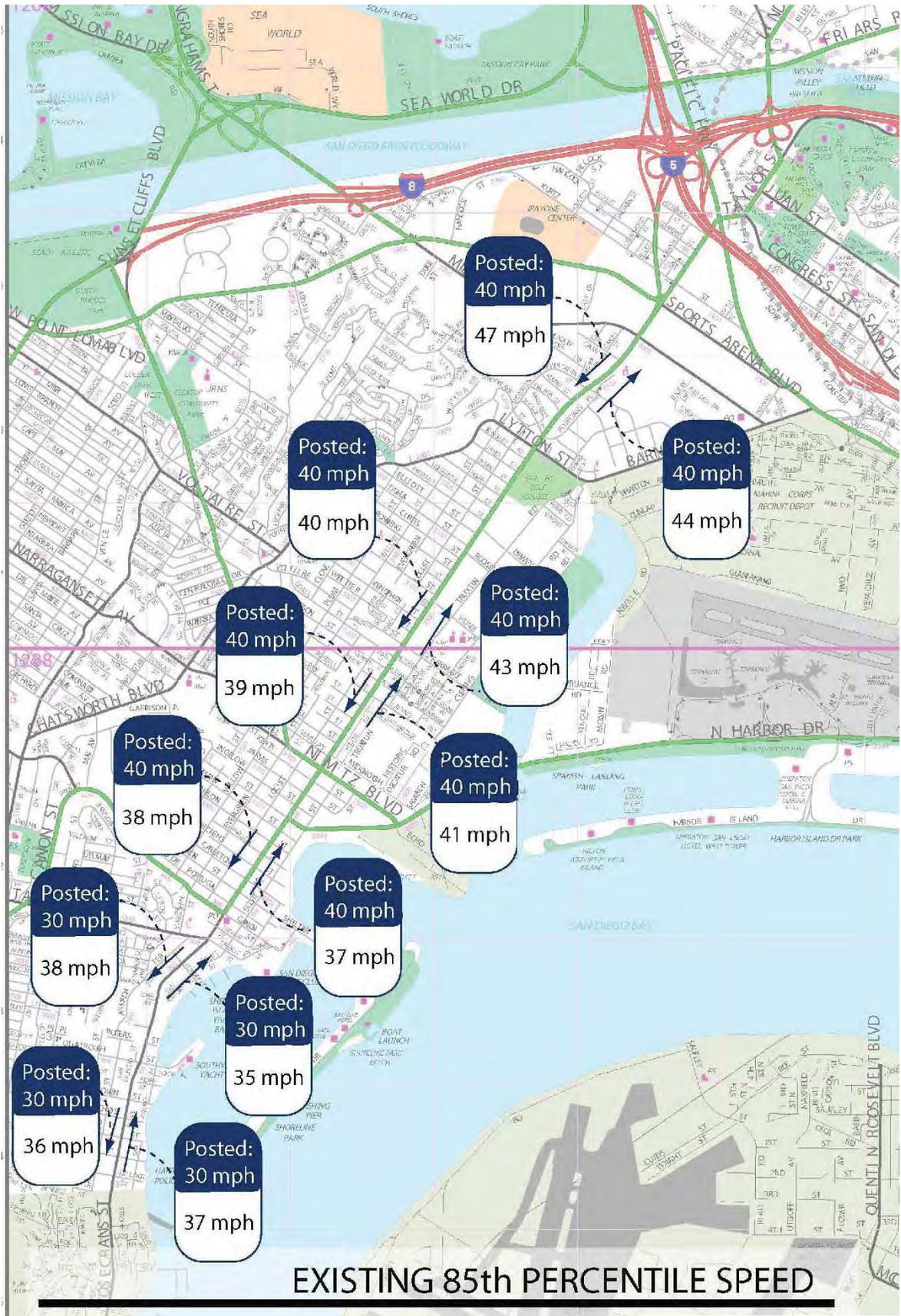


EXISTING TRAFFIC VOLUMES (AREA 3 & 4)

Exhibit 3-4



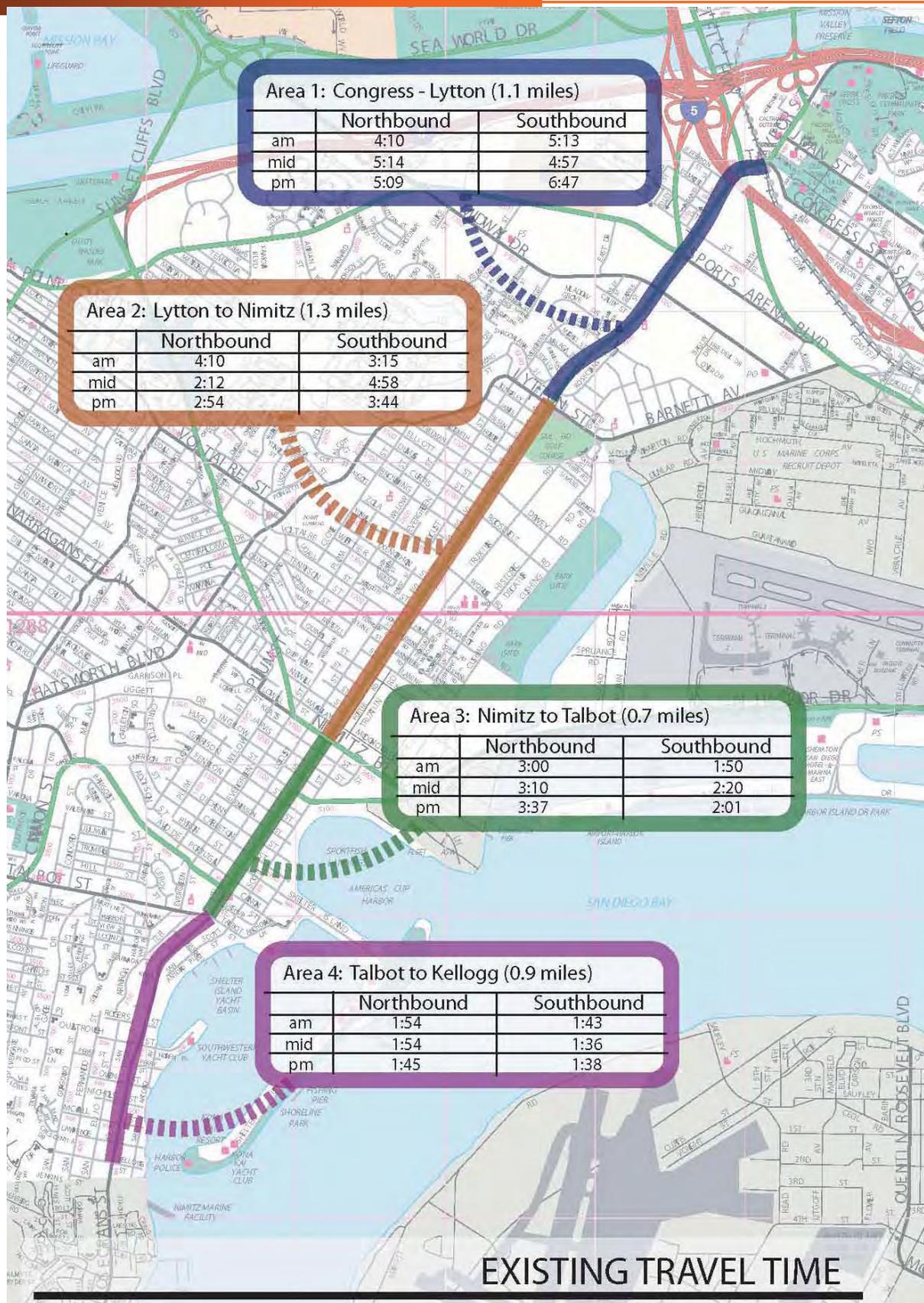
Existing Conditions Assessment



EXISTING 85th PERCENTILE SPEED

Exhibit 3-5

ROSECRANS CORRIDOR MOBILITY STUDY



Existing Conditions Assessment



3.2 TRAFFIC OPERATIONAL ANALYSIS

Intersection Level of Service Analysis

Level of service for both intersections and roadway segments were measured for the study corridor based upon the existing intersection geometry and roadway capacities. Level of service thresholds for intersections are based upon the 2000 Highway Capacity Manual operations methodology for both signalized and unsignalized intersections. For signalized intersections, the average intersection delay is reported. For unsignalized intersections, the level of service reported reflects the movement with the highest delay (worst level of service). The results of the intersection level of service analysis is presented in Table 3-1 and graphically illustrated in Exhibit 3-7. Level of service worksheets are provided in Appendix 3-D.

As shown in Table 3-1, most intersections are currently operating at LOS D or better along the study corridor. Critical intersections, which operate at LOS E or F include Rosecrans Street / Midway Drive, Rosecrans Street / Nimitz Boulevard, Rosecrans Street / Garrison Street (unsignalized), and Rosecrans Street / Carleton Street (unsignalized).

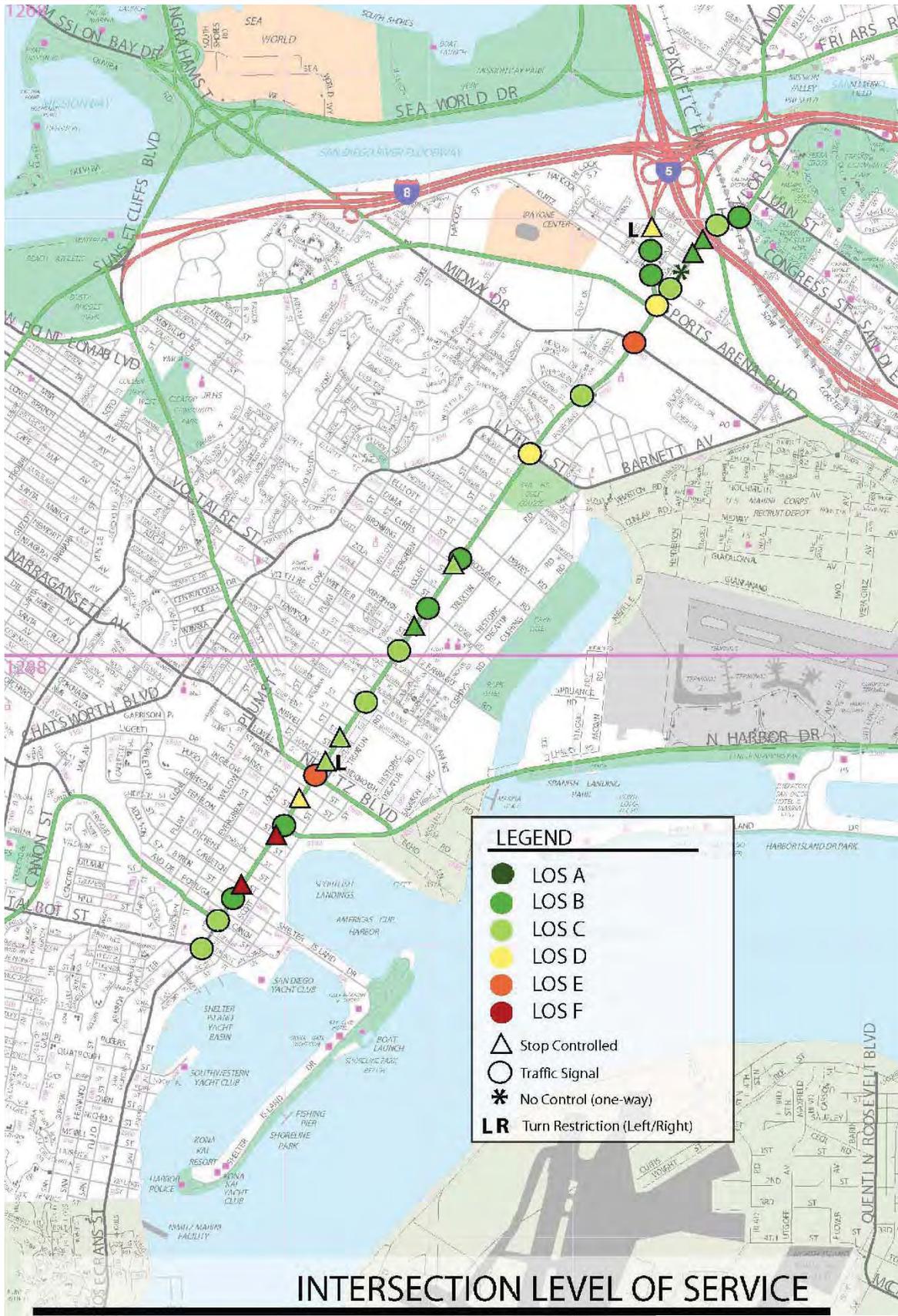
Roadway Segment Level of Service Analysis

Roadway segment operations were measured based on the classification of the roadway, as defined by field observations, technical assessment and the current Community Plan Circulation Elements for the study area. Rosecrans Street is classified as a Major arterial with a capacity of 40,000 vehicles per day for the four lane sections, 45,000 vehicles per day for the five lane sections, and 50,000 vehicles per day for the six lane sections. Existing roadway classifications used in the analysis of the roadway segments are illustrated in Exhibit 3-8. The results of the roadway segment operating conditions are summarized in Table 3-2 and illustrated in Exhibit 3-9.

Through Area 4 of the study area, Rosecrans Street is defined as a two-lane Major arterial. This classification occurred in the 1995 Community Plan Update (previously classified as a two-lane collector). It is clearly stated in the 1995 Peninsula Community Plan Circulation Element that "Rosecrans Street, from Talbot to the Point Loma Naval Complex should be maintained in its present two-lane configuration to avoid disrupting adjacent residential areas. In order to increase capacity, traffic engineering techniques such as restriping, channelization, signalization and parking restrictions should be reviewed and, as appropriate, implemented." The City of San Diego does not currently have a standard two-lane Major arterial classification by which the operating conditions of this segment could be evaluated. Therefore, the peak hour travel time runs and off-peak speed survey data was used to determine an appropriate capacity for this section of Rosecrans Street.

As discuss in the Data Collection section of this report, the average travel speed through Area 4 (Talbot Street to the Point Loma Naval Complex) was measured at 30 to 33 mph during the off-peak period. Based on the Highway Capacity Manual Urban Street methodology, this segment operates at LOS B. Travel time runs during the peak hour show that average travel speeds meet or exceed the 30 to 33 mph range. Therefore, the operations of the corridor reflect the estimated level of service analysis.

ROSECRANS CORRIDOR MOBILITY STUDY



Existing Conditions Assessment

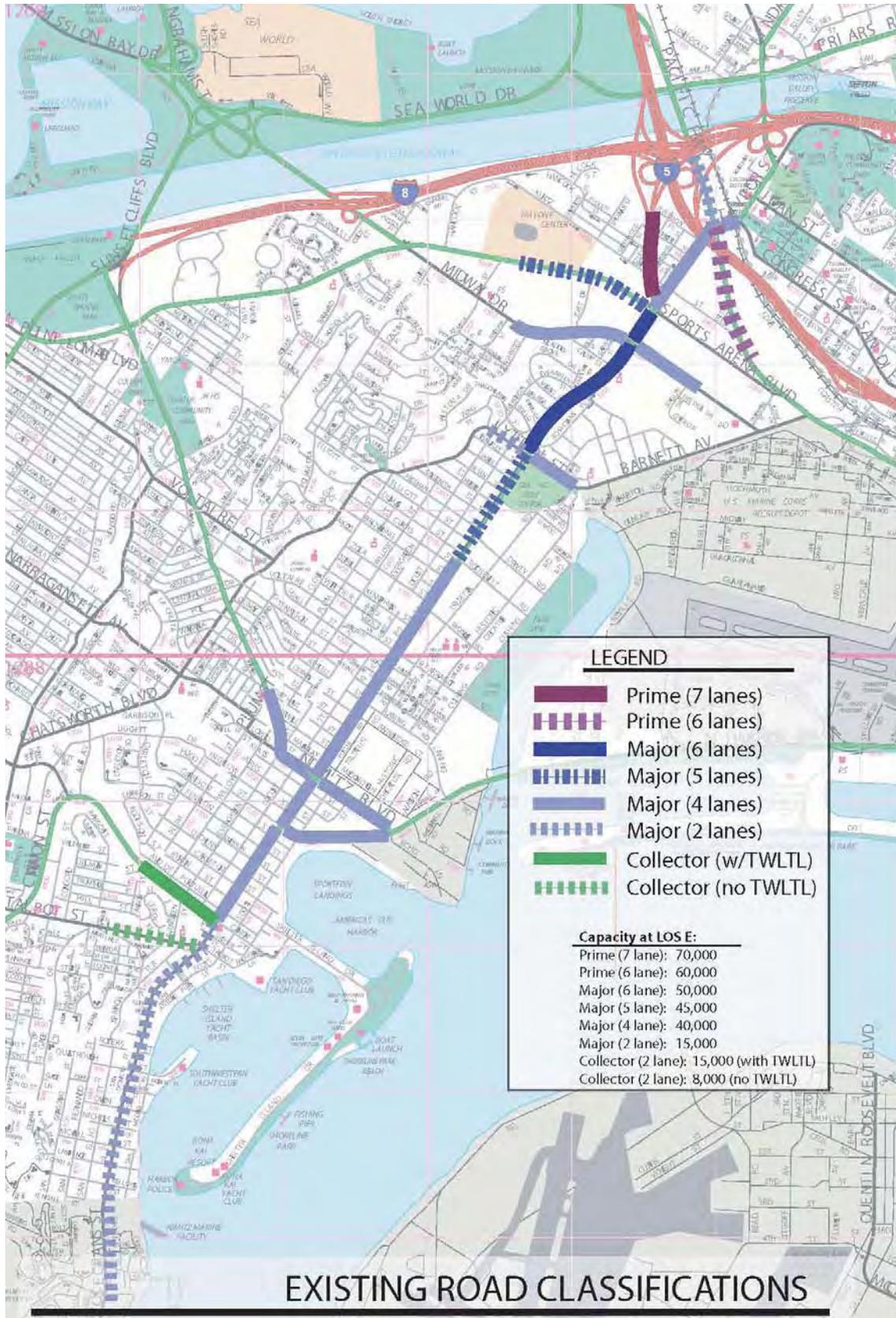


Exhibit 3-8



Table 3-1. Intersection Level of Service
Existing Conditions

Intersection LOS		Traffic Control ⁽¹⁾	AM Peak		PM Peak	
			Delay	LOS	Delay	LOS
1)	Taylor St. / Congress St.	S	10.0	B	10.7	B
2)	Rosecrans St. - Taylor St. / Pacific Highway	S	22.8	C	25.1	C
3)	Rosecrans St. / Jefferson St.	O	10.9	B	12.1	B
4)	Rosecrans St. / Moore St.	O	11.7	B	11.9	B
5)	Rosecrans St. / Hancock St.	⁽²⁾	8.6	A	9.4	A
6)	Rosecrans St. / Kurtz St.	S	15.3	B	25.4	C
7)	Rosecrans St. - Sports Arena Blvd. / Camino Del Rio W.	S	23.3	C	35.5	D
8)	Rosecrans St. / Midway Dr.	S	37.0	D	60.0	E
9)	Rosecrans St. / N. Evergreen St.	S	15.9	B	30.3	C
10)	Rosecrans St. / Lytton St.	S	47.9	D	51.7	D
11)	Rosecrans St. / Roosevelt Rd.	S	10.3	B	13.3	B
12)	Rosecrans St. / Curtiss St.	O	20.5	C	15.5	C
13)	Rosecrans St. / Womble Rd.	S	18.8	B	17.9	B
14)	Rosecrans St. / Xenophon St.	O	13.6	B	12.1	B
15)	Rosecrans St. / Farragut Rd. - Voltaire St.	S	20.7	C	18.1	B
16)	Rosecrans St. / Russell St. - Laning Rd.	S	17.0	B	23.2	C
17)	Rosecrans St. / Oliphant St.	O	22.6	C	14.1	B
18)	Rosecrans St. / Macaulay St.	O - LTR	12.0	B	13.0	B
19)	Rosecrans St. / Nimitz Blvd.	S	40.8	D	59.3	E
20)	Rosecrans St. / Jarvis St.	T	16.3	C	30.9	D
21)	Rosecrans St. / N. Harbor Dr. - Hugo St.	S	15.0	B	18.0	B
22)	Rosecrans St. / Garrison St.	T	79.6	F	133.6	F
23)	Rosecrans St. / Carleton St.	T	146.6	F	252.0	F
24)	Rosecrans St. / Shelter Island Dr. - Byron St.	S	13.3	B	16.7	B
25)	Rosecrans St. / Canon St.	S	23.0	C	20.1	C
26)	Rosecrans St. / Talbot St.	S	22.1	C	12.5	B
27)	Camino del Rio W. / Moore St.	T - LTR	31.5	D	30.6	D
28)	Camino del Rio W. / Hancock St.	S	10.9	B	13.2	B
29)	Camino del Rio W. / Kurtz St.	S	8.5	A	13.8	B

⁽¹⁾ S = Signalized, T = Two-Way Stop, O = One-Way Stop, LTR = Left Turn Restriction

⁽²⁾ No stop control since Hancock Street is one-way westbound, away from Rosecrans Street.



ROSECRANS CORRIDOR MOBILITY STUDY

Table 3-2. Roadway Segment Level of Service Existing Conditions

Roadway	Segment	Class	Lanes	LOS E Capacity	Existing		
					ADT	V/C	LOS
Rosecrans Street	From Pacific Highway to Sports Arena Blvd.	Major	4	40,000	15,503	0.39	B
	From Sports Arena Blvd. to Midway Dr.	Major	6	50,000	59,120	1.18	F
	From Midway Dr. to Lytton St.	Major	6	50,000	46,384	0.93	E
	From Lytton St. to Roosevelt Rd.	Major	5	45,000	42,513	0.94	E
	From Laning Rd. to Nimitz Blvd.	Major	4	40,000	34,259	0.86	D
	From Nimitz Blvd. to N. Harbor Dr.	Major	4	40,000	36,450	0.91	E
	From N. Harbor Dr. to Canon St.	Major	4	40,000	34,390	0.86	D
	From Canon St. to Talbot St.	Major (1)	2	27,000	17,850	0.66	C
	From Talbot St. to Kellogg St.	Major (1)	2	27,000	15,200	0.56	B
	North of Sports Arena Blvd.	Prime	7	70,000	50,700	0.72	C
Pacific Highway	North of Rosecrans St.	Major (2)	2	20,000	5,818	0.29	A
	South of Rosecrans St.	Prime	6	60,000	13,070	0.22	A
Sports Arena Blvd.	Northwest of Rosecrans St.	Major	5	45,000	26,780	0.60	C
	Northwest of Rosecrans St.	Major	4	40,000	27,130	0.68	C
Midway Drive	Southeast of Rosecrans St.	Major	4	40,000	29,440	0.74	C
	Northwest of Rosecrans St.	Major (2)	2	20,000	11,797	0.59	C
Lytton Street	Southeast of Rosecrans St.	Major	4	40,000	19,650	0.49	B
	Northwest of Rosecrans St.	Major	4	40,000	17,264	0.43	B
Nimitz Boulevard	Southeast of Rosecrans St.	Major	4	40,000	12,020	0.30	A
	Rosecrans St. to Scott Rd.	Major	4	40,000	6,321	0.16	A
Canon Street	Northwest of Rosecrans St.	Collector	2	15,000	12,870	0.86	D
Talbot Street	Northwest of Rosecrans St.	Collector	2	8,000	5,950	0.74	D

(1) LOS E Capacity has been estimated based on results of the Highway Capacity Manual Urban Street Methodology.

(2) Since a published standard capacity for a 2-Lane Major does not exist, capacity is assumed to be half of a 4-Lane Major.



Speed Survey Assessment

As shown previously in the Data Collection section of this report (Exhibit 3-5), the speeds along Rosecrans Street range from 34 to 37 mph. The speeds reported are 85th percentile speeds. The 85th percentile indicates the speed at which 85% of the vehicles surveyed traveled at or less than. This means that 15% of the vehicles surveyed traveled faster than the 85th percentile speed.

The California Vehicle Codes states that the posted speed limit shall be within 5 mph of the 85th percentile speed. According to the speeds surveyed, several segments have measured 85th percentile speeds that exceed this 5 mph threshold:

- Southbound Rosecrans: Midway to Lytton Street (47 mph in 40 mph zone)
- Northbound & Southbound Rosecrans: Talbot Street to Naval Complex (37 mph in 30 mph zone)

It should also be noted that through Area 3 (Nimitz Boulevard to Talbot Street), 85th percentile speeds were lower than the 40 mph speed limit posted through this section. It may be possible through this section to lower the speed limit to 35 mph to better match the existing conditions and provide for an improved walking environment.

Clearly, the traffic speeds in Area 4 will need to be addressed in the alternatives analysis. The high speeds are occurring along a portion of the corridor that lack sidewalks and have residential units fronting the street. Coordination with the Navy as well as potential traffic calming features should be considered to reduce the traffic speed through Area 4.

In Area 1, the traffic volumes report and the travel time runs conducted suggest that peak hour conditions have much lower speeds than those measured during the off-peak period. Traffic congestion and delay typically affect the speeds at which vehicles can travel through the majority of Area 1. With multiple driveways for commercial uses as well as pedestrian/bicycle activity in the area, increasing the speed through this section would encourage higher traffic speeds. Increasing the speed limit on the southbound approach is therefore not recommended.

Travel Time Assessment

Travel time runs were conducted to determine the stop time and travel time along the corridor. This information helps to validate the levels of service calculated for the roadway segments. It will also be used in developing a simulation model that can be used to further evaluate the alternatives in later stages of this project. The corridor is broken into four segments, which are relatively equal in length (ranging from 0.7 miles to 1.1 miles). The travel times however vary dramatically, as summarized in Exhibit 3-6 and summarized in Table 3-3.

ROSECRANS CORRIDOR MOBILITY STUDY

Table 3-3. Travel Time Survey Results
Existing Conditions

Area	Segment	Peak Period	Northbound			
			CTT	CAS	Cstops	CStopD
1	Congress Street to Lytton Street	AM	04:10	16.5	3	01:55
		MID	05:14	13.3	4	02:46
		PM	05:09	14.2	3.5	02:27
2	Lytton Street to Nimitz Boulevard	AM	04:10	19.3	2.3	01:47
		MID	02:12	36.4	0	00:00
		PM	02:54	29.1	0.8	00:45
3	Nimitz Boulevard to Talbot Street	AM	03:00	14.4	2.3	01:20
		MID	03:10	13.9	2	01:29
		PM	03:37	12.7	25	01:44
4	Talbot Street to Kellogg Street	AM	01:54	29.2	0.3	00:13
		MID	01:54	28.8	0.7	00:14
		PM	01:45	31	0.3	00:03

Area	Segment	Peak Period	Southbound			
			CTT	CAS	Cstops	CStopD
1	Congress Street to Lytton Street	AM	04:10	16.5	3	01:55
		MID	05:14	13.3	4	02:46
		PM	05:09	14.2	3.5	02:27
2	Lytton Street to Nimitz Boulevard	AM	04:10	19.3	2.3	01:47
		MID	02:12	36.4	0	00:00
		PM	02:54	29.1	0.8	00:45
3	Nimitz Boulevard to Talbot Street	AM	03:00	14.4	2.3	01:20
		MID	03:10	13.9	2	01:29
		PM	03:37	12.7	25	01:44
4	Talbot Street to Kellogg Street	AM	01:54	29.2	0.3	00:13
		MID	01:54	28.8	0.7	00:14
		PM	01:45	31	0.3	00:03

CTT = Cumulative Travel Time (Minutes:Seconds)
 CAS = Cumulative Actual Average Speed
 CStops = Cumulative Number of Stops in Run
 CStopD = Cumulative Stopped Delay (Seconds)



3.3 ACCIDENT ANALYSIS

Accident data was provided by City of San Diego for a period of ten (10) years. Raw accident data is provided in Appendix 3-E. Accident data was reported for both Rosecrans Street-Camino Del Rio and the intersecting streets. Table 3-4 summarizes the accidents by intersection over the ten year period for Rosecrans Street.

Table 3-4. Accident Data by Intersection

Intersection of Camino del Rio at...	Accidents at Intersection	Accidents on Approach/Depart	Accidents Occurring Midblock	TOTAL
Moore	24	12	10	46
Hancock	19	26	16	63
Kurtz	29	26	3	58

Intersection of Rosecrans at...	Accidents at Intersection	Accidents on Approach/Depart	Accidents Occurring Midblock	TOTAL
Midway	31	34	23	88
Nimitz	17	23	8	48
Lytton	15	23	4	42
Kurtz	24	9	7	40
N. Evergreen	9	18	10	37
Sports Arena	16	7	9	32
Pacific Highway	9	11	3	23
N. Harbor Drive	9	11	2	22
Keats	16	1	3	20
Cauby	3	0	10	13
Newell	6	1	6	13
Garrison	6	4	2	12
Talbot	4	5	3	12
Fenelon	4	1	6	11
Ingelow	6	4	1	11
Jefferson	4	1	6	11
Bessemer	3	0	7	10
Canon	7	1	2	10
Shelter Island	6	2	2	10
Kona	1	0	8	9
Poe	5	1	3	9
Quimby	4	2	3	9
Avenida De Portugal	2	3	3	8
Emerson	5	1	2	8
Macaulay	2	1	5	8

ROSECRANS CORRIDOR MOBILITY STUDY

Intersection of Rosecrans at...	Accidents at Intersection	Accidents on Approach/Depart	Accidents Occurring Midblock	TOTAL
Owen	3	1	4	8
Voltaire	3	2	3	8
Xenphon	4	1	3	8
Carleton	5	0	2	7
Hancock	3	3	1	7
Hugo	6	1	0	7
Roosevelt	4	3	0	7
Russell	1	3	3	7
Zola	2	3	2	7
Camino del Rio West	3	1	2	6
Ibsen	0	2	4	6
Jarvis	3	1	1	5
Moore	3	1	1	5
Oliphant	1	1	3	5
Qualtrough	0	0	5	5
Rosecrans Pl	2	0	3	5
Udall	1	1	3	5
Dickens	0	2	2	4
Dumas	0	0	4	4
Freeman	1	0	3	4
Goldsmith	2	1	1	4
McCall	1	1	2	4
Armada	0	0	3	3
Browning	1	0	2	3
Byron	1	2	0	3
Homer	2	1	0	3
Kingsley	0	1	2	3
Malaga	0	0	3	3
Nichols	1	1	1	3
Seville	0	1	2	3
Taylor	3	0	0	3
Yonge	3	0	0	3
Lawrence	1	1	0	2
Madrid	0	0	2	2
Sterne	1	1	0	2
Tennyson	0	1	1	2
Upshur	2	0	0	2
Womble	1	0	1	2
Alcott	0	1	0	1
Curtis	0	1	0	1
Dewey	1	0	0	1

Existing Conditions Assessment



Intersection of Rosecrans at...	Accidents at Intersection	Accidents on Approach/Depart	Accidents Occurring Midblock	TOTAL
Elliott	0	0	1	1
James	0	0	1	1
Kellogg	1	0	0	1

As shown in the table, the highest number of accidents occurred at the intersection of Rosecrans Street & Midway Street with over 88 reported accidents over a 10 year period. It should be noted that the accidents reported in Table 3-4 are for those accidents reported to the police department. Accidents with little damage or accidents that go unreported are not documented and cannot be reflected in these totals.

Table 3-5 summarizes the accidents along the corridor by type of accident. Based on the data provided by the City, the majority of the accidents along the corridor were rear-end accidents, which represent over 270 related accidents reported along the corridor. The second highest type of accident is right angle accident with 205 reported accidents. Area 1 clearly has the highest total number of accidents with 288 accidents reported over the 10 year period.

Table 3-5. Accident Data by Type of Accident

Accident Type	Area 1	Area 2	Area 3	Area 4	Total
Rear End Accident	106	77	64	23	270
Right Angle Accident	75	49	63	18	205
Side Swipe – Same Direction	41	11	14	11	77
Side Swipe – Opposing Direction	1	0	2	0	3
Pedestrian Involved	27	7	10	1	45
Hit Parked Vehicle	10	8	1	9	28
Hit Object	1	1	2	0	4
Hit Fixed Object – In Roadway	8	6	3	5	22
Hit Fixed Object - Ran Off the Road	3	6	4	7	20
Backed Into Fixed Object (Rear End)	8	0	0	0	8
Ran Off Road	1	1	2	2	6
Overtaken Vehicle	4	0	3	1	8
Head On-Accident	3	2	1	1	7
Non-Collision Accident	0	0	1	0	1
TOTAL	288	168	170	78	704

In addition to the total number of accidents and types of accidents along the corridor, the City of San Diego provided information regarding accident rates for key segments along Rosecrans Street. It is difficult to compare the accident data between segments when segment lengths and volumes. Therefore, accident

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rates are used to normalize accident data for a corridor by calculating the average number of accidents per million vehicle miles traveled (MVM) per year.

Table 3-6 summarizes the results of the accident rates calculated by the City. As shown in Table 3-6, the accident rates along the corridor have gone down significantly in Area 1 (Rosecrans: Pacific Highway to Sports Arena Boulevard). In 2004 the accident rate on this segment was 5.22 accidents/mvm per year. By 2008, the rate had dropped 1.74. For most other segments evaluated, the annual changes in accident rates fluctuate within a few tenths indicating that there have not been significant change along the corridor that sparked significant changes in accident activity.

In 2006, the Liberty Station began development and continued to increase in activity through 2008. Although this has resulted in changes in traffic patterns over the four year period, the accident rates, particularly in Area 2, have not changed significantly. Through Area 2, the accident rates have ranged from 0.35 accidents/mvm per year to 0.901 accidents/mvm per year. Looking specifically at the segment information for the corridor, 2008 showed the highest accident rate at 0.701. This is an increase over the pre-Liberty Station rate of 0.550 in 2004 and 0.20 in 2005.

Table 3-6
Summary of Accident Rates for Rosecrans Corridor

Camino Del Rio W : I-5 SB off to Sports Arena Blvd (Area 1)					
	2004	2005	2006	2007	2008
Intersections & Segments	2.28	1.48	2.42	2.28	1.74
Segments	1.21	1.075	0.672	1.478	0.537
Rosecrans: Pacific Hwy – Sports Arena Blvd (Area 1)					
	2004	2005	2006	2007	2008
Intersections & Segments	5.22	1.74	2.08	3.82	1.74
Segments	2.08	1.39	1.74	1.39	0
Rosecrans: Sports Arena Blvd to Lytton St (Area 1)					
	2004	2005	2006	2007	2008
Intersections & Segments	1.214	0.857	0.857	1.00	1.50
Segments	0.857	0.714	0.50	0.714	0.642
Rosecrans: Lytton St to Nimitz Blvd (Area 2)					
	2004	2005	2006	2007	2008
Intersections & Segments	0.951	0.350	0.751	0.650	0.901
Segments	0.550	0.20	0.50	0.45	0.701
Rosecrans: Nimitz Blvd to Kellogg St (Area 2)					
	2004	2005	2006	2007	2008
Intersections & Segments	1.13	1.13	0.518	0.707	1.037
Segments	0.471	0.613	0.235	0.33	0.613

Source: City of San Diego, August 2009 (Traffic Engineering Division)



3.4 PARKING INVENTORY

A field inventory of all available parking was conducted and logged into a GIS database. Parking spaces were coded as either free parking or metered spaces. In addition, spaces were coded if they were time restricted. Exhibit 3-10 illustrates the parking inventory for the corridor by Area. Table 3-7 summarizes the total number of on-street parking spaces available along the study corridor by type.

Table 3-7
Summary of Available Parking Along Rosecrans Street

Parking Type	Area 1	Area 2	Area 3	Area 4	Total
Free (unrestricted) Spaces	71	0	4	289	364
Free (time restricted) Spaces	0	0	0	15	15
Metered (unrestricted) Spaces	0	0	0	0	0
Metered (time restricted) Spaces	0	0	0	0	0
TOTAL	71	0	4	304	379

Note: Parking summarized in this table does not include inventory of parking along side streets. Complete parking inventory diagrams are provided in Exhibit 3-10, which illustrates the side street parking.

In Area 1, speeds and traffic are the highest when compared to the speeds and volumes along the corridor. The majority of Rosecrans is five to six lanes with turn lanes. Between Sports Arena and Lytton Street, on-street parking is provided on both sides of Rosecrans Street. A total of 71 free, unrestricted parking spaces are provided to serve the commercial uses located within this portion of the study area.

In Area 2, no on-street parking spaces were identified between Lytton Street and Nimitz Street. When Rosecrans Street was realigned with the Liberty Station project, all on-street parking on the west side of the street was removed to allow for a center turn lane and intermittent raised medians as well as bicycle lanes on both sides of the street. From Hornet Way to Lytton Street, Rosecrans Street is five lanes with three northbound lanes and two southbound lanes. Free, unrestricted parking is provided on both sides of the streets intersecting Rosecrans. Parking is time restricted on Alcott Street, west of Rosecrans Street, as well as on Browning Street, Curtis Street, Dumas Street and Elliot Street west of Evergreen Street.

In Area 3, Rosecrans Street is striped as a four-lane arterial with a continuous left turn pocket. As a result, there is limited on-street parking despite the presence of retail uses along Rosecrans Street. A total of four (4) parking spaces are provided on-street (between Shelter Island and Carleton Street). Most parking for the commercial uses fronting Rosecrans is provided in off-street private parking lots. On-street parking is provided on all streets intersecting Rosecrans. Along Upshur Street, Canon Street, and Avenida de Portugal parking is free, but time restricted. Whereas most parking along the side streets and along Rosecrans Street is parallel to the curb, parking along both Canon Street and Upshur Street is diagonal head-in parking on the north side of the street.

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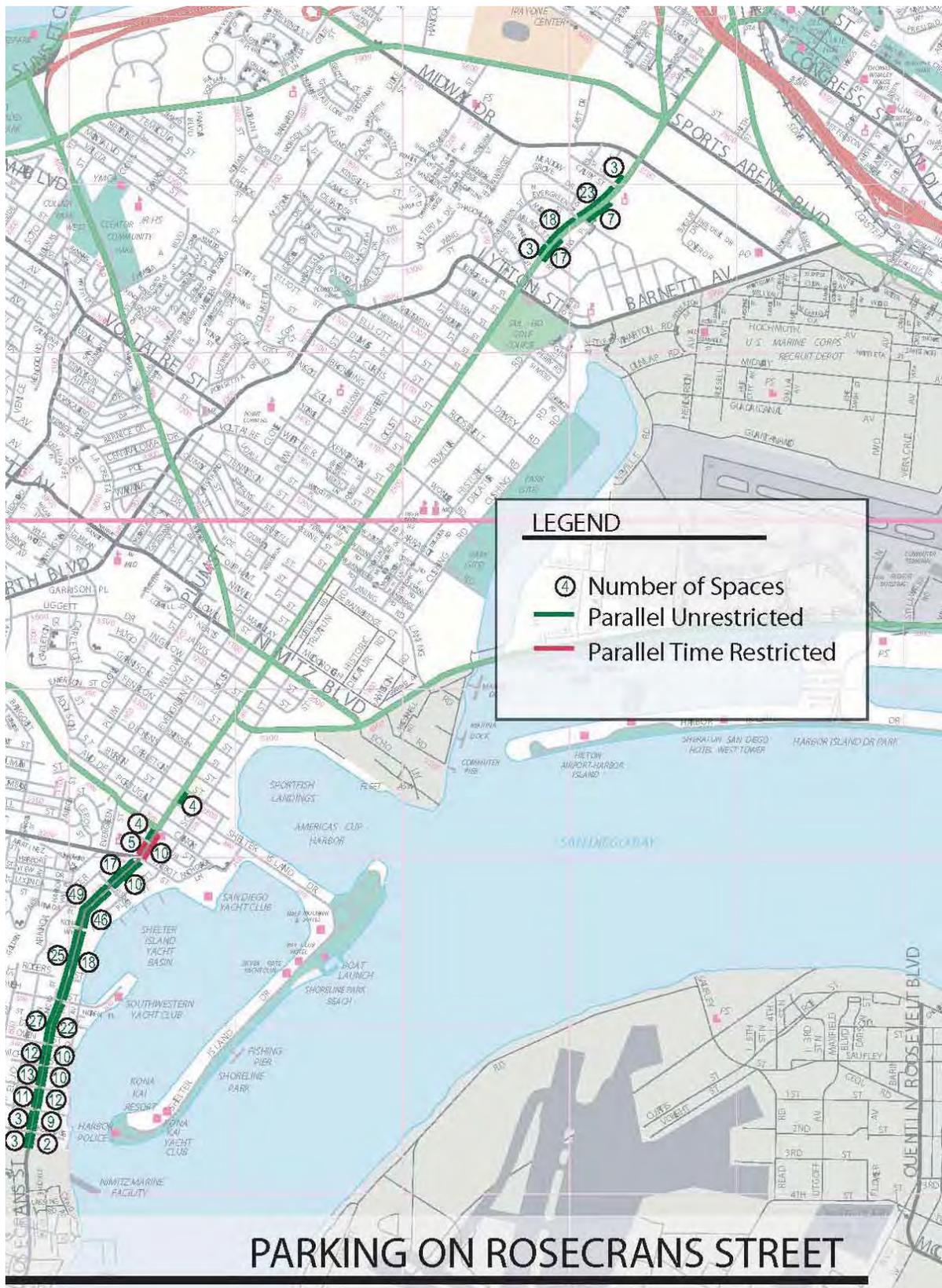


Exhibit 3-10

Existing Conditions Assessment



In Area 4, most parking spaces are located immediate in front of residential and commercial uses between signalized and unsignalized intersections. The majority of the parking spaces are unrestricted free parking spaces. Near the intersection of Canon Street, 15 time restricted parking spaces are provided.

3.5 PEDESTRIAN ASSESSMENT

A detailed pedestrian study was prepared by ALTA Planning & Design in July 2009. The study focuses on evaluating the existing pedestrian activity along the corridor, conditions of sidewalks, locations of curb ramps and condition of pedestrian facilities along the corridor. In addition, the City of San Diego Pedestrian Model was used to determine the areas along the corridor with the highest potential for pedestrian activity and the areas of focus for future pedestrian improvements. The complete study prepared by ALTA Planning & Design is provided in Appendix 3-F of this report.

Existing Pedestrian Activity

Pedestrian counts were collected at 29 intersections during two-hour AM and PM peak periods on April 22, April 23, April 28 and April 29, 2009 in order to gauge relative activity levels along the corridor. Tables 3-8 and 3-9 summarize the aggregated pedestrian count data by intersection leg. As shown, the highest morning and evening counts, 245 and 235 respectively, were recorded at the intersection of Rosecrans Street-Taylor Street and Pacific Highway. During both peak periods most of the demand is crossing Taylor Street on the north leg of the intersection.

The second highest morning peak period counts were recorded at Taylor Street / Congress Street which, like Rosecrans Street-Taylor Street and Pacific Highway activity, is a function of Old Town Transit Center demand. The third highest morning peak period counts were collected at Rosecrans Street / Sports Arena Boulevard-Camino del Rio, a major retail center for the Sports Arena area.

High pedestrian morning activity levels were also recorded at the intersection of Rosecrans Street and Womble Road due to High Tech Middle and High School students crossing Rosecrans Street eastbound after alighting the southbound Route 28 bus stop.

The evening peak period counts are comparable to the morning peak period counts, with the strongest demand found at intersections surrounding the Old Town Transit Center, and secondarily, the major Sports Arena intersections of Rosecrans Street / Sports Arena Boulevard-Camino del Rio and Rosecrans Street/Midway Drive. Pedestrian counts at Rosecrans Street / Womble Drive were significantly lower during the evening peak because the evening peak period does not overlap with the High Tech Middle and High School release period.

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Table 3-8.
Existing A.M. Peak Period Pedestrian Volumes

Intersection	West Leg	North Leg	East Leg	South Leg	Total
Taylor Street / Congress Street	61	82 (Taylor St.)	29 (Congress St.)	15 (Taylor St.)	187
Rosecrans Street-Taylor Street / Pacific Highway	34 (PCH)	129 (Taylor St.)	21 (PCH)	61 (Rosecrans St.)	245
Rosecrans Street / Jefferson Street	69 (Jefferson St.)	1 (Rosecrans St.)	0 (Jefferson St.)	0 (Rosecrans St.)	70
Rosecrans Street / Moore Street	37 (Moore St.)	4 (Rosecrans St.)	0 (Moore St.)	4 (Rosecrans St.)	45
Rosecrans Street / Hancock Street	30 (Hancock St.)	0 (Rosecrans St.)	0 (Hancock St.)	0 (Rosecrans St.)	30
Rosecrans Street / Kurtz Street	47 (Kurtz St.)	4 (Rosecrans St.)	21 (Kurtz St.)	2 (Rosecrans St.)	74
Rosecrans Street / Sports Arena Boulevard- Camino del Rio*	9 (Sports Arena Blvd.)	9 (Rosecrans St.)	45 (Sports Arena Blvd.)	18 (Rosecrans St.)	100
Rosecrans Street / Midway Drive	18 (Midway Dr.)	14 (Rosecrans St.)	27 (Midway Dr.)	25 (Rosecrans St.)	84
Rosecrans Street / N. Evergreen Street	8 (Evergreen St.)	6 (Rosecrans St.)	5 (Evergreen St.)	0 (Rosecrans St.)	19
Rosecrans Street / Lytton Street	8 (Lytton St.)	0 (Rosecrans St.)	0 (Lytton St.)	3 (Rosecrans St.)	11
Rosecrans Street / Roosevelt Road	0	15 (Rosecrans St.)	11 (Roosevelt Rd.)	2 (Rosecrans St.)	28
Rosecrans Street / Curtis Street	9 (Curtis St.)	0 (Rosecrans St.)	0	0 (Rosecrans St.)	9
Rosecrans Street / Womble Road		82 (Rosecrans St.)	12 (Womble Rd.)	0 (Rosecrans St.)	94
Rosecrans Street / Xenophon Street	17 (Xenophon St.)	0 (Rosecrans St.)		0 (Rosecrans St.)	17
Rosecrans Street / Farragut Road-Voltaire Street	4 (Voltaire St.)	5 (Rosecrans St.)	17 (Farragut Rd.)	12 (Rosecrans St.)	38
Rosecrans Street / Russell Street-Laning Road	0 (Russell St.)	0 (Rosecrans St.)	1 (Laning Rd.)	1 (Rosecrans St.)	2
Rosecrans Street / Oliphant Street	8 (Oliphant St.)	0 (Rosecrans St.)	8	0 (Rosecrans St.)	16
Rosecrans Street / Macaulay Street	18 (Macaulay St.)	1 (Rosecrans St.)	5 (Driveway)	3 (Rosecrans St.)	27
Rosecrans Street / Nimitz Boulevard	23 (Nimitz Blvd.)	14 (Rosecrans St.)	24 (Nimitz Blvd.)	19 (Rosecrans St.)	80
Rosecrans Street / Jarvis Street	23	8	9	11	51

Existing Conditions Assessment



Table 3-8.
Existing A.M. Peak Period Pedestrian Volumes

Intersection	West Leg	North Leg	East Leg	South Leg	Total
	(Jarvis St.)	(Rosecrans St.)	(Jarvis St.)	(Rosecrans St.)	
Rosecrans Street / N. Harbor Drive-Hugo Street	14 (Hugo St.)	13 (Rosecrans St.)	16 (Harbor Dr.)	13 (Rosecrans St.)	56
Rosecrans Street / Garrison Street	11 (Garrison St.)	0 (Rosecrans St.)	0 (Garrison St.)	0 (Rosecrans St.)	11
Rosecrans Street / Carleton Street	25 (Carleton St.)	16 (Rosecrans St.)	11 (Carleton St.)	13 (Rosecrans St.)	65
Rosecrans Street / Shelter Island Drive-Byron Street	10 (Byron St.)	11 (Rosecrans St.)	14 (Shelter Island Dr.)	13 (Rosecrans St.)	48
Rosecrans Street / Canon Street	15 (Canon St.)	23 (Rosecrans St.)	24 (Canon St.)	10 (Rosecrans St.)	72
Rosecrans Street / Talbot Street	10 (Talbot St.)	14 (Rosecrans St.)	5 (Talbot St.)	13 (Rosecrans St.)	42
Camino del Rio W. / Moore Street	1 (Moore St.)	0 (Camino del Rio)	0 (Moore St.)	3 (Camino del Rio)	4
Camino del Rio W. / Hancock Street	0 (Hancock St.)	0 (Rosecrans St.)	0 (Hancock St.)	0 (Rosecrans St.)	0
Camino del Rio W. / Kurtz Street	0 (Kurtz St.)	0 (Rosecrans St.)	0 (Kurtz St.)	0 (Rosecrans St.)	0
TOTAL	509	451	305	241	1,525

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Table 3-9.
Existing P.M. Peak Period Pedestrian Volumes

Intersection	West Leg	North Leg	East Leg	South Leg	Total
Rosecrans Street-Taylor Street / Pacific Highway	23 (PCH)	170 (Taylor St.)	15 (PCH)	27 (Rosecrans St.)	235
Rosecrans Street / Jefferson Street	86 (Jefferson St.)	0 (Rosecrans St.)	0 (Jefferson St.)	2 (Rosecrans St.)	88
Rosecrans Street / Moore Street	57 (Moore St.)	7 (Rosecrans St.)	2 (Moore St.)	0 (Rosecrans St.)	66
Rosecrans Street / Hancock Street	66 (Hancock St.)	0 (Rosecrans St.)	145 (Hancock St.)	0 (Rosecrans St.)	211
Rosecrans Street / Kurtz Street	51 (Kurtz St.)	17 (Rosecrans St.)	43 (Kurtz St.)	3 (Rosecrans St.)	114
Rosecrans Street / Sports Arena Boulevard-Camino del Rio*	31 (Sports Arena Blvd.)	10 (Rosecrans St.)	29 (Sports Arena Blvd.)	63 (Rosecrans St.)	156
Rosecrans Street / Midway Drive	48 (Midway Dr.)	40 (Rosecrans St.)	65 (Midway Dr.)	42 (Rosecrans St.)	195
Rosecrans Street / N. Evergreen Street	11 (Evergreen St.)	11 (Rosecrans St.)	8 (Evergreen St.)	1 (Rosecrans St.)	31
Rosecrans Street / Lytton Street	6 (Lytton St.)	6 (Rosecrans St.)	1 (Lytton St.)	0 (Rosecrans St.)	13
Rosecrans Street / Roosevelt Road	0	7 (Rosecrans St.)	4 (Roosevelt Rd.)	0 (Rosecrans St.)	11
Rosecrans Street / Curtis Street	5 (Curtis St.)	0 (Rosecrans St.)		0 (Rosecrans St.)	5
Rosecrans Street / Womble Road		32 (Rosecrans St.)	7 (Womble Rd.)	0 (Rosecrans St.)	39
Rosecrans Street / Xenophon Street	6 (Xenophon St.)	0 (Rosecrans St.)		0 (Rosecrans St.)	6
Rosecrans Street / Farragut Road-Voltaire Street	1 (Voltaire St.)	5 (Rosecrans St.)	13 (Farragut Rd.)	20 (Rosecrans St.)	39
Rosecrans Street / Russell Street-Laning Road	0 (Russell St.)	0 (Rosecrans St.)	3 (Laning Rd.)	0 (Rosecrans St.)	3
Rosecrans Street / Oliphant Street	34 (Oliphant St.)	0 (Rosecrans St.)	47	0 (Rosecrans St.)	81
Rosecrans Street / Macaulay Street	8 (Macaulay St.)	0 (Rosecrans St.)	12 (Driveway)	1 (Rosecrans St.)	21
Rosecrans Street / Nimitz Boulevard	26 (Nimitz Blvd.)	25 (Rosecrans St.)	26 (Nimitz Blvd.)	41 (Rosecrans St.)	118
Rosecrans Street / Jarvis Street	19 (Jarvis St.)	2 (Rosecrans St.)	20 (Jarvis St.)	5 (Rosecrans St.)	46
Rosecrans Street / N. Harbor Drive-Hugo	4	5	3	6	18



Table 3-9.
Existing P.M. Peak Period Pedestrian Volumes

Intersection	West Leg	North Leg	East Leg	South Leg	Total
Street	(Hugo St.)	(Rosecrans St.)	(Harbor Dr.)	(Rosecrans St.)	
Rosecrans Street / Garrison Street	34 (Garrison St.)	0 (Rosecrans St.)	47 (Garrison St.)	0 (Rosecrans St.)	81
Rosecrans Street / Carleton Street	15 (Carleton St.)	22 (Rosecrans St.)	10 (Carleton St.)	11 (Rosecrans St.)	58
Rosecrans Street / Shelter Island Drive- Byron Street	9 (Byron St.)	8 (Rosecrans St.)	15 (Shelter Island Dr.)	19 (Rosecrans St.)	51
Rosecrans Street / Canon Street	11 (Canon St.)	25 (Rosecrans St.)	28 (Canon St.)	11 (Rosecrans St.)	75
Rosecrans Street / Talbot Street	9 (Talbot St.)	20 (Rosecrans St.)	13 (Talbot St.)	19 (Rosecrans St.)	61
Camino del Rio W. / Moore Street	0 (Moore St.)	0 (Camino del Rio)	1 (Moore St.)	0 (Camino del Rio)	1
Camino del Rio W. / Hancock Street	15 (Hancock St.)	20 (Rosecrans St.)	2 (Hancock St.)	1 (Rosecrans St.)	38
Camino del Rio W. / Kurtz Street	15 (Kurtz St.)	20 (Rosecrans St.)	2 (Kurtz St.)	1 (Rosecrans St.)	38
TOTAL	636	478	642	326	2,105

Existing Pedestrian Facilities

The most basic elements of the pedestrian network are sidewalks, crosswalks, and curb ramps. Sidewalks provide a space for pedestrian activity separated from motor vehicle traffic. Crosswalks delineate a space for pedestrians to traverse the roadway. Curb ramps provide a transition between the raised sidewalk and the crosswalk for persons using mobility assistance devices. These elements should form a connected network that is safe, accessible to all people and encourages people to walk. Corridor sidewalks, crosswalks and curb ramps were inventoried to document existing facilities and identify deficiencies that impede pedestrian safety and accessibility.

Crosswalks

All Corridor intersections were inventoried for the presence and types of crosswalks. Exhibit 3-11 displays the distribution of crosswalks along the Corridor, along with missing infrastructure and sidewalk obstructions. Table 3-10 summarizes the quantity and types of crosswalks found along the Corridor by study area. As shown, there are a total of 57 crosswalks in the Corridor, the majority of which are standard white traverse crosswalks. Two intersections in Area 2 have standard yellow traverse crosswalks. The only ladder crosswalks in the Corridor are located along three legs of the Rosecrans Street / North Evergreen Street intersection. These ladder crosswalks facilitate pedestrian travel between Dewey Elementary School on the east side of Rosecrans Street, a church on the west side of Rosecrans Street, and the surrounding mix of commercial and residential land uses.

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Missing Sidewalk

Exhibit 3-11 also displays locations of missing sidewalks along the study Corridor. As shown, there is a significant concentration of missing sidewalk in Area 4 near the residential area beginning south of Bessemer Street and continuing to the southern terminus of the Corridor at Kellogg Street. Lack of continuous, passable sidewalks forces pedestrians to travel outside of the public right-of-way on private property or in the travel way presenting a safety issue for pedestrians, particularly people with disabilities. Americans with Disabilities Act (ADA) of 1990 standards require cities to provide continuous, maintained sidewalks to accommodate persons with disabilities. Table 3-11 summarizes the approximate length of missing sidewalk by study area.

Missing Curb Ramps

ADA regulation also requires that cities install curb ramps so that the transition between sidewalks and crosswalks is navigable for people with disabilities. The City of San Diego administers a program to install missing curb ramps and retrofit non-compliant curb ramps. This program is primarily driven by public complaint. An inventory of the Corridor curb ramps revealed that there are a total of 34 missing curb ramps at 21 intersections. Again, a significant majority of these missing curb ramps are located in the largely residential Area 4. Exhibit 3-11 displays missing curb ramps along the Rosecrans Corridor. Table 3-12 reports the number of missing curb ramps by study area.

Sidewalk Obstructions

Like missing sidewalk and missing curb ramps, objects that obstruct the sidewalk are a hazard because they can force pedestrians to walk in the travel way in order to pass the barrier. For pedestrians who use wheelchairs, a sidewalk obstruction can make an entire sidewalk segment inaccessible. Obstructions were identified via field review, with the reviewer measuring the width of sidewalks in all suspect cases to confirm the availability of 36 inches of passage along the sidewalk. In total, twenty-three obstructions were found. Table 3-13 displays the results of the obstruction inventory by study area. As shown, the majority of sidewalk obstructions are found in Area 3 and Area 4.

The types of sidewalk obstructions found along the corridor include:

- Street warning and street name signage;
- Utility boxes and street light poles;
- Sidewalk amenities, such as benches, tree planters, trash cans, newspaper dispensers and;
- Sidewalk that is so uplifted it is impassable for persons using assistive devices.

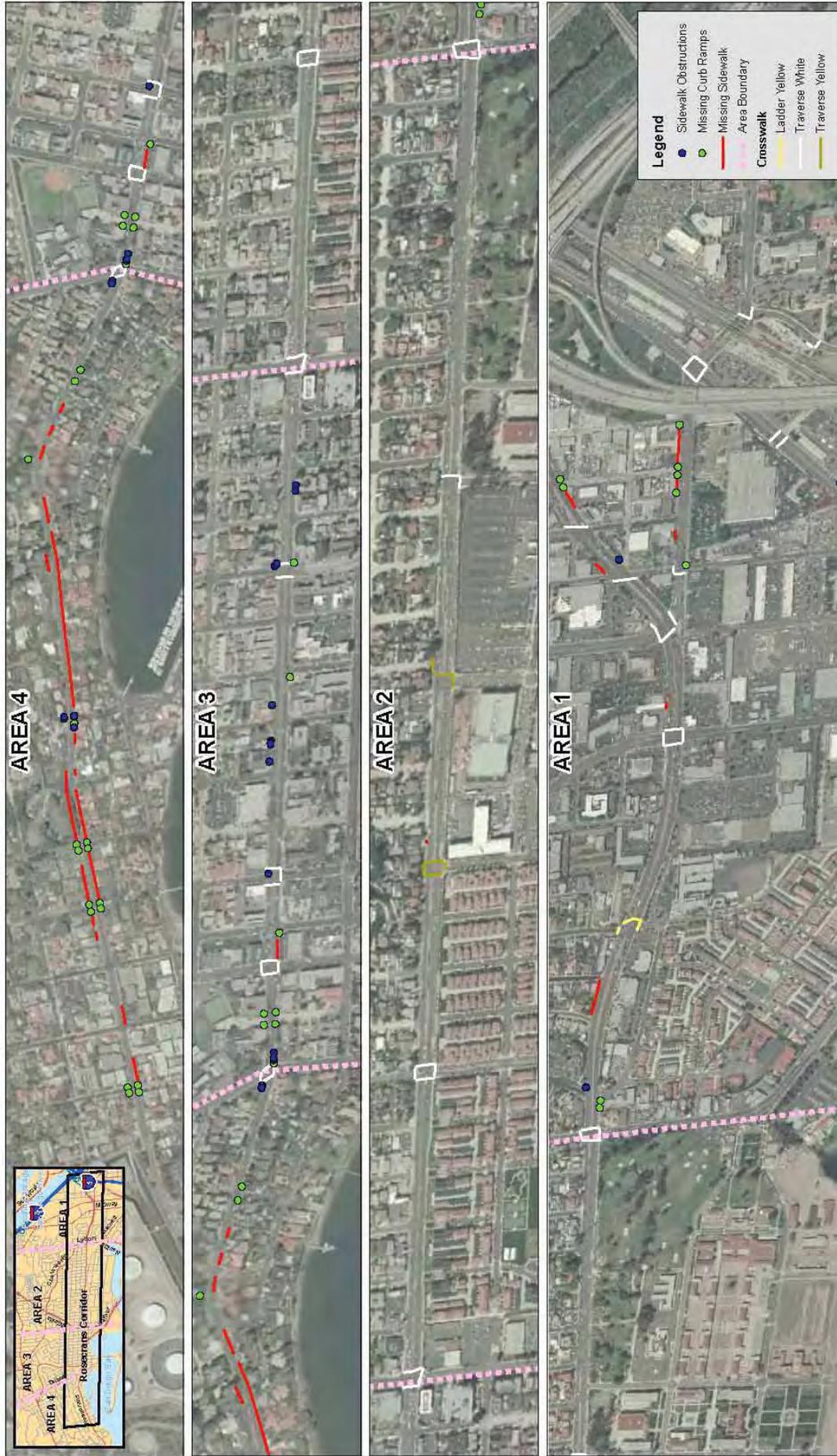


Exhibit 3-11 – Inventory of Existing Sidewalk, Curb Ramp and Sidewalk Obstructions

Source: ALTA Planning & Design, Pedestrian & Bicycle Study (Appendix F)



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Table 3-10.
Existing Crosswalks

Study Area	Traverse Crosswalks	Ladder Crosswalks	Total
Area 1	25	3	28
Area 2	16	0	16
Area 3	13	0	13
Area 4	0	0	0
TOTAL	54	3	57

Source: Alta Planning + Design (June 30, 2009)

Table 3-11.
Missing Sidewalks

Study Area	Feet of Missing Sidewalk	Percent of Total
Area 1	961.6	23.4%
Area 2	9.1	0.2%
Area 3	103.0	2.5%
Area 4	3,035.3	73.9%
TOTAL	4,109.0	100%

Source: Alta Planning + Design (June 30, 2009)

Table 3-12.
Missing Curb Ramps

Area	Total Missing Curb Ramps	Percent of Total
Area 1	9	26.5%
Area 2	0	0%
Area 3	8	23.5%
Area 4	17	50%
TOTAL	34	100%

Source: Alta Planning + Design (June 30, 2009)

Table 3-13.
Sidewalks Obstructions by Area

Area	Total Obstructions	Percent of Total
Area 1	3	13.0%
Area 2	0	0.0%
Area 3	10	43.5%
Area 4	10	43.5%
TOTAL	23	100%



Pedestrian Accidents

High speeds and traffic volumes are generally indicators of low levels of pedestrian safety, while high pedestrian crash rates are strong indicators of unsafe conditions. Table 3-14 summarizes the number of pedestrian crashes along the Corridor between 2002 and 2007. As shown, a total of 50 pedestrian crashes were reported. Several intersections had five or more crashes over the five year period, including:

- Rosecrans Street-Taylor Street / Pacific Highway
- Rosecrans Street / Kurtz Street
- Rosecrans Street / Sports Arena Boulevard-Camino del Rio
- Rosecrans Street / Midway Drive

Table 3-14.
Pedestrian Involved Accidents Along Rosecrans Street (2002 – 2007)

Intersection	Number of Crashes
Rosecrans Street-Taylor Street / Pacific Highway	6
Rosecrans Street / Jefferson Street	2
Rosecrans Street / Kurtz Street	6
Rosecrans Street / Sports Arena Boulevard-Camino del Rio	6
Rosecrans Street / Midway Drive	5
Rosecrans Street / Cauby Street	1
Rosecrans Street / Shoup Street	1
Rosecrans Street / Xenophon Street	2
Rosecrans Street / Macaulay Street	1
Rosecrans Street / Nimitz Boulevard	2
Rosecrans Street / Keats Street	1
Rosecrans Street / N. Harbor Drive-Hugo Street	3
Rosecrans Street / Garrison Street	1
Rosecrans Street / Emerson Street	1
Rosecrans Street / Dickens Street	1
Rosecrans Street / Canon Street	1
Rosecrans Street / Talbot Street	1
Rosecrans Street / Owen Street	1
Camino del Rio W. / Moore Street	3
Camino del Rio W. / Hancock Street	4
Camino del Rio W. / Kurtz Street	1
TOTAL	50

Source: SWITRS (2008)



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Pedestrian Model Analysis

The San Diego Pedestrian Model is used to determine areas where high pedestrian activity is likely to occur based on land use (future or existing), available pedestrian and traffic infrastructure (roads and sidewalks) and factors that may affect a person's decision to walk (traffic volume, safety, etc). There are three elements of the pedestrian model: demand/generation, attractors and detractors. Pedestrian modeling and analysis was conducted by ALTA Planning & Designs. The following section discusses the general findings of each of the three models run by ALTA for the Rosecrans corridor. Detailed analysis is provided in their report provided in Appendix 3-F of this study.

Demand modeling was conducted to understand the propensity for pedestrian activity based on population characteristics correlated with higher pedestrian activity. Population density is typically considered a strong indicator of potential pedestrian activity with higher population densities being associated with higher levels of pedestrian travel. Certain subpopulations are also associated with higher levels of walking, including youth, elderly, physically disabled, and low median household income.

GIS-based demand modeling was also employed to identify areas of high pedestrian activity based on proximity to land uses typically associated with attracting relatively higher levels of pedestrian trips. These land uses include schools, transit stops, parks, beaches, retail, and civic facilities (libraries, post offices, and government buildings).

A detractor model was also used to analyze the distribution of various factors along the Corridor which tend to discourage people from walking. Pedestrian detractors include pedestrian/vehicle collisions, high traffic volumes, high posted speed limits, steep slopes, and untraversable infrastructure, specifically freeway and rail Corridors. These detractors generally undermine broadly accepted pedestrian related goals of safety, connectivity, and walkability. The pedestrian detractor composite map identifies several high-detractor areas along the Corridor, especially the entire segment of Camino Del Rio West, the Rosecrans Street / Sports Arena Boulevard intersection and the Rosecrans Street / Midway Drive intersection.

Recommended Pedestrian Improvement Locations

The observational data, pedestrian count data and analysis conducted using the Pedestrian Model illuminate locations of high demand and deficiency along the corridor. These locations warrant relatively higher consideration for pedestrian improvement projects. Exhibit 3-12 displays the results of the pedestrian priority composite, which is a synthesis of the pedestrian attractor, pedestrian generator and pedestrian detractor models, as well as identifies five locations as high priority areas to be the focus of pedestrian improvement project development in the subsequent stages of this study.

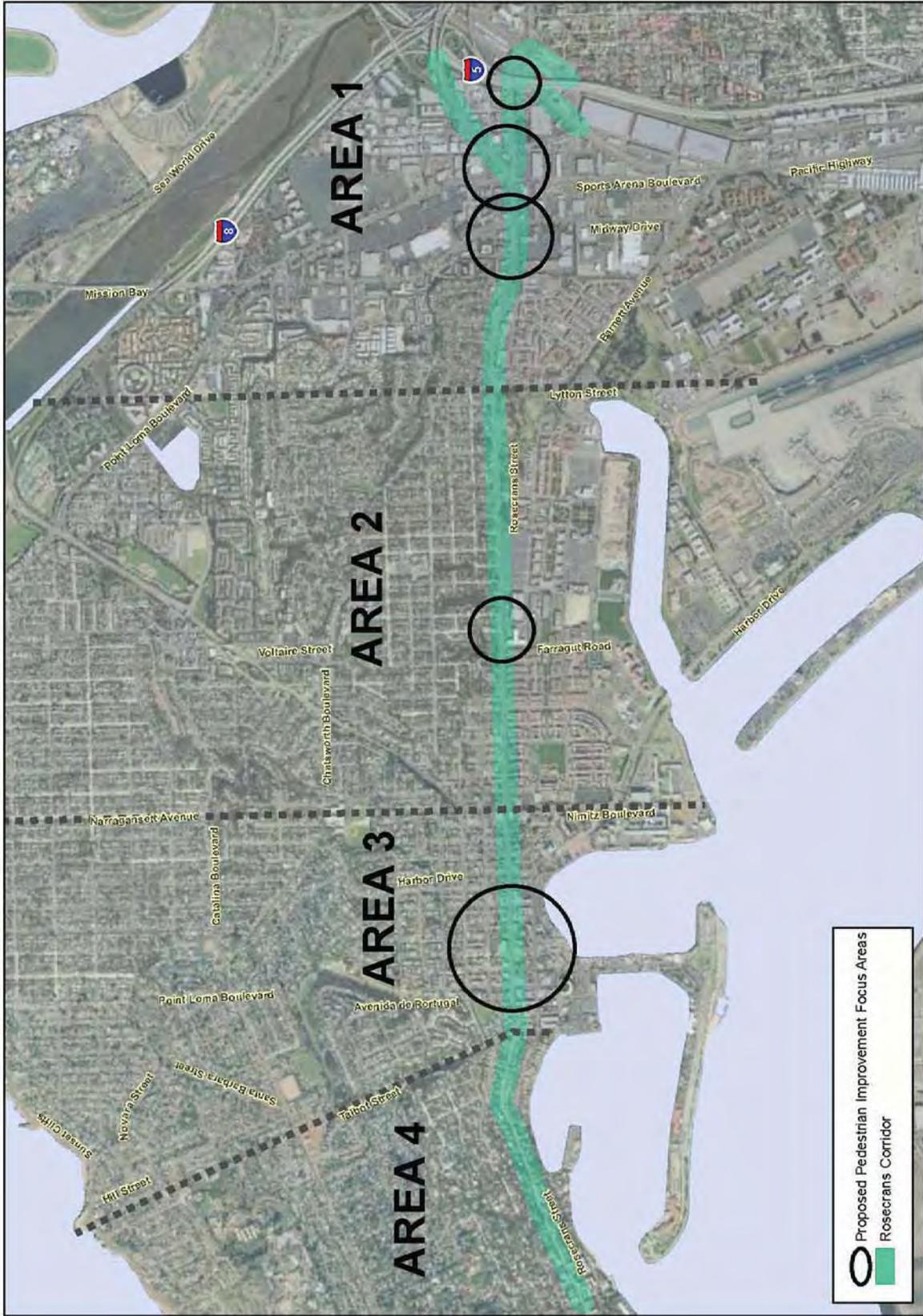


Exhibit 3-12 - Proposed Pedestrian Improvement Areas
 Source: ALTA Planning & Design, Pedestrian & Bicycle Study (Appendix F)



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The five locations identified and highlighted in Exhibit 3-12 are:

- 1) *Rosecrans Street from Jefferson Street through the Congress Street / Taylor Street intersection.* This focus area demonstrates very high demand, transit access issues, inter-community connectivity issues and deficiencies.
- 2) *The Sports Arena Boulevard / Rosecrans Street-Camino del Rio West intersection.* This intersection was identified due to a combination of high demand (transit, priority model results and count data), safety and observational data.
- 3) *The Midway Drive / Rosecrans Street intersection,* due to high demand identified by pedestrian counts, priority model results and transit ridership rates.
- 4) *The Rosecrans Street / Womble Road intersection* through the Rosecrans Street / Farragut Road intersection. This location is a priority because it encompasses key access points between the High Tech High campuses and transit. The mixture and concentration of pedestrian attracting land uses at this location also indicates that there is an opportunity to increase pedestrian activity by making improvements to the pedestrian environment.
- 5) *Rosecrans Street from Avenida de Portugal through the Rosecrans Street /Harbor Drive.* This location is identified due to high demand exhibited by high pedestrian counts, priority model results and transit ridership rates, coupled with insufficient pedestrian infrastructure.



3.6 BICYCLE ASSESSMENT

A detailed bicycle study was prepared by ALTA Planning & Design in July 2009. The study focuses on evaluating the existing bicycle activity along the corridor, existing bicycle storage facilities, locations of bicycle routes, paths and lanes, and long term plans for bicycle improvements in the study area. In addition, the City of San Diego Bicycle Model was used to determine the areas along the corridor with the highest potential for bicycle activity and the areas of focus for future bicycle improvements. The complete study prepared by ALTA Planning & Design is provided in Appendix 3-F of this report.

Bicycle Activity

Bicycle counts were collected at 29 intersections during peak travel periods on April 22, April 23, April 28 and April 29, 2009 in order to understand relative activity levels along the Corridor. Tables 3-15 and 3-16 summarize bicycle count data collected in 15 minute intervals during two-hour morning and evening peak periods, respectively. The tables include the number of bicyclists per intersection leg, the direction of movements, and the sum of bicyclists traveling through the intersection. The highest morning count (38 bicyclists) was recorded at the intersection of Rosecrans Street and Russell Street-Laning Road. This intersection is located in a predominately residential area with newer multifamily housing located on the east side of Rosecrans Street.

The second highest morning count was also recorded in the NTC/Liberty Station area at Rosecrans Street and Nimitz Boulevard. The highest evening 2-hour count of 72 was recorded at the Taylor Street / Pacific Coast Highway intersection, followed by the Rosecrans Street / Kurtz Street intersection (56) and the Taylor Street / Congress Street intersection (47). The high activity levels recorded at Taylor Street and Pacific Highway parallels the high pedestrian count levels. High activity levels at this location are largely explained by this location's proximity to the Old Town Transit Station where many bicyclists connect to transit to continue their commutes. This is also a thoroughfare for bicycle commuters traveling from downtown to the communities northwest and northeast of Old Town.



ROSECRANS CORRIDOR MOBILITY STUDY

Table 3-15.
A.M. Peak Hour Bicycle Volumes

Intersection	West Leg (NB/SB)	North Leg (WB/EB)	East Leg (NB/SB)	South Leg (WB/EB)	Total
Taylor Street / Congress Street	3/9	0/0 (Taylor St.)	7/0 (Congress St.)	0/0 (Taylor St.)	19
Rosecrans Street - Taylor Street / Pacific Coast Highway	3/10 (PCH)	5/0 (Taylor St.)	7/0 (PCH)	0/5 (Rosecrans St.)	30
Rosecrans Street / Jefferson Street	2/13 (Jefferson St.)	0/0 (Rosecrans St.)	0/0 (Jefferson St.)	0/0 (Rosecrans St.)	15
Rosecrans Street / Moore Street	4/12 (Moore St.)	0/0 (Rosecrans St.)	10/2 (Moore St.)	0/0 (Rosecrans St.)	28
Rosecrans Street / Hancock Street	4/12 (Hancock St.)	0/0 (Rosecrans St.)	10/2 (Hancock St.)	0/0 (Rosecrans St.)	28
Rosecrans Street / Kurtz Street	1/8 (Kurtz St.)	2/0 (Rosecrans St.)	14/0 (Kurtz St.)	0/1 (Rosecrans St.)	26
Rosecrans Street / Sports Arena Boulevard-Camino del Rio*	0/0 (Sports Arena Blvd.)	0/1 (Rosecrans St.)	7/3 (Sports Arena Blvd.)	0/6 (Rosecrans St.)	20
Rosecrans Street / Midway Drive	0/7 (Midway Dr.)	3/1 (Rosecrans St.)	6/3 (Midway Dr.)	2/3 (Rosecrans St.)	25
Rosecrans Street / N. Evergreen Street	0/6 (Evergreen St.)	1/2 (Rosecrans St.)	6/2 (Evergreen St.)	0/0 (Rosecrans St.)	17
Rosecrans Street / Lytton Street	0/5 (Lytton St.)	2/1 (Rosecrans St.)	1/0 (Lytton St.)	0/0 (Rosecrans St.)	9
Rosecrans Street / Roosevelt Road	1/6	0/1 (Rosecrans St.)	7/1 (Roosevelt Rd.)	0/0 (Rosecrans St.)	16
Rosecrans Street / Curtis Street	1/6 (Curtis St.)	3/0 (Rosecrans St.)	0/0	1/3 (Rosecrans St.)	14
Rosecrans Street / Womble Road		2/4 (Rosecrans St.)	9/1 (Womble Rd.)	0/0 (Rosecrans St.)	16
Rosecrans Street / Xenophon Street	0/2 (Xenophon St.)	0/0 (Rosecrans St.)		0/0 (Rosecrans St.)	2
Rosecrans Street / Farragut Road-Voltaire Street	0/5 (Voltaire St.)	0/0 (Rosecrans St.)	3/0 (Farragut Rd.)	0/0 (Rosecrans St.)	8
Rosecrans Street / Russell Street-Laning Road	0/4 (Russell St.)	5/0 (Rosecrans St.)	17/0 (Laning Rd.)	0/12 (Rosecrans St.)	38
Rosecrans Street / Oliphant Street	0/4 (Oliphant St.)	0/0 (Rosecrans St.)	8/0	0/0 (Rosecrans St.)	12
Rosecrans Street / Macaulay Street	1/4 (Macaulay St.)	0/0 (Rosecrans St.)	7/1 (Driveway)	0/0 (Rosecrans St.)	13
Rosecrans Street / Nimitz Boulevard	1/4 (Nimitz Blvd.)	12/0 (Rosecrans St.)	8/1 (Nimitz Blvd.)	0/6 (Rosecrans St.)	32
Rosecrans Street / Jarvis Street	0/13 (Jarvis St.)	0/0 (Rosecrans St.)	5/0 (Jarvis St.)	1/0 (Rosecrans St.)	19

Existing Conditions Assessment



Intersection	West Leg (NB/SB)	North Leg (WB/EB)	East Leg (NB/SB)	South Leg (WB/EB)	Total
Rosecrans Street / N. Harbor Drive-Hugo Street	0/3 (Hugo St.)	0/0 (Rosecrans St.)	3/0 (Harbor Dr.)	0/1 (Rosecrans St.)	7
Rosecrans Street / Garrison Street	0/4 (Garrison St.)	0/0	8/0 (Garrison St.)	0/0 (Rosecrans St.)	12
Rosecrans Street / Carleton Street	1/3 (Carleton St.)	1/0 (Rosecrans St.)	3/0 (Carleton St.)	1/0 (Rosecrans St.)	9
Rosecrans Street / Shelter Island Drive-Byron Street	0/4 (Byron St.)	2/1 (Rosecrans St.)	2/0 (Shelter Island Dr.)	0/0 (Rosecrans St.)	9
Rosecrans Street / Canon Street	0/5 (Canon St.)	10/0 (Rosecrans St.)	2/0 (Canon St.)	0/12 (Rosecrans St.)	29
Rosecrans Street / Talbot Street	0/4 (Talbot St.)	0/0 (Rosecrans St.)	2/0 (Talbot St.)	0/0 (Rosecrans St.)	6
Camino del Rio W. / Moore Street	0/6 (Moore St.)	0/0 (Camino del Rio)	0/0 (Moore St.)	3/0 (Camino del Rio)	9
Camino del Rio W. / Hancock Street	0/1 (Hancock St.)	2/0 (Rosecrans St.)	1/0 (Hancock St.)	0/0 (Rosecrans St.)	4
Camino del Rio W. / Kurtz Street	0/1 (Kurtz St.)	2/0 (Rosecrans St.)	1/0 (Kurtz St.)	0/0 (Rosecrans St.)	4
TOTAL	183	63	170	57	476

Source: RBF Consulting; Alta Planning + Design (June 30, 2009)

Note: The Rosecrans Street / Sports Arena Boulevard-Camino del Rio intersection is a six-legged intersection. Counts for two of the six legs are reported here. They were 0 bicyclists northeast bound and 1 bicyclist southwest bound along the northwest leg of the intersection (Camino del Rio) and 0 west bound and 2 east bound along the south leg (Rosecrans St.).



ROSECRANS CORRIDOR MOBILITY STUDY

Table 3-16.
P.M. Peak Hour Bicycle Volumes

Intersection	West Leg (NB/SB)	North Leg (WB/EB)	East Leg (NB/SB)	South Leg (WB/EB)	Total
Taylor Street / Congress Street	9/12	4/0 (Taylor St.)	18/2 (Congress St.)	1/1 (Taylor St.)	47
Rosecrans Street-Taylor Street / Pacific Coast Highway	9/12 (PCH)	21/2 (Taylor St.)	15/3 (PCH)	1/9 (Rosecrans St.)	72
Rosecrans Street / Jefferson Street	7/28 (Jefferson St.)	0/0 (Rosecrans St.)	4/1 (Jefferson St.)	0/0 (Rosecrans St.)	40
Rosecrans Street / Moore Street	4/20 (Moore St.)	0/0 (Rosecrans St.)	20/2 (Moore St.)	0/0 (Rosecrans St.)	46
Rosecrans Street / Hancock Street	1/1 (Hancock St.)	0/0 (Rosecrans St.)	20/5 (Hancock St.)	0/0 (Rosecrans St.)	27
Rosecrans Street / Kurtz Street	2/3 (Kurtz St.)	29/1 (Rosecrans St.)	3/0 (Kurtz St.)	3/15 (Rosecrans St.)	56
Rosecrans Street / Sports Arena Boulevard-Camino del Rio*	2/3 (Sports Arena Blvd.)	2/2 (Rosecrans St.)	6/4 (Sports Arena Blvd.)	6/13 (Rosecrans St.)	43
Rosecrans Street / Midway Drive	3/7 (Midway Dr.)	5/4 (Rosecrans St.)	8/3 (Midway Dr.)	0/7 (Rosecrans St.)	37
Rosecrans Street / N. Evergreen Street	2/5 (Evergreen St.)	0/2 (Rosecrans St.)	3/1 (Evergreen St.)	0/1 (Rosecrans St.)	14
Rosecrans Street / Lytton Street	0/3 (Lytton St.)	1/0 (Rosecrans St.)	2/0 (Lytton St.)	1/3 (Rosecrans St.)	10
Rosecrans Street / Roosevelt Road	2/1	0/2 (Rosecrans St.)	7/2 (Roosevelt Rd.)	0/0 (Rosecrans St.)	14
Rosecrans Street / Curtis Street	0/1 (Curtis St.)	0/0 (Rosecrans St.)	0/0	0/0 (Rosecrans St.)	1
Rosecrans Street / Womble Road		2/2 (Rosecrans St.)	6/1 (Womble Rd.)	0/0 (Rosecrans St.)	11
Rosecrans Street / Xenophon Street	0/6 (Xenophon St.)	0/0 (Rosecrans St.)		0/0 (Rosecrans St.)	6
Rosecrans Street / Farragut Road-Voltaire Street	0/9 (Voltaire St.)	0/0 (Rosecrans St.)	10/0 (Farragut Rd.)	0/0 (Rosecrans St.)	19
Rosecrans Street / Russell Street-Laning Road	0/1 (Russell St.)	5/0 (Rosecrans St.)	11/0 (Laning Rd.)	0/20 (Rosecrans St.)	37
Rosecrans Street / Oliphant Street	0/3 (Oliphant St.)	0/0 (Rosecrans St.)	11/0	0/0 (Rosecrans St.)	14
Rosecrans Street / Macaulay Street	1/4 (Macaulay St.)	0/0 (Rosecrans St.)	6/2 (Driveway)	0/1 (Rosecrans St.)	14
Rosecrans Street / Nimitz Boulevard	0/2 (Nimitz Blvd.)	12/1 (Rosecrans St.)	6/2 (Nimitz Blvd.)	0/8 (Rosecrans St.)	31
Rosecrans Street / Jarvis Street	0/0 (Jarvis St.)	9/0 (Rosecrans St.)	0/0 (Jarvis St.)	0/1 (Rosecrans St.)	10



Intersection	West Leg (NB/SB)	North Leg (WB/EB)	East Leg (NB/SB)	South Leg (WB/EB)	Total
Rosecrans Street / N. Harbor Drive-Hugo Street	0/2 (Hugo St.)	0/0 (Rosecrans St.)	3/0 (Harbor Dr.)	0/4 (Rosecrans St.)	9
Rosecrans Street / Garrison Street	0/3 (Garrison St.)	0/0 (Rosecrans St.)	11/0 (Garrison St.)	0/0 (Rosecrans St.)	14
Rosecrans Street / Carleton Street	1/1 (Carleton St.)	1/0 (Rosecrans St.)	5/4 (Carleton St.)	1/0 (Rosecrans St.)	13
Rosecrans Street / Shelter Island Drive-Byron Street	0/2 (Byron St.)	5/0 (Rosecrans St.)	4/1 (Shelter Island Dr.)	1/0 (Rosecrans St.)	13
Rosecrans Street / Canon Street	1/5 (Canon St.)	12/0 (Rosecrans St.)	8/1 (Canon St.)	0/6 (Rosecrans St.)	33
Rosecrans Street / Talbot Street	1/4 (Talbot St.)	0/0 (Rosecrans St.)	6/1 (Talbot St.)	0/0 (Rosecrans St.)	12
Camino del Rio W. / Moore Street	0/0 (Moore St.)	0/0 (Camino del Rio)	0/0 (Moore St.)	0/0 (Camino del Rio)	0
Camino del Rio W. / Hancock Street	0/12 (Hancock St.)	8/0 (Rosecrans St.)	0/0 (Hancock St.)	0/2 (Rosecrans St.)	22
Camino del Rio W. / Kurtz Street	0/12 (Kurtz St.)	8/0 (Rosecrans St.)	0/0 (Kurtz St.)	0/2 (Rosecrans St.)	22
TOTAL	207	140	228	107	687

Source: RBF Consulting; Alta Planning + Design (June 30, 2009)

Note: *The Rosecrans Street / Sports Arena Boulevard-Camino del Rio intersection is a six-legged intersection. Counts for two of the six legs are reported here. They were 0 bicyclists northeast bound and 2 bicyclists southwest bound along the northwest leg of the intersection (Camino del Rio) and 2 bicyclists west bound and 1 bicyclist east bound along the south leg (Rosecrans St.).



ROSECRANS CORRIDOR MOBILITY STUDY

Existing Bicycle Facilities

This Section describes the Corridor’s existing bicycle facilities, including bikeways and bike parking, while Section 5 evaluates these facilities in terms of their functionality and safety.

Bike Lanes, Bike Routes and Multi-Use Paths (Bikeways)

There are currently 2.48 miles of bike lanes along the Corridor, with no bike routes or bike paths. Table 3-17 summarizes study area bike lanes in feet, while Exhibit 3-13 shows the location of these facilities. As shown, the majority of bike lanes is found in Areas 2 and 4. In Area 2, bike lanes run from Lytton Street to Oliphant Street, and in Area 4 from Talbot Street to the southern terminus of the Corridor at Kellogg Street. There is a gap in bicycle facility between Oliphant Street and Talbot Street.

Table 3-17.
Rosecrans Corridor Bicycle Facilities by Study Area

Study Area	Feet of Bike Lane	Percent of Total
Area 1	2,115.7	16.2%
Area 2	6,202.5	47.3%
Area 3	0	0%
Area 4	4,787.5	36.5%
TOTAL	13,105.7	100%

Bike Parking

The Corridor was inventoried for the presence of bike parking in the public right-of-way. No bike parking was found in the public right-of-way. There are regional bike lockers and a large bike rack located at the northwest corner of the Old Town Transit Center. There are also a few bike racks located along the Corridor on private property.

Bicycle Model

Similar to the Pedestrian Model discussed previously, the bicycle model evaluates the locations along the corridor with the potential for high bicycle activity both under existing conditions and in the future. Three models are combined to identify locations along the corridor where bicycle improvements would likely have the greatest benefit to the bicycling environment.

The bicycle trip generator model highlights locations along the Corridor with a greater likelihood of generating a bicycle trip, such as areas with high population or employment densities, or high concentrations of sub-populations known to depend on bicycling, such as bicycle commuters or zero-vehicle households. The results of the generator model show that Area 1 has the highest level of bicycle generation with Areas 3 and 4 displaying moderate levels of bicycle generation. Liberty Station does not score high in the generator model because the model relies on 2000 US Census data thus it reflects conditions pre-redevelopment of the NTC.

The bicycle trip attractor model input variables reflect land use types with relatively higher propensity to attract a bicycle trip, such as schools, parks, transit, civic facilities and retail. Areas 1 and 3 show high levels of bicycle trip attraction. Liberty Station scores are not as high as might be expected due to the models point and weight system. In the model retail and high, middle and elementary schools are assigned one point out of four possible.



The bicycle trip detractor model reflects indications of “bicycle barriers” or “problem areas” such as roadways with high vehicular traffic volumes and speeds, freeway on/off ramps, steep slopes, and especially, high bicycle crash locations. Table 3-18 summarizes the results of the bicycle crash analysis for the year 2002 through 2007.

Table 3-18.
Bicycle Involved Accidents (2002 – 2007)

Intersection	Number of Crashes
Taylor Street / Congress Street	1
Rosecrans Street-Taylor Street / Pacific Highway	6
Rosecrans Street / Jefferson Street	1
Rosecrans Street / Moore Street	1
Rosecrans Street / Kurtz Street	1
Rosecrans Street / Sports Arena Boulevard-Camino del Rio	6
Rosecrans Street / Midway Drive	2
Rosecrans Street / N. Evergreen Street	3
Rosecrans Street / Lytton Street	2
Rosecrans Street / Poe Street	1
Rosecrans Street / N. Harbor Drive-Hugo Street	1
Rosecrans Street / Emerson Street	2
Rosecrans Street / Avenida de Portugal	2
Rosecrans Street / Upshur Street	1
Rosecrans Street / Owen Street	1
TOTAL	31

Source: SWITRS (2008)

As shown, a total of 31 bicycle crashes were reported. Several intersections had three or more crashes over the five year period, including:

- Rosecrans Street - Taylor Street / Pacific Highway
- Rosecrans Street / Sports Arena Boulevard - Camino del Rio
- Rosecrans Street / N. Evergreen Street



ROSECRANS CORRIDOR MOBILITY STUDY

Bicycle Constraints Analysis

The majority of the Corridor is a highly intimidating bicycling environment that lacks safe and continuous bicycle facilities and fails to connect to the proposed regional bicycle network and to key activity centers. Areas 1, 2 and 3 are particularly intimidating to bicyclists due to multiple travel lanes, traffic volumes, speeds and large intersections. A striking amount of sidewalk riding was observed, most commonly throughout Area 1 and around NTC/Liberty Station, which is a clear indication that bicyclists are uncomfortable riding in the roadway. This condition was encountered in the NTC area where numerous bicyclists were observed riding on the sidewalk despite the presences of bike lanes. The narrow bike lanes along Rosecrans do not appear to provide adequate separation from the high traffic volume present on this roadway. Area 1 and 4 consistently demonstrate high bicycling demands and high detractor characteristics.

Exhibit 3-13 shows that existing bicycle facility gaps within the Corridor occur at points of potential connectivity to the existing and proposed regional bicycle network, in particular to the proposed Central Coast Corridor and the Coastal Rail Trail, both of which provide key north-south regional bicycle connections. Based on observation of the Corridor, left turns are particularly challenging for bicyclists as they often have to cross multiple lanes of traffic in order to access left turn lanes. This challenge is particularly prevalent throughout Area 1 and was observed for bicyclist traveling northbound on Rosecrans Street and attempting to make a left-turn onto Nimitz Boulevard, which is part of the proposed Central Coast regional corridor. Bicycles were also found locked to various objects in commercial areas along the Corridor, indicating a need for bicycle parking to facilitate multi-modal trip taking.

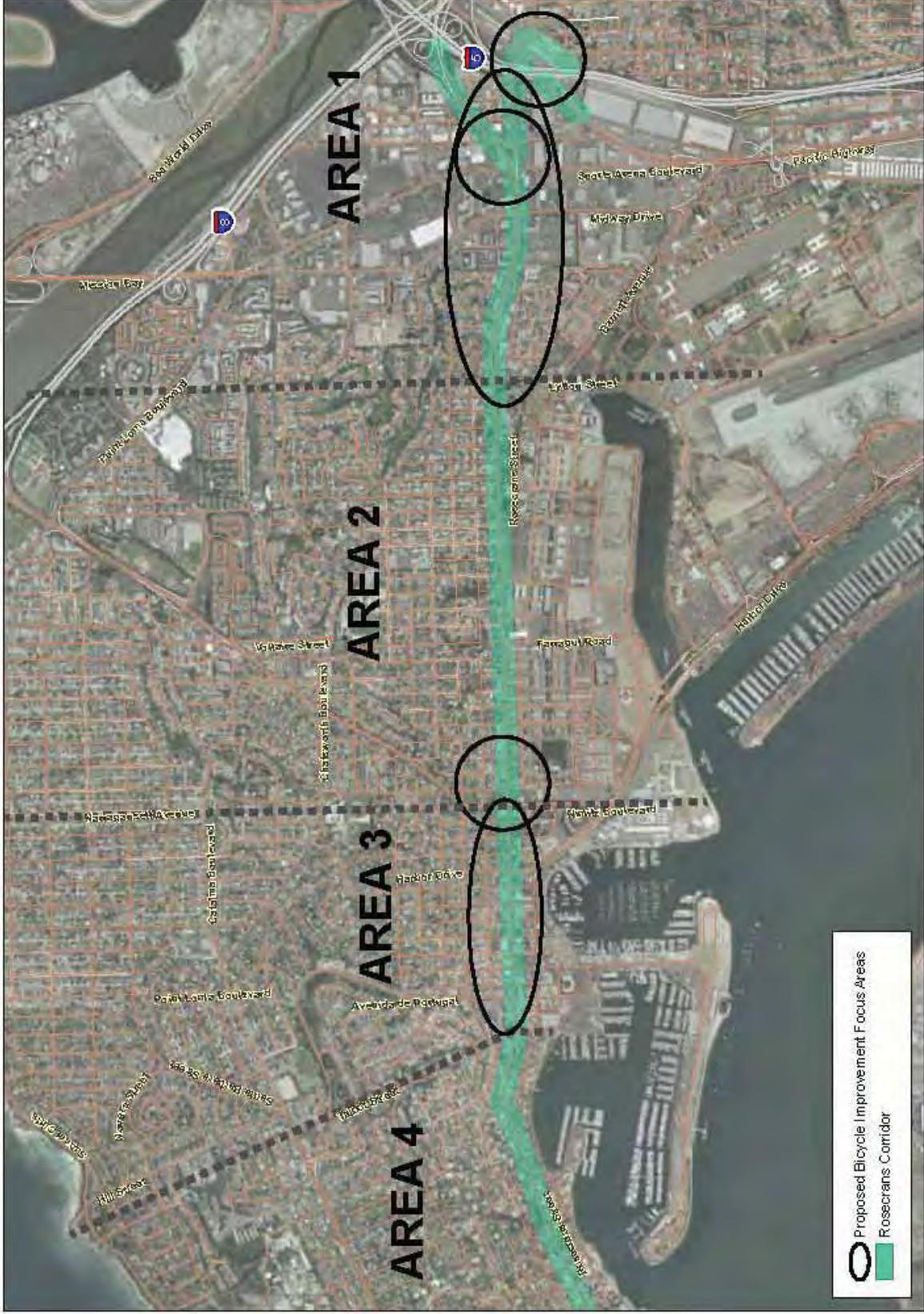


Exhibit 3-13 - Proposed Bicycle Improvement Areas
 Source: ALTA Planning & Design, Pedestrian & Bicycle Study (Appendix F)



ROSECRANS CORRIDOR MOBILITY STUDY

3.7 TRANSIT ASSESSMENT

The IBI Group prepared a technical analysis of existing transit service and facilities within the project study area. The complete report prepared by the IBI Group is provided in Appendix 3-G of this report. The report includes an assessment of transit services and operational characteristics, including routes operating short segments within the corridor and those explicitly serving it, ridership and frequency, and span of service information. In addition, the report details existing issues and concerns from the transit operator's standpoint, including potential congestion points, stop improvement needs, and on-time performance.

Fieldwork was conducted in May, June, and July of 2009, and transit route and stop information is current as of July 2009. Ridership data was obtained from SANDAG FY 09 Daily Ridership reports. Information on transit operating issues was obtained through field observations and conversations with MTS, San Diego Trolley, Inc., and city of San Diego staff.

Existing Transit Services

As a major access path to the busiest transit center in San Diego County (Old Town Transit Center), the Rosecrans Corridor has a large number of buses operating in it, especially near the Old Town Transit Center. MTS Routes 28 and 84 run in the corridor itself and are discussed in detail below. Several other routes use the corridor for short segments and are summarized in this section. Exhibit 3-14 illustrates the transit routes serving the Rosecrans Corridor study area.

Route 28 - Route 28 is the primary route along Rosecrans Street, connecting the Old Town Transit Center and Shelter Island. The three-mile route can be effectively broken into three segments. The eastern segment is comprised of dense commercial and retail developments; the central segment is a mix of single family residential, commercial, and the mixed-use Liberty Station development; and the western segment is a mix of residential and small-scale commercial uses.

Route 84 - Route 84 connects the Naval Facilities at the end of Point Loma to a number of different attractions. Beginning at the intersection of Shelter Island Drive and Rosecrans Street, the service features two different alignments. The one-mile segment along Rosecrans Street was the focus of data gathering efforts, but the route also operates along the bayside of the Naval Submarine Base, and serves the Cabrillo National Monument, which runs along the spine of Point Loma. The area served is primarily residential in nature, with some commercial developments near its eastern terminus, and governmental facilities along the western and southern edges of the route.

Route 8/9 - Route 8/9 connects Old Town Transit Center and Mission Bay, Mission Beach, and Pacific Beach. Route 8 completes the route in a clockwise direction, and Route 9 mirrors Route 8 in a counter clockwise direction. The route has two stops in each direction along Rosecrans Street between Sports Arena Boulevard and the Old Town Transit Center. The service is one of the most popular local routes in the city of San Diego, and features 15-minute frequency 7 days a week.



Existing Conditions Assessment

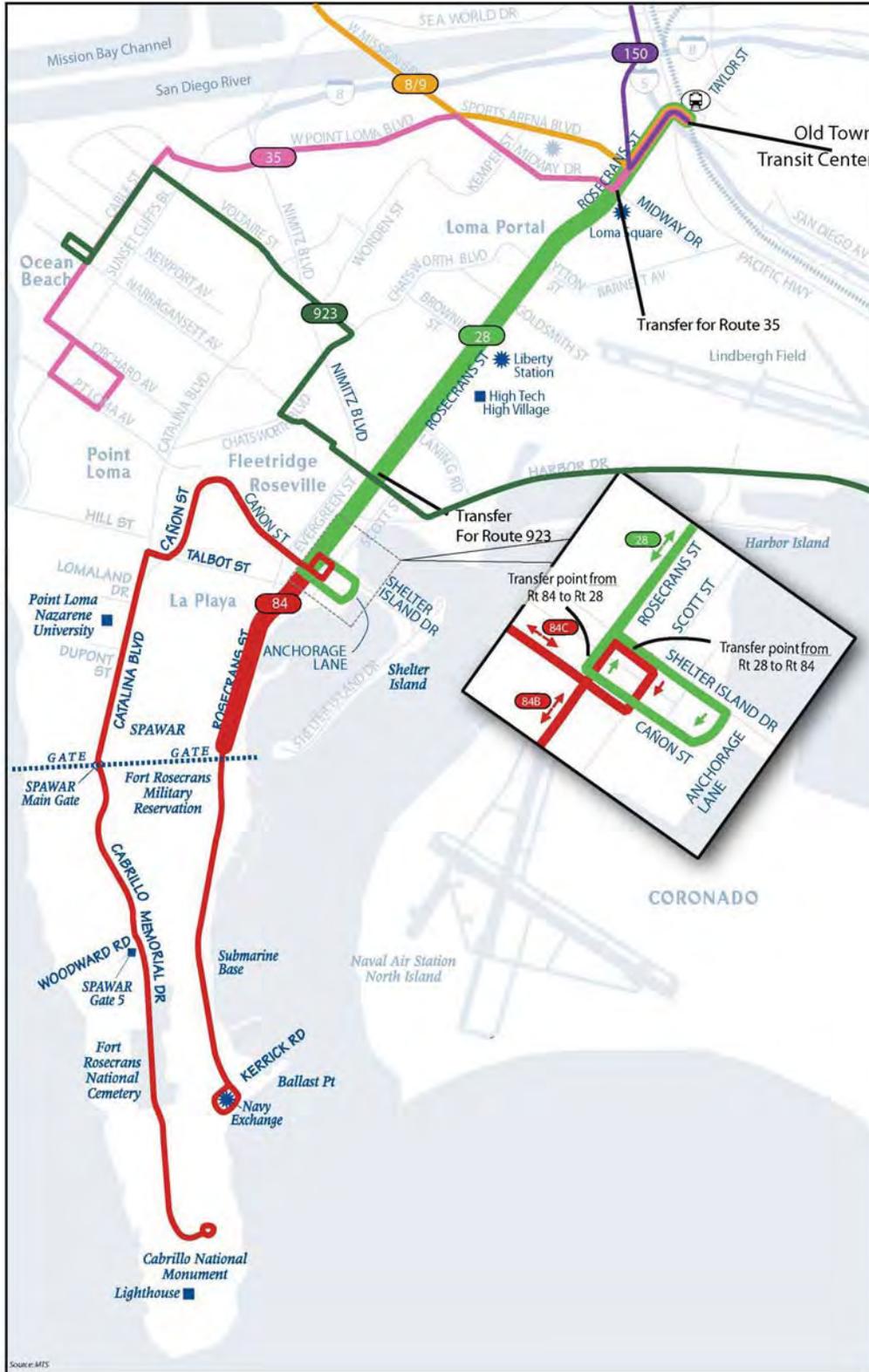


Exhibit 3-14 – Existing Transit Routes in the Rosecrans Corridor
Source: IBI Group, Transit Study (Appendix G)



ROSECRANS CORRIDOR MOBILITY STUDY

Route 35 - Route 35 connects the Old Town Transit Center to Ocean Beach, primarily along Midway Drive and West Point Loma Blvd., with three stops along Rosecrans Street between Midway Drive and the Old Town Transit Center. The route serves several commercial developments, including Loma Square, Point Loma Plaza, and the Midway Town Square, and features 30-minute frequency 7 days a week.

Route 150 - Route 150 connects Downtown San Diego and University Town Centre via UC San Diego and the Old Town Transit Center, primarily along surface streets. The only stop in the study area is at the Old Town Transit Center. Service is provided on weekdays only, with 15-minute frequency, plus additional peak service that adds an additional four southbound arrivals to Old Town and one northbound departure from Old Town Transit Center each UCSD school day. The service runs 5:00 am-12:00 am weekdays.

Route 923 - Route 923 connects Downtown San Diego and Ocean Beach along North Harbor Drive. The route is heavily traveled, and intersects the Rosecrans Corridor at Nimitz Boulevard, near Liberty Station. It has 30-minute frequency on weekdays and 60-minute frequency on Saturdays and Sundays.

Rosecrans Corridor Ridership Patterns

Based on SANDAG FY 09 data, the corridor has 2,571 daily trip ends. The breakdown by route is shown in 3-19. The most heavily used route in the corridor, with nearly two-thirds of the total, is Route 28 with 64.3 % of the daily trip ends. Due to the high demand to the corridor in the am and from the corridor in the pm, Route 28 has high numbers of westbound alightings and eastbound boardings.

Route 84 is the second highest used route, with 14.4 % of the trip ends. Route 35 has 10.1 % of the corridors trip ends, even though it has only a few stops on the northern end of the corridor. Route 923's east west service has 7.2 % of the trip ends, served by one stop in each direction at Nimitz Boulevard. The remainder of the trip ends (4.0 %) take place on Route 8/9 in the northern end of the corridor.

Existing Transit Stops

There are currently 52 stops in the Rosecrans Corridor, with three basic stop types: sign only, bench, and shelter. A description of each type of stop is discussed in the IBI Transit Report provided as Appendix 3-G to this report. Exhibit 3-15 shows the location and types of stops in the corridor. Pictures and description of adjacent land uses for each stop is also provided in Appendix 3-G.



Table 3-19.
Rosecrans Corridor FY 09 Daily Ridership

Route/Direction	Boardings	Alightings	Trip Ends	Percent of Corridor Total
8/9				
Clockwise (8)	26	29	55	
Counterclockwise (9)	22	26	48	
Route Total			103	4.0
28				
Eastbound	736	86	822	
Westbound	103	729	832	
Route Total			1,654	64.3
35				
Eastbound	91	57	148	
Westbound	55	57	112	
Route Total			260	10.1
84				
Inbound (EB)	15	73	88	
Outbound (WB)	122	159	281	
Route Total			369	14.4
923				
Eastbound	57	49	106	
Westbound	27	52	79	
Route Total			185	7.2
Corridor Totals			2,571	100.0



ROSECRANS CORRIDOR MOBILITY STUDY

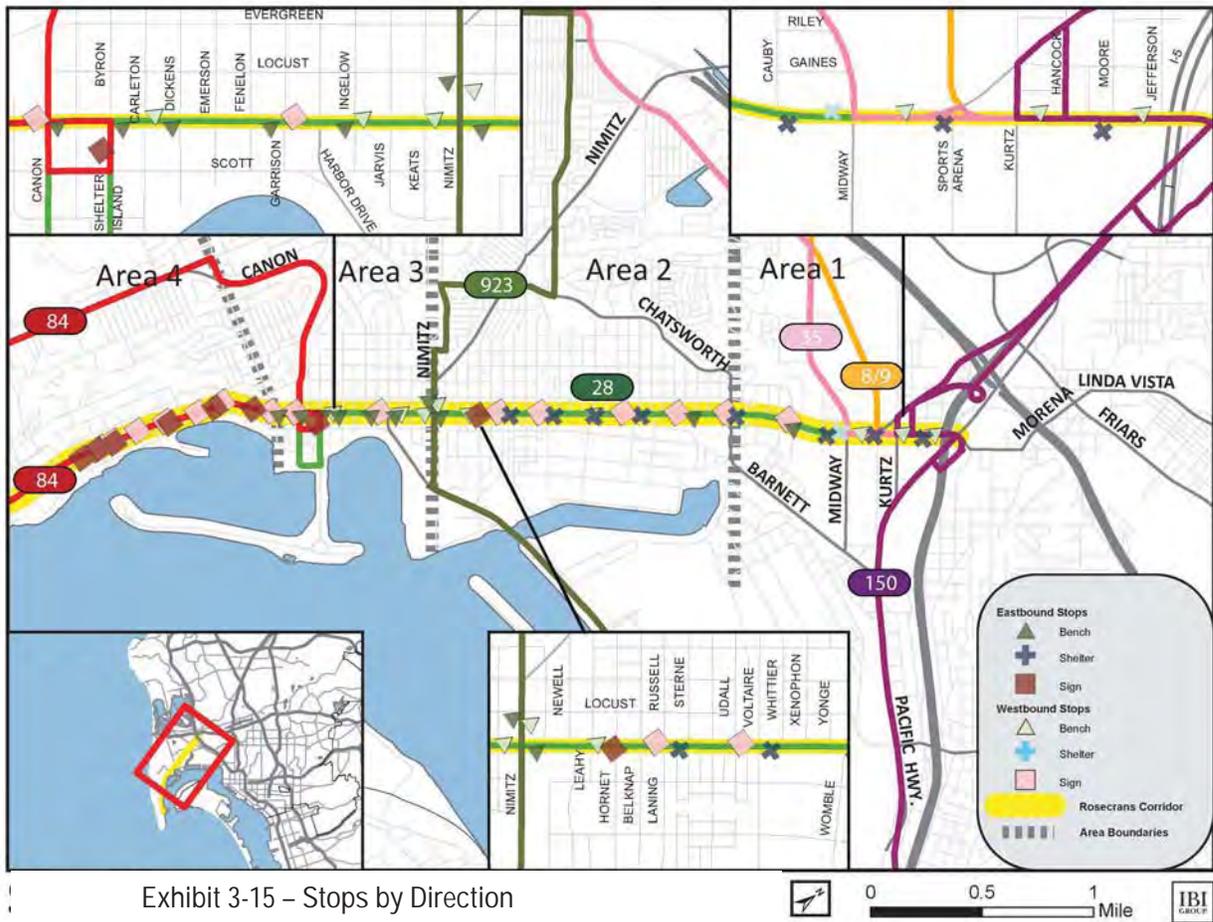


Exhibit 3-15 – Stops by Direction
 Source: IBI Group, Transit Study (Appendix G)

Existing Conditions Assessment

Stop Ridership Analysis

Based on field observations, riders generally have a pleasant waiting environment at the bus stops. The stop inventory in Table 3-20 provides FY 2009 boarding and alighting figures, along with the amenities provided at each stop. As expected, ridership levels are highest in the commercial areas of the corridor, with the area around Shelter Island Drive and Canon Street having the highest level of activity. Stops at High Tech High, the Rosecrans Street & Nimitz Boulevard intersection, Sports Arena Boulevard, Midway Drive, and Pacific Highway also have high levels of ridership.

Most of the 16 high volume stops (more than 50 trip ends per day) have benches and trash cans. Three of the stops (Nimitz Boulevard west of Rosecrans Street, Shelter Island Drive west of Rosecrans Street, and westbound Udall Street) do not have benches, due largely to the lack of available space on the sidewalk. A large number of the high volume stops (13 of 16 or 81%) have benches, and riders seemed comfortable using them. Only five of the 16 high volume stops have shelters. It would be desirable to provide shelters at most of the high volume stops that do not currently have them.



Most of the medium volume stops (between 50 and 26 trip ends) have benches (6 of 9 or 67%). Many of them are a unique design consistently deployed throughout the southern end of the corridor. Two medium volume stops have shelters (eastbound stops at Lanning Road and Moore Street).

Seven of the lower volume stops (25 trip ends or less) have a bench (7 of 27 or 26%). Two lower volume bus stops adjacent to or near Liberty Station (eastbound stops at Roosevelt Road and Lytton Street) have shelters that were provided as part of the Liberty Station development.



ROSECRANS CORRIDOR MOBILITY STUDY

Table 3-20.
Corridor Stops by Trip Ends

Rosecrans Corridor Existing Stop	Dir	Ons	Offs	Total Trip Ends	Shelter	Bench	Lighting	Trash	Concrete Pad	Stop Location on Block	Route(s) Served
Cañon	EB	160	67	227		X		X		Far	28, 84
Shelter Island Drive (on SI Dr. east of Rosecrans)	EB	62	161	223						Mid	28, 84
Sports Arena	EB	104	73	177	X	X	X	X	X	Near	28, 35
Farragut/Voltaire	EB	135	4	139	X	X	X	X	X	Far	28
Midway	WB	38	80	118	X	X	X	X	X	Far	28
Zola	WB	5	113	118		X				Near	28
Womble	EB	107	6	113	X	X	X	X	X	Far	28
Nimitz (on Nimitz west of Rosecrans)	EB	57	49	106						Mid	923
Udall	WB	4	101	105						Near	28
Kurtz/Hancock	WB	35	54	89		X		X		Mid	8/9, 28, 35
Sports Arena	WB	41	44	85		XX				Mid	28, 35
Moore	WB	63	19	82		X		X		Mid	8/9, 28, 35
Nimitz (on Nimitz west of Rosecrans)	WB	27	52	79		X		X	X	Far	923
Nimitz (on Rosecrans)	WB	5	72	77		X		X		Far	28
Nimitz (on Rosecrans)	EB	49	12	61		X		X		Far	28
Loma Square	EB	44	13	57	X	X	X	X		Mid	28
Carleton	WB	0	50	50		X		X		Mid	28



ROSECRANS CORRIDOR MOBILITY STUDY

Table 3-20.
Corridor Stops by Trip Ends

Rosecrans Corridor Existing Stop	Dir	Ons	Offs	Total Trip Ends	Shelter	Bench	Lighting	Trash	Concrete Pad	Stop Location on Block	Route(s) Served
Lanning	EB	39	0	39	X	X	X	X	X	Far	28
Moore/Pac Hwy	EB	26	12	38	X	X	X	X		Mid	8/9, 28, 35
Ingelow	EB	32	3	35		X			X	Near	28
Shelter Island (on Rosecrans)	EB	34	0	34		X		X		Far	28
Dickens	EB	31	1	32						Near	28
Garrison	WB	0	30	30						Near	28
Garrison	EB	29	0	29		X		X		Near	28
Russell	WB	1	25	26				X		Far	28
Browning/Curtis	WB	1	24	25						Mid	28
Oliphant	WB	2	19	21		X		X	X	Near	28
Ingelow	WB	2	19	21		X		X		Near	28
Lytton	EB	17	4	21	X	X	X	X		Far	28
Evergreen	EB	12	8	20		X		X		Far	28
Evergreen	WB	6	11	17						Far	28
Roosevelt	EB	14	3	17	X	X	X	X	X	Far	28
Poe/Hornet	EB	12	2	14						Mid	28
Goldsmith	WB	1	12	13						Mid	28
Lytton	WB	3	8	11						Far	28
Ibsen	EB	8	0	8		X		X	X	Mid	28
Bessemer	EB	0	8	8						Far	84
McCall	WB	1	6	7						Near	84
McCall	EB	5	0	5						Far	84
Lawrence	WB	0	4	4						Near	84
Lawrence	EB	3	0	3						Near	84



ROSECRANS CORRIDOR MOBILITY STUDY

Table 3-20.
Corridor Stops by Trip Ends

Rosecrans Corridor Existing Stop	Dir	Ons	Offs	Total Trip Ends	Shelter	Bench	Lighting	Trash	Concrete Pad	Stop Location on Block	Route(s) Served
Talbot	EB	3	0	3		X			X	Far	84
Cañon	WB	2	0	2						Far	84
Talbot	WB	2	0	2						Far	84
Qualtrough	WB	0	1	1						Far	84
Kellogg	EB	1	0	1			X			Mid	84
Owen	WB	0	1	1						Far	84
Owen	EB	1	0	1						Near	84
Qualtrough	EB	1	0	1						Far	84
Kona	EB	1	0	1						Near	84
Kona	WB	0	0	0						Mid	84
Armada	WB	0	0	0						Mid	84



Existing Transit Operational Issues

The consultant team observed bus operations along Rosecrans Street and at the Old Town Transit Center, and discussed operational issues with MTS staff. Comments from MTS staff and the consultant observations are summarized below.

Rosecrans Corridor Issues

The basic route structure in the Rosecrans Corridor, implemented as part of the Comprehensive Operations Assessment, appears to be working well. Route 28, which used to serve the Sub Base and Cabrillo Monument, now focuses on the higher volume, longer distance travel north of Shelter Island Drive, while Route 84 provides the local access service to Point Loma south of Shelter Island Drive.

High levels of demand are experienced on weekdays at High Tech High School in Liberty Station. Tripper buses (additional trips added to serve peak ridership) have been added to Route 28 in both directions (westbound am and eastbound pm) to provide additional capacity for the high school.

Demand on Sundays to the shopping opportunities at Liberty Station is high.

The timing of transfers between Routes 28 and 923 at Rosecrans Street/Nimitz Boulevard has been a concern. While some connections in the morning have minimal wait times for the Route 923 connections in both directions to eastbound Route 28, the scheduled connecting times for most of the day is approximately 20 minutes. Timed meets at other locations on both routes make it difficult to more closely time this connection. For the southbound Route 28 connections to either direction of Route 923, the connections can be made with minimal wait times.

There has been interest in extending Route 28 to serve Shelter Island. At this time, the funds needed to operate the extension to the vicinity of Humphrey's Resort (approximately \$67,000 annually) are not available.

Due to budget constraints, it is expected that Route 84 service to the Sub Base and the Cabrillo National Monument will be deleted in the future. The majority of riders are civilian employees on the base; members of the military do not use transit in large numbers to reach the sub base. The elimination of this service could increase traffic in the Rosecrans Corridor.

Extending the existing queue jump lane on eastbound Rosecrans Street at Pacific Highway approximately 200 feet might be desirable due to the queuing of through vehicles that occurs at certain times of day.

On time performance (defined as the bus leaving the stop less than five minutes after its scheduled departure time) is an important measure of transit performance. The standard for Urban routes like the ones in the Rosecrans Corridor is for 85% of trips to be on time. The time checks take place at specific time points on each route. The time points for Route 28 are Midway Drive and Nimitz Boulevard, while the time point for Route 84 is at Canon. The time point for Route 923 is Nimitz Boulevard.

ROSECRANS CORRIDOR MOBILITY STUDY

Based on data obtained from SANDAG, Route 28 is 77% on time for eastbound trips and 90% on time for westbound trips. Route 84 is on time 73% for westbound trips and 91% for eastbound trips. These figures reflect the general congestion at key points in the corridor. Route 923 is on time 91% for eastbound trips and 65% for westbound trips.

To help improve on time performance, transit signal priority and/or queue jumps at Midway Drive (both directions), Lytton Street (westbound), Nimitz Boulevard (both directions), and North Harbor Drive (both directions) would be desirable to reduce bus waiting time at these intersections.

Old Town Transit Center Issues

The Old Town Transit Center is one of the busiest transit centers in the MTS system. Two of the key issues relate to pedestrian circulation and parking. The at-grade pedestrian crossing of the LRT and Amtrak/Coaster/freight tracks on the south side of Taylor Street near the northern end of the transit center has been a concern. SANDAG is about to undertake a capital improvement project to relocate the eastbound bus entrance to the station west to be closer to Pacific Highway. This change will enable fencing to be installed along Taylor Street between the new driveway and the tracks to discourage pedestrians from crossing the tracks. They will be redirected to use the tunnel under the tracks at the south end of the LRT platform. This new arrangement will reduce the number of at-grade pedestrian crossings of the tracks.

Parking has been a concern for the transit center for some time. There are approximately 450 spaces on the west side of the transit center. These spaces are used by both transit riders and state park visitors. They are in high demand, especially during special events in Old Town, or stadium events at Qualcomm Stadium and Petco Park. Standby buses that were staged on the west side have been moved to the east side bus platform to free up parking spaces.

Overflow parking has been available on nights and weekends at the County Mental Health lot across Pacific Highway from the transit center. This agreement is no longer in place and overflow parking is now available at the Caltrans building parking lot north of the transit center. While closer than the County Mental Health lot, it is less visible to drivers and requires active direction and signing to direct motorists to it. Transit riders are encouraged to use other stations in Mission Valley such as Morena/Linda Vista, Hazard Center, or Qualcomm Stadium for special events. New structured parking or parking on the lot north of the transit center has not been considered recently.

Bus circulation within the transit center is working well and no changes are anticipated. Access to the transit center works well for eastbound buses on Rosecrans Street. However, buses coming from the south or north on Pacific Highway experience delays getting through the Pacific Highway/Rosecrans Street/Taylor Street intersection. While FY 08 data provided by SANDAG show that buses in the Rosecrans Corridor arrive and depart the Old Town Transit Center on time a significant majority of the time, queue jumps and transit signal priority would decrease wait times at the intersection and enhance operations.



As part of the field review, the consultant team spoke with off-duty drivers to gain their perspective, and two main issues emerged. Chief among them was the lack of restrooms for drivers along Routes 28 and 84. Drivers have familiarized themselves with places along the respective routes to utilize restroom facilities.

Another issue identified by drivers is the presence of duplicate signs at the Old Town Transit Center bus bay for Route 28. As seen in the picture below, there are currently two separate waiting areas for Route 28, which requires drivers to assist in directing passengers to the correct location.

Recommended Transit Focus Areas:

Based on the data reviewed, field observations, and discussions with MTS and city staff, here are the key issues that should be addressed in the development of project alternatives:

- Improved amenities should be provided at selected high volume stops.
- There is a concern regarding some transit passengers crossing Rosecrans Street near Liberty Station at the unsignalized intersection at Udall Street. Additional analysis is being conducted as part of the development of improvement proposals to determine if the stop should be moved to address this issue.
- Buses get caught in queues at key intersections. Queue jumps should be considered at Midway Drive, Lytton Street, Nimitz Boulevard, and North Harbor Drive to enhance bus operations and improve on-time performance.
- Pedestrian crossings on Taylor Street at the Old Town Transit Center need to be addressed. An improvement project is underway by SANDAG to reduce the number of pedestrians crossing the railroad tracks at-grade by directing them to the underpass at the south end of the platform.
- Extending the eastbound transit lane on Rosecrans Street at Pacific Highway should be considered to help minimize the time needed to pass through this intersection.
- Stop consolidation should be considered on Rosecrans Street south of Canon due to low passenger volumes and the close proximity of some stops.

ROSECRANS CORRIDOR MOBILITY STUDY

3.8 SUMMARY AND RECOMMENDATIONS

Based on the analysis conducted, the critical circulation locations are:

- **Area 1:** Intersection delays and queuing, particularly in the northbound direction (eastbound direction) through the Camino del Rio-Rosecrans triangle from Midway to I-8 and Taylor Street, are the highest for the corridor. Traffic patterns indicate that this section serves primarily commercial trips from the residential areas as well as commuter trips accessing the freeway. Based on the high traffic volumes and speeds, there is a correlation to the accident data reports. As discussed previously, the highest number of accidents along the corridor occur through Area 1 with 288 accidents reported over a 10-year period. The majority of the accidents in this section are right-angle accidents and rear-end accidents. On-street parking is provided along sections of Rosecrans Street that have speeds measured at over 45 mph. Consideration should be made to remove the parking spaces along this portion of Rosecrans Street. By removing the parking through Area 1, bicycle lanes could be accommodated that would connect to the existing Class II bicycle lanes in Section 2.
- **Area 2:** Observations through Area 2 show that traffic maintains free flow speeds during the off-peak period. However, the operational analysis shows that during the p.m. peak hour the intersection of Rosecrans Street/Nimitz Boulevard operates at LOS E. The acceptable operating conditions could be attributed to the improvements installed with the NTC project. However, the roadway improvements that have benefited the east side (NTC) of Rosecrans Street have created circulation and access issues for the west side of the Rosecrans Street. For many of the side streets, access onto Rosecrans can be challenging. No signalized access is provided onto Rosecrans between Lytton Street and Womble Road. Although left turns can be made from many streets, peak hour observations have shown that it is difficult due to the width of the road, speeds of traffic and volumes of traffic through Area 2. Traffic circulation improvements along Rosecrans should consider modifying the existing medians to restrict some left turn access and modify traffic signals to accommodate both the east and west sides of Rosecrans Streets. Relative to non-motorized transportation modes, improvements through this area should focus on the east side of Rosecrans Street. Improvement considered should include widening the existing southbound Class II bicycle lane to a minimum of 6 feet with an adjacent travel lane of 13 feet. This will help to create a buffer between the travel lanes and pedestrians along the east side of Rosecrans.
- **Area 3:** Through Area 3, the measured 85th percentile traffic speeds support a reduction in posted speed limit, which would result in speeds more appropriately suited to a walking environment. Side street levels of service measured through Area 3 indicate that delays to left turning traffic can exceed the acceptable thresholds. To enhance the village



environment and improve the aesthetic quality of this section of the corridor, cross-section modifications should be considered. This may include reducing the travel lanes from four to two lanes. Detailed analysis of the potential for diversion should be conducted to determine the impact of potential capacity reduction strategies. However, reducing the number of travel lanes would provide ample space to provide on-street parking along Rosecrans as well as a Class II bicycle lane. Reducing traffic speeds to create pedestrian compatible environment, reducing capacity to improve parking and providing traffic calming features such as curb extensions will help enhance the walkability through the Village.

- Area 4: Measured 85th percentile speeds through Area 4 exceed the posted speed limit by more than 5 mph. Rosecrans is two lanes through this section with Class II bicycle lanes. As this is a residential neighborhood with fronting properties, physical measures to reduce speeds are recommended to address the high rates of speed. A traffic calming plan that compliments the classification of this road and the surrounding land uses should be developed to address the speeding through this section.



ROSECRANS CORRIDOR MOBILITY STUDY

Chapter 4: Future Conditions Assessment

Future conditions analysis for the Rosecrans Corridor Mobility Study addresses the state of mobility for the year 2030. SANDAG Series 11 traffic model data was used in this analysis to forecast traffic volumes, while the SANDAG RTP transit ridership projections were used to assess transit demand and ridership. These two factors combined with planned land use changes and long term bicycle and pedestrian facility enhancements were used to determine future pedestrian and bicycle activity in the study area.

The goal of the future year conditions analysis is to identify locations where the mobility conditions operate at less than an acceptable level. This analysis forms the basis for the alternative analysis presented in the following chapter of this report.

4.1 FORECASTING METHODOLOGY

As stated previously, the method for forecasting travel demand in the study area varied by mode. All travel demand forecasting was based on one comment principal – land use for the study area is based on the current, adopted Community Plans within the study area. As necessary, the regional forecasting models were refined to reflect the most current land use or transportation plan. However, it should be noted that only transportation improvements planned to be completed by the year 2030 were included in the analysis of year 2030 conditions. Other improvements may be under consideration by regional agencies or by City of San Diego that will extend beyond year 2030. Such improvements were removed from the horizon year conditions in order to maintain a conservative approach to the year 2030 analysis.

Traffic Modeling

Working together with SANDAG, the regional traffic model was revised to ensure that current planned projects were included in the model. Major land use projects within the study area included in the Series 11 traffic model include the Sports Arena redevelopment project, Airport Master Plan, Naval Training Center (NTC), and hotel/convention facilities near the airport. All projects were reviewed by City planning staff and refined as necessary to reflect the latest long-term planning efforts for those sites.

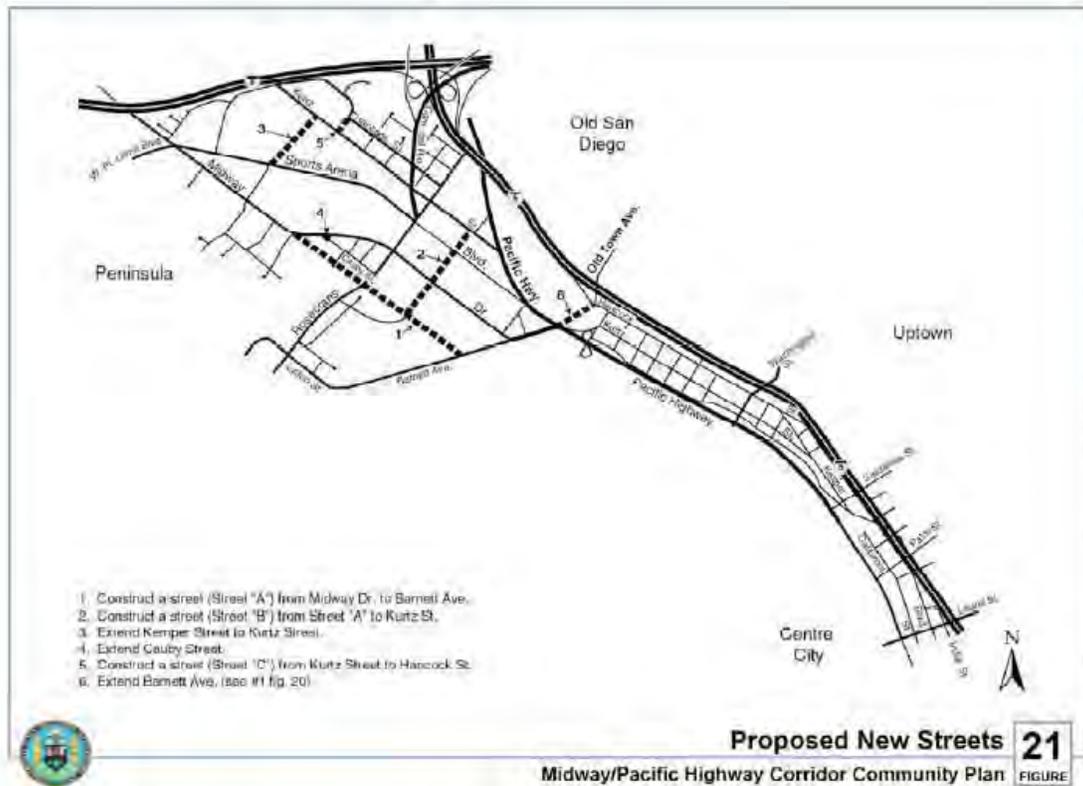
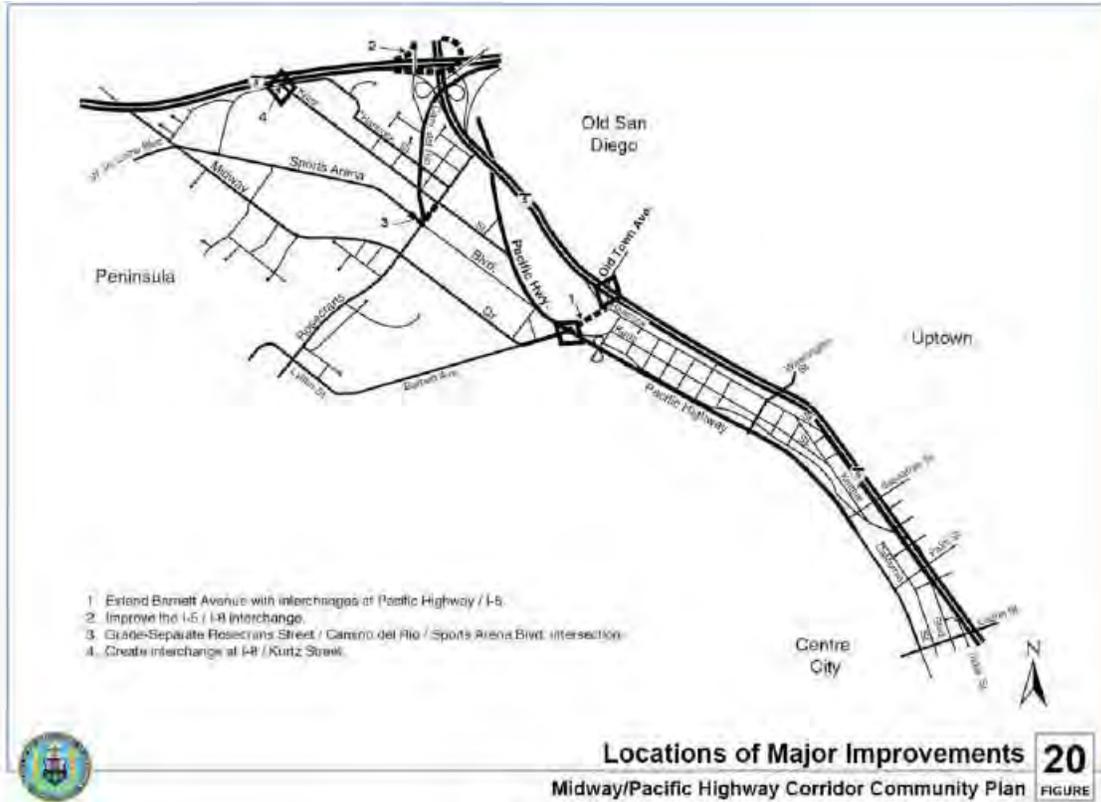
In addition, changes to the roadway system were reviewed for consistency with the adopted Community Plans for the study area. Exhibit 4-1 illustrates the roadway network identified in the community plan that was reflected in the traffic model runs conducted for this study. One of the key network changes illustrated in Exhibit 4-1 and summarized in the Midway Community Plan includes the extension of Sports Arena Boulevard east through the intersection of Rosecrans Street and the connection of Sports Arena Boulevard to Pacific Highway. The Midway Community Plan also includes a number of freeway connector ramps and future street connections that were considered in the long range forecast. Because of the complex nature of the Sports Arena extension, the future year traffic model was run for conditions without and with the extension. Traffic model runs conducted for this project and the process by which the traffic volumes were post processed are included in Appendix 4-A (model plots) and 4-B (post processed volumes).



Exhibit 4-1

Connection of Sports Arena Boulevard through Rosecrans Street

Source: Midway Community Plan (1991)



ROSECRANS CORRIDOR MOBILITY STUDY

Transit Ridership Forecasting

For year transit operations, the SANDAG year 2030 Reasonably Expected transit network for the currently adopted Regional Transportation Plan (RTP) was used. The RTP reflects a number of service route changes that were included in the analysis of transit operations. These route changes are detailed in Appendix 4-C (Transit Study) and include:

- ❖ Route 28 is reconfigured with decrease in frequency
- ❖ Route 84 is eliminated
- ❖ Route 35 is reconfigured with increase in frequency
- ❖ Route 923 frequency increases from 30 minute to 15 minute headway
- ❖ Route 150 is replaced by Mid-Coast LRT (I-5 corridor Light Rail Transit line)
- ❖ Route 8/9 remains unchanged

Exhibit 4-2 illustrates the year 2030 transit routes for the project study area. In addition, there are several improvements to regional services that are planned for the Old Town Transit Center including increase in frequency on the Blue line and Green line (2010), increase in Coaster frequency (2020), new Mid-Coast LRT (2020) and increase frequency on bus routes 10 and 30 (2030).

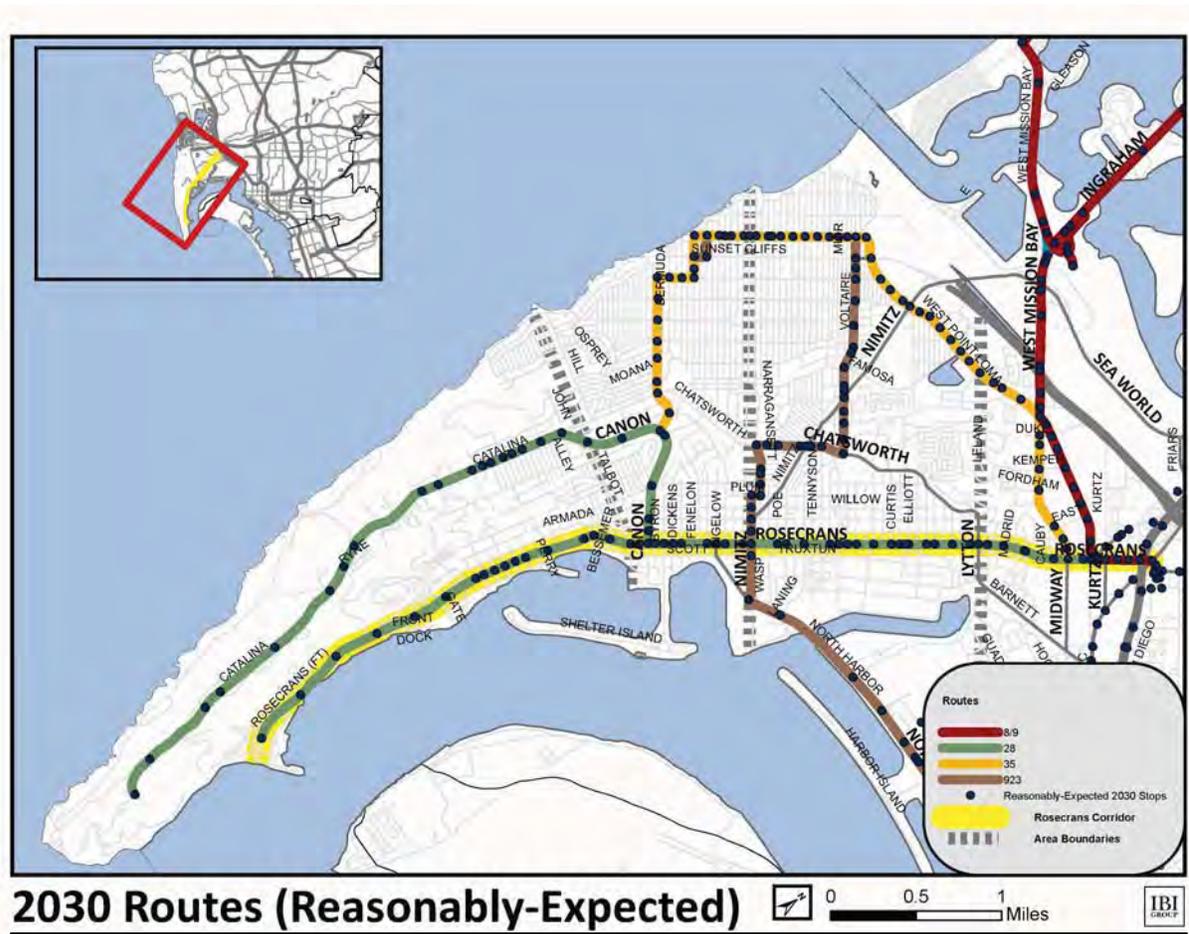


Exhibit 4-2



Pedestrian/Bicycle Demand Forecasting

Pedestrian and bicycle demand forecasting was based on three criteria:

- ❖ Forecast change in traffic volume
- ❖ Forecast change in transit ridership
- ❖ Planned improvements (by mode) within the study area

The first adjustment made to the pedestrian and bicycle data collected for the study area was the growth associated with traffic volume. This adjustment was made by approach and by intersection. The assumption employed was that there is a relationship between land use and traffic forecast that would also apply to pedestrian and bicycle activity in the area.

The second adjustment applied to the existing conditions count data was a growth factor associated with forecast increase in transit ridership. Surrounding existing and future transit stops, there is an expectation that with an increase in boardings and alightings there would also be an associated increase in pedestrian activity.

The third and final adjustment to existing conditions made was a growth factor that reflects the changes in patterns associated with new facilities. For example, improved sidewalks and/or extension of bicycle lanes may result in an increase in pedestrian and/or bicycle activity within the study area.

Standard factors growth factors developed for this study area were applied and summarized in Table 4-1.

Table 4-1.
Pedestrian and Bicycle Growth Adjustment Factors

Changes Triggering Count Adjustments	Ped Growth Factor	Bike Growth Factor
Adjacency to <u>transit stops</u> showing future transit ridership growth	25%	10%
Proximity to trip generating and attracting <u>land use changes</u>	10%	10%
<u>Bicycle facility</u> development	-	25%

Details of the pedestrian and bicycle forecasting methodology is provided as Appendix 4-D (Pedestrian/Bicycle Needs Assessment) to this report.

4.2 TRAFFIC OPERATIONAL ANALYSIS

Future year 2030 conditions are based on existing intersection configurations and roadway classifications, unless otherwise noted below:

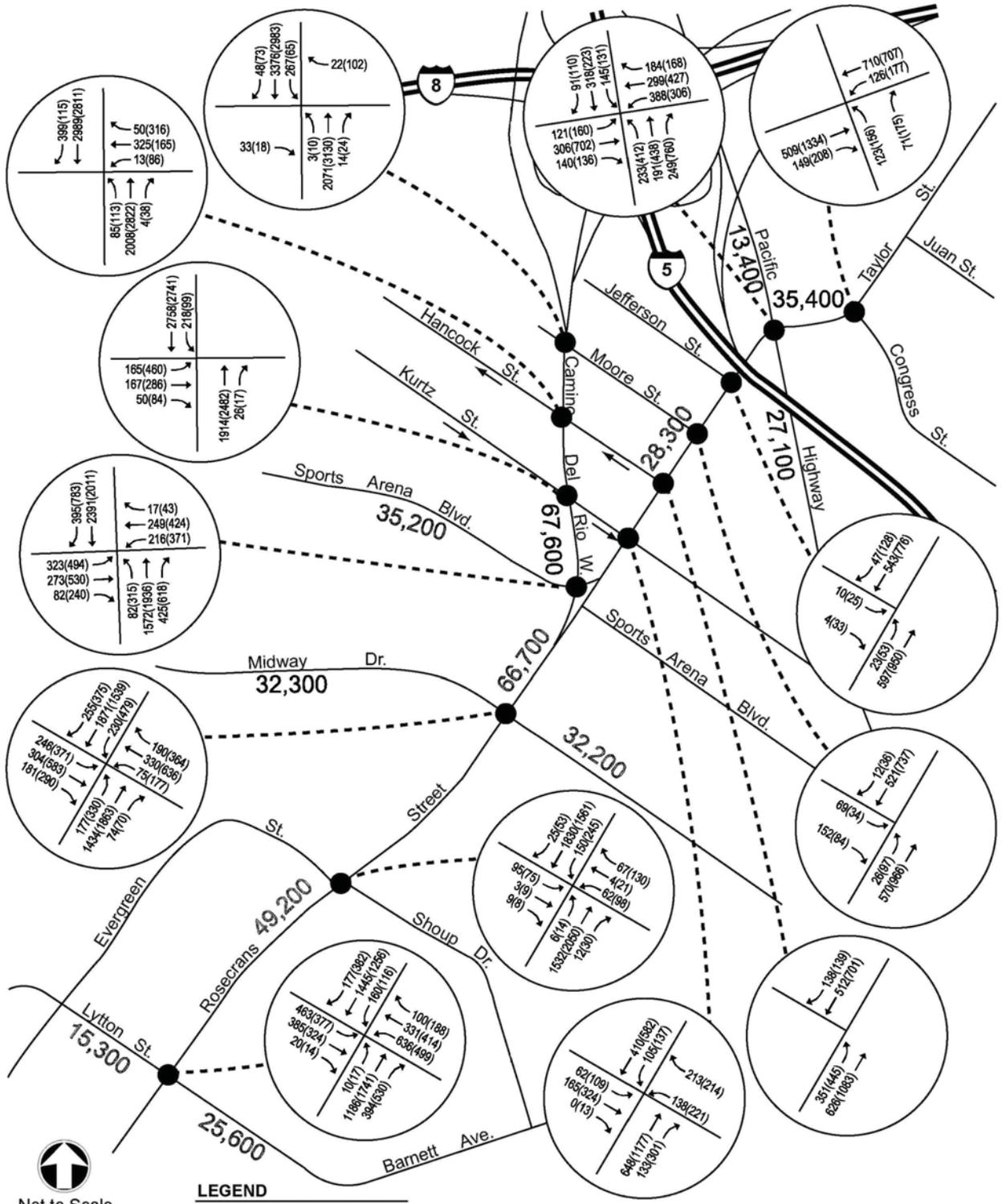
- ❖ Rosecrans / Midway: Construction of 2nd northbound left turn pocket and lengthening of existing southbound left turn pocket to be constructed in year 2010 by City of San Diego.
- ❖ Rosecrans / Nimitz: Eastbound right turn lane planned to be constructed in year 2010 by McMillin as part of the NTC development project.

Forecast year 2030 traffic volumes for roadway segments (daily traffic) and intersections (peak hour traffic) are summarized in Exhibits 4-3 through 4-5 for each of the study areas. Forecast year 2030 traffic volumes were evaluated using the City adopted level of service criteria outlined in the City's Traffic Study Manual. Volume to capacity ratios were calculated for each roadway segment and intersections were evaluated using the 2000 Highway Capacity Manual operational methodology for signalized and unsignalized intersections.

Results of the level of service analysis are summarized in Table 4-2 and 4-3. HCM analysis worksheets are provided in Appendix 4-E to this report. In addition, Exhibits 4-6 and 4-7 illustrate the level of service conditions for intersections and roadway segments, respectively.



Future Conditions Assessment



Not to Scale

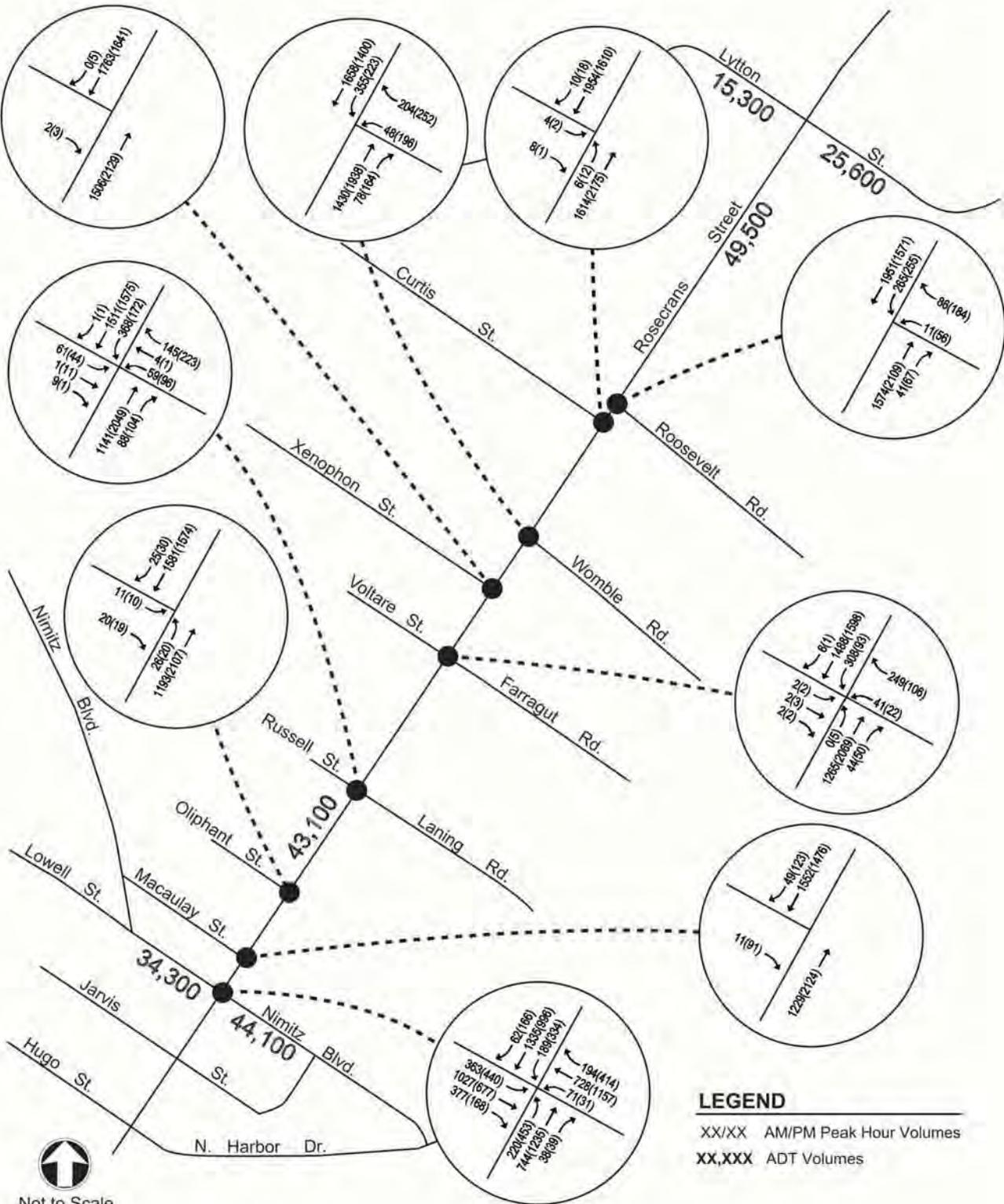
LEGEND
 XX/XX AM/PM Peak Hour Volumes
 XX,XXX ADT Volumes
 → One-Way Street



YEAR 2030 TRAFFIC VOLUMES (AREA 1)

Exhibit 4-3

ROSECRANS CORRIDOR MOBILITY STUDY



Future Conditions Assessment

Not to Scale



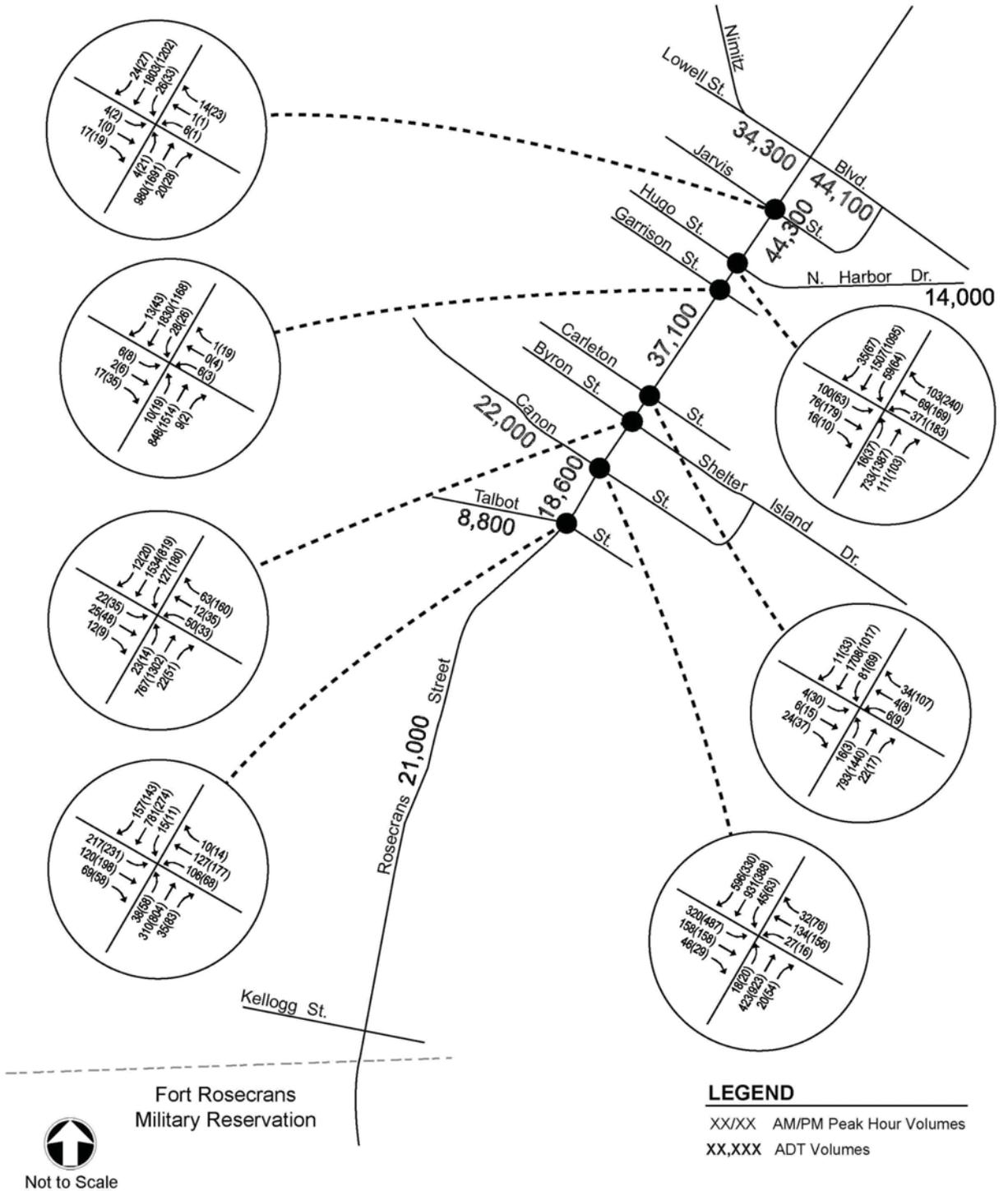
YEAR 2030 TRAFFIC VOLUMES (AREA 2)

Exhibit 4-4





Future Conditions Assessment



YEAR 2030 TRAFFIC VOLUMES (AREA 3 & 4)

Exhibit 4-5



ROSECRANS CORRIDOR MOBILITY STUDY

Table 4-2.
Year 2030 Roadway Segment Analysis Summary

Roadway	Segment	Class	Lanes	LOS E Capacity	Existing Conditions			2030 Base Network		
					ADT	V/C	LOS	ADT	V/C	LOS
Rosecrans Street	From Pacific Highway to Sports Arena Blvd.	Major	4	40,000	15,503	0.39	B	28,300	0.71	C
	From Sports Arena Blvd. to Midway Dr.	Major	6	50,000	59,120	1.18	F	66,700	1.33	F
	From Midway Dr. to Lytton St.	Major	6	50,000	46,384	0.93	E	49,200	0.98	E
	From Lytton St. to Roosevelt Rd.	Major	5	45,000	42,513	0.94	E	49,500	1.10	F
	From Roosevelt Rd. to Laning Rd.	Major	5	45,000	37,950	0.84	D	46,100	1.02	F
	From Laning Rd. to Nimitz Blvd.	Major	4	40,000	34,259	0.86	D	43,100	1.08	F
	From Nimitz Blvd. to N. Harbor Dr.	Major	4	40,000	36,450	0.91	E	44,300	1.11	F
	From N. Harbor Dr. to Canon St.	Major	4	40,000	34,390	0.86	D	37,100	0.93	E
	From Canon St. to Talbot St.	Major ⁽¹⁾	2	27,000	17,850	0.66	C	18,600	0.69	C
	From Talbot St. to Kellogg St.	Major ⁽¹⁾	2	27,000	15,200	0.56	B	21,000	0.78	D
Camino Del Rio	North of Hancock St.	Prime	7	70,000	55,300	0.79	C	77,300	1.10	F
	Hancock St. to Kurtz St.	Prime	7	70,000	54,400	0.78	C	71,600	1.02	F
	Kurtz St. to Sports Arena Blvd.	Prime	7	70,000	50,700	0.72	C	67,600	0.97	E
Pacific Highway	North of Rosecrans St.	Major ⁽²⁾	2	20,000	5,818	0.29	A	13,400	0.67	C
	South of Rosecrans St.	Prime	6	60,000	13,070	0.22	A	27,100	0.45	B
Sports Arena Blvd.	Northwest of Rosecrans St.	Major	5	45,000	26,780	0.60	C	35,200	0.78	D
	Northwest of Rosecrans St.	Major	4	40,000	27,130	0.68	C	32,300	0.81	D
Midway Drive	Southeast of Rosecrans St.	Major	4	40,000	29,440	0.74	C	32,200	0.81	D
	Northwest of Rosecrans St.	Major ⁽²⁾	2	20,000	11,797	0.59	C	15,300	0.77	D
Lytton Street	Southeast of Rosecrans St.	Major	4	40,000	19,650	0.49	B	25,600	0.64	C
	Northwest of Rosecrans St.	Major	4	40,000	17,264	0.43	B	34,300	0.86	D
Nimitz Boulevard	Southeast of Rosecrans St.	Major	4	40,000	12,020	0.30	A	44,100	1.10	F
	Rosecrans St. to Scott Rd.	Major	4	40,000	6,321	0.16	A	14,000	0.35	A
North Harbor Drive	Northwest of Rosecrans St.	Collector	2	15,000	12,870	0.86	D	22,000	1.47	F
	Northwest of Rosecrans St.	Collector	2	8,000	5,950	0.74	D	8,800	1.10	F

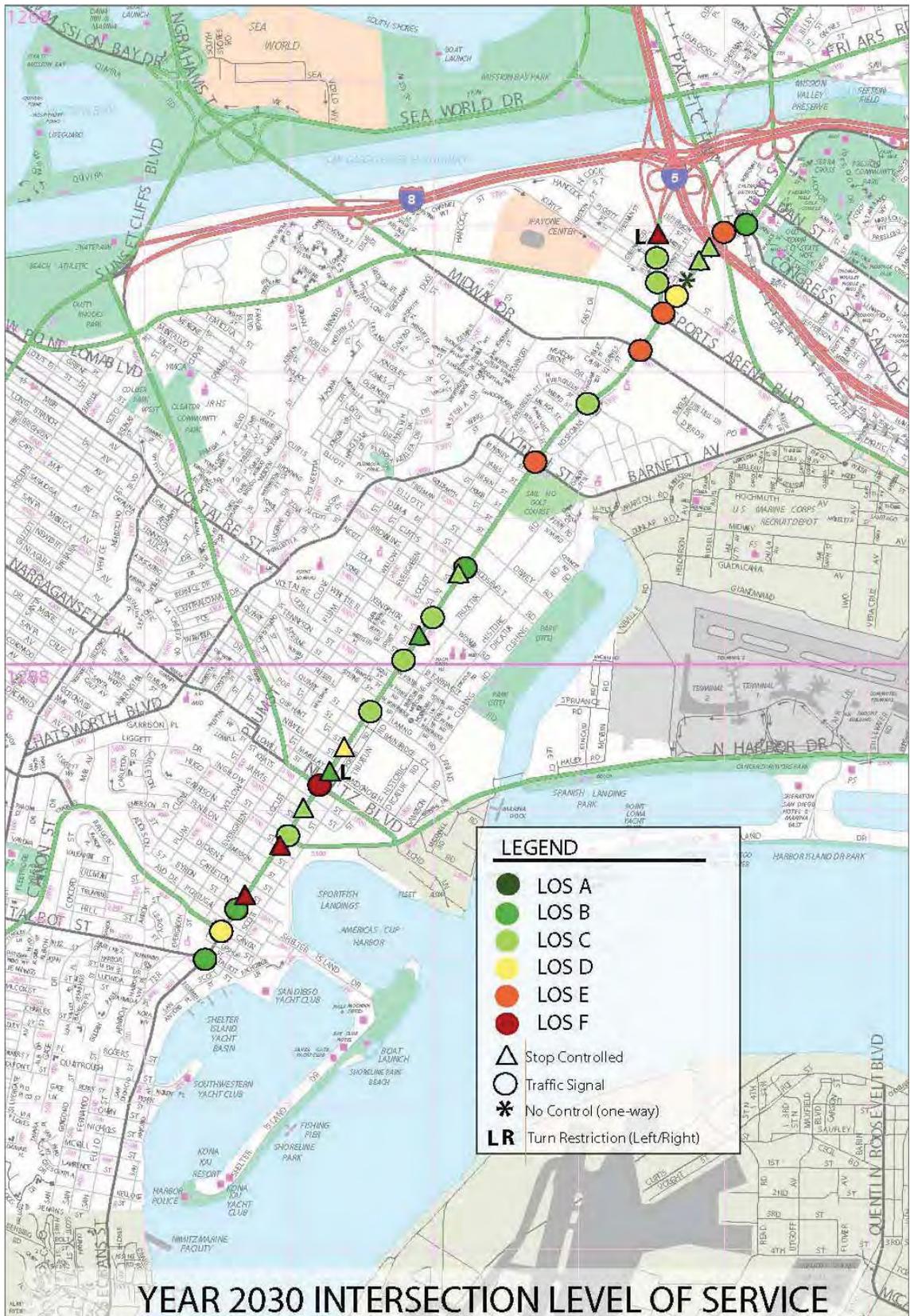


Table 4-3.
Year 2030 Intersection Operational Analysis Summary

	Intersection LOS	Traffic Control (1)	Existing (2009)				Future (2030)			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
2)	Rosecrans-Taylor St. / Pacific Highway	S	22.8	C	25.1	C	31.6	C	57.1	E
3)	Rosecrans St. / Jefferson St.	O	10.9	B	12.1	B	12.5	B	15.7	C
4)	Rosecrans St. / Moore St.	O	11.7	B	11.9	B	14.4	B	15.8	C
5)	Rosecrans St. / Hancock St.	(2)	8.6	A	9.4	A	11.7	B	17.0	C
6)	Rosecrans St. / Kurtz St.	S	15.3	B	25.4	C	20.4	C	52.3	D
7)	Rosecrans/Sports Arena/Camino D. Rio	S	23.3	C	35.5	D	43.0	D	62.9	E
8)	Rosecrans St. / Midway Dr.	S	37.0	D	60.0	E	41.5	D	68.2	E
9)	Rosecrans St. / N. Evergreen St.	S	15.9	B	30.3	C	20.7	C	30.7	C
10)	Rosecrans St. / Lytton St.	S	47.9	D	51.7	D	77.2	E	69.2	E
11)	Rosecrans St. / Roosevelt Rd.	S	10.3	B	13.3	B	11.3	B	16.2	B
12)	Rosecrans St. / Curtis St.	O	20.5	C	15.5	C	17.2	C	14.6	B
13)	Rosecrans St. / Womble Rd.	S	18.8	B	17.9	B	20.6	C	20.3	C
14)	Rosecrans St. / Xenophon St.	O	13.6	B	12.1	B	13.3	B	12.7	B
15)	Rosecrans St. / Farragut - Voltaire St.	S	20.7	C	18.1	B	23.5	C	21.8	C
16)	Rosecrans St. / Russell - Laning Rd.	S	17.0	B	23.2	C	18.1	B	25.9	C
17)	Rosecrans St. / Oliphant St.	O	22.6	C	14.1	B	28.2	D	19.7	C
18)	Rosecrans St. / Macaulay St.	O - R	12.0	B	13.0	B	13.2	B	14.2	B
19)	Rosecrans St. / Nimitz Blvd.	S	40.8	D	59.3	E	113.5	F	184.3	F
20)	Rosecrans St. / Jarvis St.	T	16.3	C	30.9	D	22.2	C	14.8	B
21)	Rosecrans St. / N. Harbor Dr.-Hugo St.	S	15.0	B	18.0	B	29.7	C	34.9	C
22)	Rosecrans St. / Garrison St.	T	79.6	F	133.6	F	185.4	F	305.7	F
23)	Rosecrans St. / Carleton St.	T	146.6	F	252.0	F	322.4	F	>1000	F
24)	Rosecrans St. / Shelter Island - Byron	S	13.3	B	16.7	B	10.3	B	15.4	B
25)	Rosecrans St. / Canon St.	S	23.0	C	20.1	C	33.5	C	45.7	D
26)	Rosecrans St. / Talbot St.	S	22.1	C	12.5	B	19.2	B	15.0	B
27)	Camino del Rio W. / Moore St.	T - R	31.5	D	30.6	D	71.3	F	65.0	F
28)	Camino del Rio W. / Hancock St.	S	10.9	B	13.2	B	29.2	C	31.4	C
29)	Camino del Rio W. / Kurtz St.	S	8.5	A	13.8	B	11.6	B	20.3	C

Future Conditions Assessed:

ROSECRANS CORRIDOR MOBILITY STUDY



Future Conditions Assessment

Exhibit 4-6

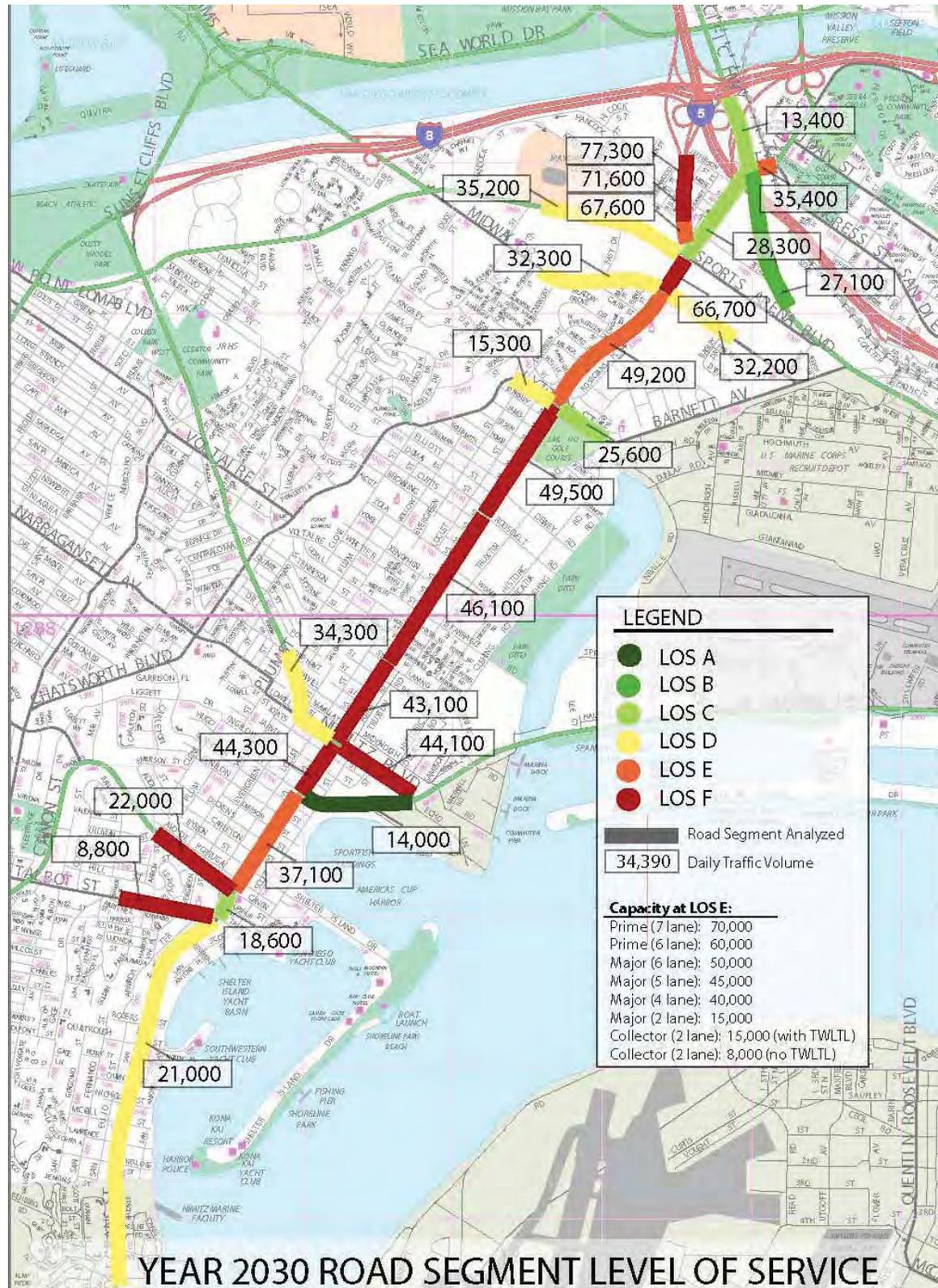


Exhibit 4-7

ROSECRANS CORRIDOR MOBILITY STUDY

Roadway Segment Analysis

Based on the roadway segment analysis conducted, the following segments are forecast to operate at LOS E or F by the year 2030:

Rosecrans Street

- ❖ From Sports Arena Blvd. to Midway Dr
- ❖ From Midway Dr. to Lytton St.
- ❖ From Lytton St. to Roosevelt Rd.
- ❖ From Roosevelt Rd. to Laning Rd.
- ❖ From Laning Rd. to Nimitz Blvd.
- ❖ From Nimitz Blvd. to N. Harbor Dr.
- ❖ From N. Harbor Dr. to Canon St.

Camino Del Rio

- ❖ Moore to Hancock
- ❖ Hancock to Kurtz
- ❖ Kurtz to Rosecrans

Nimitz

- ❖ Northwest of Rosecrans

Canon

- ❖ Northwest of Rosecrans

Talbot

- ❖ Northwest of Rosecrans

Intersection Operational Analysis

Based on the intersection analysis conducted, the following segments are forecast to operate at LOS E or F by the year 2030:

- ❖ Rosecrans / Pacific Highway
- ❖ Rosecrans / Sports Arena
- ❖ Rosecrans / Midway
- ❖ Rosecrans / Lytton
- ❖ Rosecrans / Nimitz
- ❖ Rosecrans / Garrison (unsignalized)
- ❖ Rosecrans / Carleton (unsignalized)
- ❖ Camino del Rio / Moore Street (unsignalized)



Travel Time Assessment

Under existing conditions, travel time was evaluated based on a floating car assessment. Using the results of the floating car assessment, a detailed traffic model was used to evaluate the potential travel times through Area 1, where travel times under existing conditions were determined to be the highest. Area 1 extends along both Rosecrans Street and Camino Del Rio from Lytton Street to Taylor Street (along Rosecrans) and Moore Street (on Camino Del Rio).

Table 4-4 presents the calibration results of the travel time assessment for existing conditions. As shown, the travel times used in forecasting the operations through Area 1 are within 10% of the existing conditions. The difference between actual travel time and modeled travel time was then used to further calibrate the results of the forecast year 2030 travel times. The results of the forecast year 2030 travel times are summarized in Table 4-5. As shown, the increase in traffic through year 2030 results in an increase in overall travel time along the corridor. This is attributable to the queuing through intersections, lack of signal coordination between intersections and weaving maneuvers between the intersections at Rosecrans-Sports Arena and Rosecrans-Kurtz.

Table 4-4.
Existing Calibration of Travel Time Analysis (p.m. peak period)

Travel Time	Direction of Travel	Existing Conditions ⁽¹⁾ (min:sec)	Simulated Existing Condition ⁽²⁾ (min:sec)	Difference
Rosecrans: Lytton to Taylor Street	NB	5:09	5:45	10%
	SB	6:47	6:28	5%
Rosecrans: Lytton to Camino del Rio/I-8	NB	4:15	4:34	8%
	SB	5:30	4:51	7%

Notes:

- (1) Measured in the field using a floating car survey methodology. A minimum of three travel time runs were conducted and averaged to determine the existing conditions p.m. peak period travel time for the segments studied.
- (2) VISSIM travel times based on three seeding cycles. Results of the model runs were averaged to determine the simulated travel time.

Table 4-5.
Forecast Year 2030 Travel Time Analysis (VISSIM Simulated for Both Conditions)

Travel Time	Direction of Travel	Existing Conditions	2030 No Build	Difference (seconds)
Rosecrans: Lytton to Taylor Street	NB	5:45	9:32	+3:47
	SB	6:28	8:26	+1:58
Rosecrans: Lytton to Camino del Rio/I-8	NB	4:34	9:23	+4:46
	SB	4:51	6:58	+2:07

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4.3 TRANSIT ANALYSIS

Based on SANDAG FY 2009 data, the Rosecrans corridor is responsible for 2,571 trips ends per day. By year 2030, the number of trip ends is anticipated to increase to 5,557 trip ends per day. The greatest increase is forecast to occur along Route 35, where trips ends are expected to increase by over 660%. The breakdown in trip ends by Route through year 2030 is summarized in Table 4-6.

Table 4-6.
Forecast Year 2030 Trip Ends

Route	Existing FY 09 Trip Ends	Projected 2030 Trip Ends	%Change
8/9	103	196	90%
28	1,654	2,227	35%
35	260	2,000	669%
84	369	0	-100%
923	185	1,134	513%
Total	2,571	5,557	116%

As summarized in the previous section of this document, ten segments along the Rosecrans corridor are forecast to operate at LOS E or F by the year 2030 according to the roadway segment operating conditions analysis. Similarly, by the year 2030, the number of intersections forecast to operate at deficient LOS increase from four to seven in the p.m. peak. These changes to traffic operations will have a direct impact on the operations of transit operations along the corridors. Slower run times and longer wait times for buses will result in impacts to bus on-time performance.

Key locations where considerations for improvements to transit access and operations include:

- ❖ Rosecrans St / Taylor Street (LOS F in p.m. peak)
- ❖ Rosecrans St. / Sports Arena / Camino Del Rio (LOS E in E in p.m. peak)
- ❖ Rosecrans St. / Midway St. (LOS E in p.m. peak)
- ❖ Rosecrans St. / Lytton St. (LOS E in a.m. & p.m. peaks)
- ❖ Rosecrans St. / Nimitz Blvd. (LOS F in a.m. & p.m. peaks)

Coupling the demand for transit based on ridership and changes to transit service in the study area with the forecast traffic flow conditions along the corridor, considerations for improving transit along the corridor warrant consideration.



4.4 PEDESTRIAN ANALYSIS

Using forecast methodologies outlined in the previous sections of this document, pedestrian and bicycle activity along the Rosecrans corridor is anticipated to increase by as much as 300 percent through some portions of the corridor. Detail forecast pedestrian activity is summarized in Appendix 4-D.

The following intersections are anticipated to have more than 100 pedestrian crossings during the peak a.m. or p.m. peak period:

- ❖ Rosecrans Street – Taylor Street / Pacific Coast Highway – 472 a.m., 418 p.m.
- ❖ Rosecrans Street / Hancock Street – 30 a.m., 211 p.m.
- ❖ Rosecrans Street / Kurtz Street – 105 a.m., 153 p.m.
- ❖ Rosecrans Street / Sports Arena-Camino del Rio – 138 a.m., 202 p.m.
- ❖ Rosecrans Street / Midway Street – 95 a.m., 223 p.m.
- ❖ Rosecrans Street / Womble Road – 121 a.m., 49 p.m.
- ❖ Rosecrans Street / Nimitz St. – 212 a.m., 255 p.m.
- ❖ Rosecrans Street / Carleton Street – 116 a.m., 79 p.m.

Based on 2009 pedestrian data, approximately 1,525 pedestrian crossings occur during the a.m. peak period (7:00 to 9:00 a.m.) and 2,105 occur during the p.m. peak period. By the year 2030, pedestrian activity is forecast to increase to 2,311 pedestrian crossings in the a.m. peak and 2,808 in the p.m. peak periods. The increase in pedestrian activity warrants further evaluation to ensure that pedestrian capacity on sidewalks is being met.

As discussed in the existing conditions reports, focus for future pedestrian improvements include locations with existing obstructions or missing sidewalks, locations with a history of pedestrian related accidents and locations with high transit activity. Specific improvements to address pedestrian access and walkability are discussing in future sections of this report.

4.5 BICYCLE ANALYSIS

The following intersections are anticipated to have more than 100 bicycle observed through the intersection during the peak a.m. or p.m. peak period:

- ❖ Rosecrans Street – Taylor Street / Pacific Coast Highway – 76 a.m., 149 p.m.
- ❖ Rosecrans Street / Kurtz Street – 45 a.m., 106 p.m.

Based on 2009 bicycle data, approximately 476 were observed during the a.m. peak period (7:00 to 9:00 a.m.) and 687 occur during the p.m. peak period along the Rosecrans Corridor. By the year 2030, bicycle activity is forecast to increase to 788 bicycle trips along the corridor in the a.m. peak and 1,091 in the p.m. peak periods.

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It should be noted that the highest bicycle activity along the corridor occurs in Area 1 along Rosecrans Street between the Old Town Transit Center and Sports Arena Boulevard. Through this section, there are currently no bicycle lanes and many of the sidewalks are discontinuous.

When reviewing the forecast bicycle volume for the study area, the east –west bicycle traffic (crossing Rosecrans Street) exceeds the north-south bicycle traffic (traveling along Rosecrans Street). Therefore improvements for bicycles should consider both the addition of bicycle lanes and bicycle loops (within the intersections for detection at signalized intersection) but also connections to regional bicycle facilities from the corridor such as the San Diego River Trail and future CycleTrack facilities.

4.6 SUMMARY AND RECOMMENDATIONS

Based on the analysis conducted, the critical circulation locations are:

- Area 1: Intersection delays and queuing, particularly in the northbound direction (eastbound direction) through the Camino del Rio-Rosecrans triangle from Midway to I-8 and Taylor Street, are the highest for the corridor. Traffic patterns indicate that this section serves primarily commercial trips from the residential areas as well as commuter trips accessing the freeway. Based on the high traffic volumes and speeds, there is a correlation to the accident data reports. As discussed previously, the highest number of accidents along the corridor occur through Area 1 with 288 accidents reported over a 10-year period. The majority of the accidents in this section are right-angle accidents and rear-end accidents. On-street parking is provided along sections of Rosecrans Street that have speeds measured at over 45 mph. Consideration should be made to remove the parking spaces along this portion of Rosecrans Street. By removing the parking through Area 1, bicycle lanes could be accommodated that would connect to the existing Class II bicycle lanes in Section 2.
- Area 2: Observations through Area 2 show that traffic maintains free flow speeds during the off-peak period. However, the operational analysis shows that during the p.m. peak hour the intersection of Rosecrans Street/Nimitz Boulevard operates at LOS E. The acceptable operating conditions could be attributed to the improvements installed with the NTC project. However, the roadway improvements that have benefited the east side (NTC) of Rosecrans Street have created circulation and access issues for the west side of the Rosecrans Street. For many of the side streets, access onto Rosecrans can be challenging. No signalized access is provided onto Rosecrans between Lytton Street and Womble Road. Although left turns can be made from many streets, peak hour observations have shown that it is difficult due to the width of the road, speeds of traffic and volumes of traffic through Area 2. Traffic circulation improvements along Rosecrans should consider modifying the existing medians to restrict some left turn access and modify traffic signals to accommodate both the east and west sides of Rosecrans Streets. Relative to non-motorized transportation modes, improvements through this area should focus on the east side of Rosecrans Street. Improvement considered should include widening



the existing southbound Class II bicycle lane to a minimum of 6 feet with an adjacent travel lane of 13 feet. This will help to create a buffer between the travel lanes and pedestrians along the east side of Rosecrans.

- Area 3: Through Area 3, the measured 85th percentile traffic speeds support a reduction in posted speed limit, which would result in speeds more appropriately suited to a walking environment. Side street levels of service measured through Area 3 indicate that delays to left turning traffic can exceed the acceptable thresholds. To enhance the village environment and improve the aesthetic quality of this section of the corridor, cross-section modifications should be considered. This may include reducing the travel lanes from four to two lanes. Detailed analysis of the potential for diversion should be conducted to determine the impact of potential capacity reduction strategies. However, reducing the number of travel lanes would provide ample space to provide on-street parking along Rosecrans as well as a Class II bicycle lane. Reducing traffic speeds to create pedestrian compatible environment, reducing capacity to improve parking and providing traffic calming features such as curb extensions will help enhance the walkability through the Village.
- Area 4: Measured 85th percentile speeds through Area 4 exceed the posted speed limit by more than 5 mph. Rosecrans is two lanes through this section with Class II bicycle lanes. As this is a residential neighborhood with fronting properties, physical measures to reduce speeds are recommended to address the high rates of speed. A traffic calming plan that compliments the classification of this road and the surrounding land uses should be developed to address the speeding through this section.

Chapter 5: Identified Corridor Mobility Issues

Reviewing the technical analysis of the corridor and the community concerns raised during the workshops, the project team identified a series of mobility issues in each of the four study areas. The mobility issues were then grouped into Key Areas of Interest where careful consideration was made for improving mobility. This chapter reviews the locations identified and summarizes the mobility concerns for each.

5.1 AREA 1 MOBILITY ISSUES

Area 1 extends from the Old Town Transit Center and the I-8 freeway ramps to Lytton Street along both Camino del Rio West and Rosecrans Street. Through this area, the community and technical analysis revealed that the movement of traffic is a high priority. This segment of the corridor is characterized by high commercial activity, high traffic congestion and driver confusion due to lack of or unclear signage. Long queues currently form at Midway Drive and Sports Arena Boulevard. The short spacing between the intersections results in complicated signal timing between the two intersections. During the peak hour, the signal timing at Midway Drive appears to control the flow of traffic along the corridor. When Midway Drive and Sports Arena Boulevard fall out of synchronization, the delays can result in multi-block queues both northbound and southbound. In some cases, these queues result in impacts to traffic on I-8 and I-5.

In addition to the dense commercial and industrial uses in Area 1, this area also serves as the gateway to the San Diego Sports Arena. With seats for 10,000 to 15,000, the Sports Arena can generate large volumes of traffic during special events. Access to the Sports Arena occurs via Midway Drive, Sports Arena Boulevard, Hancock Street and a number of other local roads throughout the North Bay/Midway Community.

Participants during the walk audits characterized this area as uncomfortable for the pedestrian and difficult to navigate. Pedestrians in this area can access the Old Town Transit Center and a number of civic resources including the County Mental Health facility on Rosecrans Street.

Overall, the following areas of interest were identified for alternatives analysis as part of this study:

Intersection Operations / Traffic Concerns:

- High Accident Rate at Camino del Rio West / Moore Street
- Extension of Sports Arena Boulevard through Rosecrans Street to Pacific Highway
- Intersection Delay and Queuing at Rosecrans Street / Midway Drive



Missing Sidewalks or Bicycle Lanes:

- Rosecrans Street from Old Town Transit Center to Sports Arena Boulevard
- Rosecrans Street from Midway Drive to Lytton Street

Transit Operational Improvements:

- Rosecrans Street / Pacific Highway Dedicated Transit Lane
- Future Delay and Congestion Affecting Transit Performance (Sports Arena, Midway, Lytton & Nimitz)

Parking

- High Traffic Speed on Rosecrans Street Conflicting with On-Street Parking (south of Evergreen)
- Regional Parking Facility to Encourage Park and Ride Activity for High Traffic Generators along the Corridor

5.2 AREA 2 MOBILITY ISSUES

Area 2 passes through the redevelopment area known as Naval Training Center (NTC)/Liberty Station. Rosecrans Street was recently modified to include a third through lane and raised medians through portions of the corridor. When the road was modified, on-street parking was eliminated from the corridor and bicycle lanes were narrowed to between four and six feet. This modification has raised concerns with residents who reside on the west side of Rosecrans Street. Suggestions were made during the workshops to remove the medians and restore parking, widen the bicycle lanes and/or provide Class I bicycle facilities on the east side of Rosecrans and improve access to the residences on the west side of the corridor.

Area 2 is also home to high traffic generating uses: High Tech High School and the Rock Church. Both uses were introduced into the neighborhood as part of the NTC/Liberty Station project. The traffic volume for these two uses has raised a number of traffic concerns amongst residents along the corridor. Suggestions of shuttling in students and/or parishioners were made at both Project Working Group meetings and Community Workshop.

During the walk audits, participants noted that the walking environment on the east and west sides of the street vary greatly. On the east side of the street, pedestrians are buffered by a landscape strip between the travel way and sidewalk. On the west side of the street, the vehicles travel immediately adjacent to the sidewalk buffered only by a narrow bicycle lane. Recent modifications to Rosecrans to provide the third northbound through lane moved the traffic closer to the sidewalk when the parking lane was removed.

Traffic volume and speed drop off dramatically south of Lytton Street, which is the northernmost portion of the corridor. However, traffic congestion is still present during the peak hours through much of Area 2 to the southern

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boundary at Nimitz Street. Key concerns identified as part of the technical analysis include high delays for vehicles on the side street turning left onto Rosecrans Street, limited visibility due to low hanging branches on recently planted trees, lack of marked pedestrian crossings, and the narrow bicycle lanes.

Overall, the following areas of interest were identified for alternatives analysis as part of this study:

Intersection Operations / Traffic Concerns:

- Traffic Delay to Vehicles on Side Street
- Intersection Delay at Nimitz Street
- Lack of Signalized Side Street Access from West Side of Rosecrans Street
- Peak Period Traffic During Special Events at Church and/or High School
- Pedestrian Access for School Age Students at/near High School.

Pedestrian Connectivity

- Lack of Marked or Signalized Crossings from Lytton Street to Roosevelt Street.
- Traffic Speeds Adjacent to Sidewalks in Southbound Direction

Transit Stop Locations:

- Relocation of Transit Stops Adjacent to Signalized Intersections to Reduce J-Walking

5.3 AREA 3 MOBILITY ISSUES

Area 3 is generally defined as the Village that serves the Point Loma community. The Village is characterized by the store front shops that line Rosecrans Street, the nearby Sports Fishing facilities and the access way to Point Loma, the Cabrillo National Monument and Naval Submarine Base. The San Diego Airport can be accessed through Area 3 via North Harbor Drive. Despite the numerous traffic activities in and around Area 3, the traffic volumes continue to decrease when compared to Areas 1 and 2.

The key issues to the community in Area 3 include improving the pedestrian walkability, creating a sense of place, reducing traffic speeds and maintaining traffic flow. The participants in the workshops were concerned that potential recommendations through Area 3 might reduce the traffic flow in favor of other modes or parking.

The technical analysis of Area 3 indicated that side street delays at key intersections exceed the acceptable levels based on existing traffic volumes, the lack of marked pedestrian facilities, the lack of bicycle lanes and associated bicycle facilities and parking.



Intersection Operations / Traffic Concerns:

- Traffic Delay to Vehicles on Side Street

Pedestrian and Bicycle Connectivity

- Lack of Marked or Signalized Crossings N. Harbor Drive to Shelter Island Drive
- Traffic Speeds Adjacent to Sidewalks in Southbound Direction
- Lack of Bicycle Lanes through Village

Transit Stop Locations:

- Relocation of Transit Stops Adjacent to Signalized Intersections to Improve Pedestrian Accessibility

5.4 AREA 4 MOBILITY ISSUES

Through Area 4, Rosecrans Street is flanked by single family homes with driveway access on both sides of the street. Parking is provided on both sides of the street and bicycle lanes are provided from Canon Street to the Naval Submarine Base. Although the land use through this area would suggest a residential classification for the road, traffic volumes and speeds along this portion of the corridor are influenced by traffic associated with the Navy Submarine Base. Morning commute volumes through Area 4 peak between 4:00 a.m. and 6:30 a.m., whereas a normal residential street would peak after 7:00 a.m. Similarly in the afternoon, the traffic volumes begin to peak at 3:00 p.m. and can continue until well into the evening commute period after 6:00 p.m.

Participants at the community outreach events raised concerns about the level of traffic associated with the sailors at the Navy base. Suggestions were made by the community to reduce Navy traffic by providing a shuttle. There were also concerns about traffic speeds, particularly during off-peak periods.

The technical analysis of Area 4 revealed that the traffic speeds exceed the posted speed limit through Area 4. Coupled with the lack of sidewalk and on-street parking, the technical analysis identified ways to reduce speeds during non-congested periods. Sight distance issues and accident rates through the curve near Armada Place and Kona Court were also a concern in the technical analysis of this portion of the corridor.

Intersection Operations / Traffic Concerns:

- 85th Percentile Speeds Exceed Posted Speed Limit by more than 5 mph
- Limited Line of Sight at Armada Place and Kona Court through "The Curve"

Pedestrian Connectivity and ADA Compliance

- Lack of Sidewalks Result in Pedestrians Walking in Parking Lane and/or Bicycle Lane
- Lack of Marked Pedestrian Crossings
- Inadequate or Missing Curb Ramps at Key Intersections

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- Traffic Speeds Adjacent to Sidewalks

Transit Stop Locations:

- Relocation of Transit Stops Adjacent to Marked Pedestrian Crossings
- Multiple Transit Stops with Little to No Transit Ridership Reported in 2008 and 2009

5.5 SUMMARY

Reviewing the technical analysis and input from the community during the first workshop and the Project Working Group meetings, mobility concerns were identified for the study corridor. The goal of the Rosecrans Corridor Mobility Study is to identify solutions to address these mobility concerns that can be implemented within a 20 year time frame. The improvements identified to resolve many of these mobility concerns shall be balanced with the overall needs of the corridor and should minimize impacts to right-of-way and existing structures. The improvements identified in this mobility study will not recommend or suggest land use changes, but may suggest that when properties in the study area are redeveloped, transportation improvements that benefit the community be considered. Longer range improvements that can be coupled with redevelopment are addressed as part of the overall Implementation Plan summarized later in this report. The details of the short to medium term improvements recommended to address the identified mobility issues are outlined in Chapter 7 of this report.



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ROSECRANS CORRIDOR MOBILITY STUDY

Chapter 6: Community Outreach

Community outreach was a key element in the development of alternatives for the Rosecrans Corridor Mobility Study. There were many ways in which the project team provided opportunities for the community to comment on the elements of the Concept Plans:

- **Workshops:** A total of three (3) workshops were conducted where the community was asked to participate in hands on problem solving activities and preference surveys.
- **Walk Audits:** A total of four (4) walk audits were conducted in the study area. Community members were invited to join the project team in walking tours of the corridor where they could participate in interactive discussions about pedestrian and bicycle issues in each of the study areas.
- **Project Working Group Meetings:** Monthly meetings were conducted with a Project Working Group where technical elements of the Mobility Planning Process were presented. The Project Working Group provided input on key elements of the plan as the process evolved. The public was invited to attend these meeting 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 Rosecrans corridor. The members of the Project Working Group were responsible for disseminating the information to their respective organizations through email distributions, announcements at monthly meetings and postings on their organizations websites.
- **Project Website:** Information about community workshops, Project Working Group meetings, concept plans and presentation materials were posted to the project website. The website also included an email link where community members could send their comments to the project team.
- **Coordination with Local Media:** The Peninsula Beacon and the Union Tribune were both contacted and kept apprised of the activity of the project. Articles pertaining to the project with links to the project website were published in the Beacon. Meeting notices were published in both newspapers prior to the workshops.

This chapter of the Rosecrans Corridor Mobility Study outlines in the input received from the community during the various community outreach events and describes how the input from the community helped shape the Rosecrans Corridor Mobility Study alternatives analysis.

6.1 COMMUNITY WORKSHOPS

Three community workshops were conducted over a six month period. The first workshop focused on identifying community concerns and identifying potential solutions for the corridor. The second workshop focused on presenting draft concepts to the community. During the second workshop, participants were provided the opportunity share their thoughts on the concept improvements through a preference survey. The third and final workshop was conducted to present the draft Preferred Concept Plan. At the third workshop, community members were invited to complete a

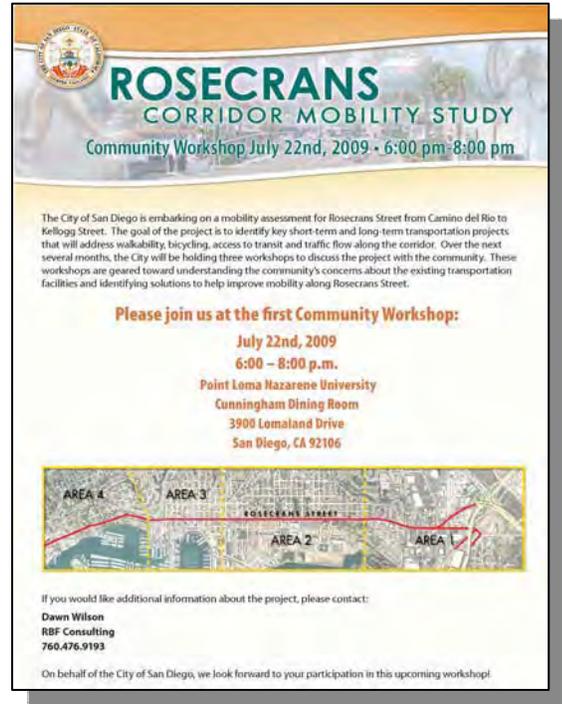


survey to share their thoughts on the elements of the plan. Appendix 6-A includes a print out of all presentations made during the workshops. The following sections summarize the results of the workshops conducted.

Kick Off Workshop: July 22, 2009 Point Loma Nazarene University

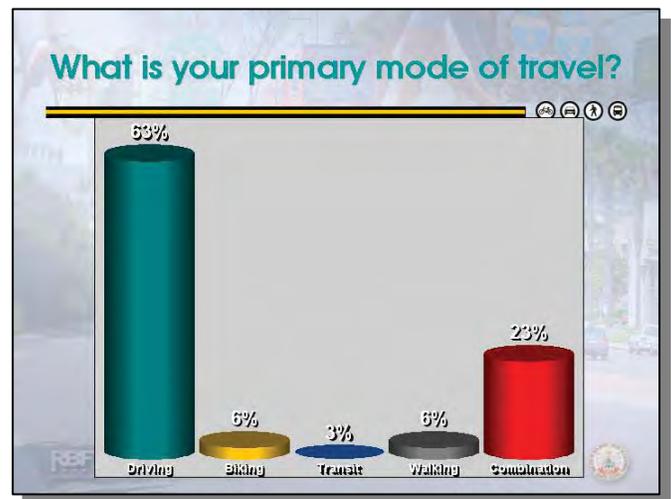
The first of three community workshops for the Rosecrans Corridor Mobility Study was held on Wednesday, July 22nd at the Cunningham Room at Point Loma Nazarene University. Approximately 45 participants attended in addition to City staff and the project team. Residents were notified through a flyer mailed directly to residents, email reminders, and advertisements in two local newspapers.

Three activities were presented during the course of the workshop. The first activity was a survey of participants inquiring about their concerns, interests, and modes of transportation around the neighborhood. The second activity was a Post-It note exercise where participants were asked to write down at least one concern and one idea on Post-It notes and place the notes on the wall. This exercise helped organize thoughts of the participants and educated the participants and the project team about shared and differing perspectives in the room. The third activity entailed participants clustering into small groups by study area, then discussing amongst themselves what improvements they want to see made or what issues they would like addressed.



Activity 1: Participant Survey

The first activity was a survey utilizing the hand-held devices provided to each willing participant. Survey questions were shown on PowerPoint and participants were provided with a series of answers coded by number. Questions were read aloud by the presenter and participants were asked to enter their answers by pressing the number on the hand-held device associated with the answer choice. Once all participants entered their individual answers, an instantaneous graph showed on screen to depict the percentages of each answer from the audience. The questions and percentage of survey results are summarized in Exhibit 6-1.



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Exhibit 6-1. Results of Survey

- "I classify myself as a:"
 1. Resident (14%)
 2. Property Owner (6%)
 3. Business Owner (9%)
 4. Combination of the above (71%)
- "I have live/worked in the area for:"
 1. Less than one year (3%)
 2. One to five years (14%)
 3. Five to ten years (11%)
 4. Over ten years (71%)
- "How did you learn about this workshop?"
 1. Flyer (49%)
 2. Neighbor or Friend (23%)
 3. Website (3%)
 4. Other (newspaper) (26%)
- "I am most interested in Area:"
 1. Area 1 – Taylor to Lytton (11.1%)
 2. Area 2 – Lytton to Nimitz (16.7%)
 3. Area 3 – Nimitz to Canon (5.6%)
 4. Area 4 – Canon to Kellogg (19.4%)
 5. All of the above (47.2%)
- "Area 1: I am most interested in:"
 1. Improved traffic flow (getting through faster) (80%)
 2. Pedestrian safety and linkages (5.7%)
 3. Increased Parking (0%)
 4. Transit improvements (0%)
 5. Bicycle improvements (8.6%)
 6. Reduced traffic speed (5.7%)
- "Area 2: I am most interested in:"
 1. Improved traffic flow (getting through faster) (65.7%)
 2. Pedestrian safety and linkages (5.7%)
 3. Increased Parking (0%)
 4. Transit improvements (2.9%)
 5. Bicycle improvements (11.4%)
 6. Reduced traffic speed (14.3%)
- "Area 3: I am most interested in:"
 1. Improved traffic flow (getting through faster) (52.9%)
 2. Pedestrian safety and linkages (11.8%)
 3. Increased Parking (5.9%)
 4. Transit improvements (2.9%)
 5. Bicycle improvements (11.8%)
 6. Reduced traffic speed (14.7%)
- "Area 4: I am most interested in:"
 1. Improved traffic flow (getting through faster) (37.1%)
 2. Pedestrian safety and linkages (17.1%)
 3. Increased Parking (0%)
 4. Transit improvements (2.9%)
 5. Bicycle improvements (5.7%)
 6. Reduced traffic speed (37.1%)
- "What is your primary mode of travel?"
 1. Driving (63%)
 2. Biking (6%)
 3. Transit (3%)
 4. Walking (6%)
 5. Combination of above (23%)
- "How often do you walk?"
 1. Daily (20%)
 2. Few times a week (20%)
 3. Few times a month (40%)
 4. Never (20%)
- "How often do you bike?"
 1. Daily (6%)
 2. Few times a week (0%)
 3. Few times a month (14%)
 4. Never (80%)
- "How often do you take transit?"
 1. Daily (6%)
 2. Few times a week (6%)
 3. Few times a month (14%)
 4. Never (74%)



Activity 2: Post-it Note Brainstorming Exercise

The second exercise was a Post-it note exercise where participants were asked to write their top concerns and ideas on separate Post-its and place them on the wall, labeled by study area. These comments were categorized and presented in Tables 6-1 through 6-5.

Table 6-1.
Area 1 Concerns & Ideas

CONCERNS:	IDEAS:
Pedestrian and bicyclist safety	Pedestrian bridge on Pacific Highway to Morena Blvd
Traffic and circulation around Old Town	Synchronize traffic signals
Odd geometry at Midway/Sports Arena	Midway one-way away from Rosecrans
Poor signage for Interstate 5	Reduce speed limits
Lack of bike lanes	Route traffic off Rosecrans too Barnet or Harbor Dr
	Traffic circle at Sports Arena or Midway/Barnet

Table 6-2.
Area 2 Concerns & Ideas

CONCERNS:	IDEAS:
Access from side streets	Remove landscaped median
Traffic congestion during Rock Church services, lunch hours, rush hours, and Sundays	Bus Rock Church visitors and employees of major businesses
Speed	Lower speed limits and increase enforcement
Traffic blocks emergency access	Speed bumps
Poor visibility / line of sight	
Population density is too high	Stop approving projects at Liberty Station
Southbound turn lane to Nimitz is missing from NTC project and third lane of Rosecrans from Russell to Nimitz	Install left turn arrow at Talbot/Rosecrans and Canon/Rosecrans
Keep Scott turn lanes as-is	Put bike lane on east side of Rosecrans without the parkway in front of sidewalk
Motorcycles speed over 60 mph	
Illegal u-turns in middle of road	Put in bike lane that buses can use without blocking traffic

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Table 6-3.

Area 3 Concerns & Ideas

CONCERNS:	IDEAS:
Condition of road (pot holes)	Shared parking in Old Town & Sports Arena
Emergency access and bike safety	Provide a bike lanes as pullover space for traffic when an ambulance needs to get through
Policy/Trust (city council members)	Transit/shuttle system
The navy surge	Speed enforcement
Worsening conditions along Rosecrans due to possible closing or narrowing of Harbor Drive	Adjust speed limit
	Install right-turn lanes where feasible
Close/relocate Rock Church	Open Truxton Road on Sundays

Table 6-4.

Area 4 Concerns & Ideas

CONCERNS:	IDEAS:
Speed: slower traffic at Talbot & Kellogg	Enforce speed limits/tickets
Reduce speeds	Separate Sports Arena exit to eliminate freeway queues
Accidents	Tunnel or elevated bypass from I-8 to south end (near Canon)
Access from side streets and driveways	Increase speed signs
Paving/potholes	Lower speed limit
Congestion/delay/rush hour traffic	Add speed limit signs from Talbot to Kellogg
Stop adding residences to Area 4. There is no way out in case of an emergency	Carpool or bypass lane from I-8 or Midway to Nimitz/Shelter Island
Increased traffic due to Rock Church and other large businesses in Liberty Station	Require carpooling for sub base
Stop densification and increased traffic	Ferry or shuttle from ASW school to end of Point Loma
Reduction in lanes on Harbor Drive will restrict traffic	Traffic metering
	Traffic calming/traffic circles, pop-outs
	Speed bumps
	Shuttle navy traffic from a central location near I-8 or from NTC to end of Point Loma
	Ferry to navy base from North Island-Coronado



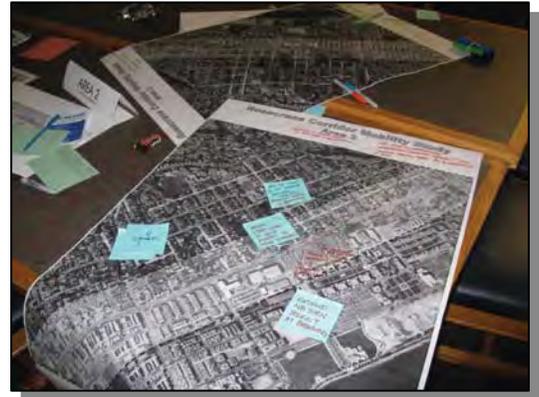
Table 6-5.
General Concerns & Ideas for Overall Corridor

CONCERNS:	IDEAS:
Access in Peninsula in case of emergency	Traffic calming (don't worry about congestion)
Speeding	Law enforcement
Traffic congestion	Time traffic lights to smooth flow
Truck traffic	Coordinate traffic lights
Traffic volumes	Sequence lights to impede speeders
Image/Aesthetics	Control speeds with enforcement, signage, and pavement markings
Ugly, wide street	Resident carpool lane/carpool incentives
Dangerous	Implement disincentives to drive
Lack of transit facilities	Get with military and have them charge for parking on the base
Crazy drivers, people rushing	Need mixed use on street
Dangerous to walk	Fix roads/streets
Pedestrian connections across Rosecrans	Add parkways and trees to boulevard (Sports Arena, Rosecrans)
	Rosecrans needs a facelift – store fronts, trees, shrubs, harmonized lighting
	Toll road from Talbot south for non-residents
	Continue the tunnel idea from North Island to Ballast Point
	New on/off ramp off Highway 5 to Lytton and two new entrances to NTC off Lytton
	Bypass Rosecrans using I-8 and Nimitz. Use single lane ramps connecting I-8 and Nimitz are Corea Jr High. Eliminate signals except Chatsworth, Rosecrans, and Laning/Harbor Drive. Connect I-8 and I-5 north.
	Mass transit incentives
	Improve transit stops – combine with stores and shops and cafes
	Bus shelters with maps and timetables
	Make public transit more acceptable, reliable
	Wider sidewalks and shorter distances to cross
	Make room for Class I bikeway or extra wide sidewalk with room for bikes
	Pedestrian connections: curb bulbs, bike lanes, wider sidewalks with parkways, marked crosswalks

ROSECRANS CORRIDOR MOBILITY STUDY

Activity 3: Small Group Mapping

The third activity included taking a closer look at the corridor. The corridor was divided into four sections, labeled Area 1, Area 2, Area 3, and Area 4. Additional tables were available for participants interested in the corridor as a whole. At each table, participants were provided with a map of the area, map of the entire corridor, markers, and comment cards. Participants were encouraged to share with others at the table to mark directly on the maps or comment cards with specific ideas and concerns.



A full summary of the comments received (maps and comments cards) during the mapping exercise are provided in Appendix 6-B.

Design Workshop – September 16, 2009 NTC Events Center/Liberty Station

The second of three community workshops for the Rosecrans Corridor Mobility Study was held on Wednesday, September 16th at the NTC Events Center in Liberty Station. Approximately 60 participants attended in addition to City staff and the project team. Residents were notified through a flyer mailed directly to residents, email reminders, website updates, and advertisements in The Peninsula Beacon newspaper.



The entrance to the workshop held a welcome sign, sign-in sheets, and participants were provided with hand-held devices for the survey exercises. Each of the four study areas were individually showcased in the corners of the event center. Each study area section included a map of the study area displaying the general areas of improvement with proposed concepts as well as a more specific concept plan with proposed improvements overlaid onto an aerial. Comment cards, workshop guides, and pens were provided to each participant to take notes and/or provide comments.

A presentation was given providing background on the corridor, project progress, and a brief review of existing conditions data that was discussed at the first workshop. Three activities were presented during the course of the workshop. The first activity was a survey of participants inquiring about their individual characteristics such as interest in each study area and preferred modes of transportation. After the first survey, a presentation about the potential improvements to each study area was given. Following the presentation, the second activity involved having the participants walk around the room to each study area station to understand each of the potential improvements up

Community Outreach



close. Once the participants walked through each station, they took their seats and participated in a final survey inquiring about their opinions on each of the proposed concepts.

Activity 1: Participant Survey

The first activity was a survey utilizing the hand-held devices provided to each willing participant. Survey questions were shown on PowerPoint and participants were provided with a series of answers coded by number. Questions were read aloud by the presenter and participants were asked to enter their answers by pressing the number on the hand-held device associated with the answer choice. Once all participants entered their individual answers, an instantaneous graph showed on screen to depict the percentages of each answer from the audience. Results of the Participant Survey are summarized in Exhibit 6-2.



Activity 2: Station Visits

Participants at the workshop listened to a short presentation that provided an overview of the various concepts developed for the Rosecrans Corridor. During the presentation, the participants learned about the key areas of interest and areas identified for mobility improvements.

During the second exercise participants had the opportunity to walk around the room and visit a series of stations that highlighted each of the four study areas. Each station included a general map of the overall improvements under consideration in the study area as well as more specific maps of the improvements at specific locations. Participants were encouraged to jot down their thoughts about the improvements both in the provided guidebook and on large flip charts provided at each station. Comments received at the stations are summarized below:\

Area 1 Comments

- Signal timing on Kurtz and Pacific Hwy – always traffic back-ups. Left turn from Kurtz to Rosecrans make southbound lane block intersection on traffic from Taylor
- Parking lot at transit center cannot handle cars – Lot A Old Town 90% empty, but transit riders banned from parking
- Close Moore St.
- Do not close Rosecrans – it's necessary!
- Do not close street in front of Dewey – this would impact traffic exiting Loma Square and heading southbound on Rosecrans
- Do not close Moore Street – this is an important route to get to Sports Arena & business north of the Sports Arena/Pacific Hwy
- Dangerous – people running across Rosecrans before Sports Arena rather than use lights. At night you can't see them and people coming off Hwy. 8 are at a fast speed
- Leave one of two left turns lanes from Rosecrans to Sports Arena west – lot of people make U-turn there to get back to shopping center

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- Do not close Moore St. median, it is the only way around. Rosecrans traffic via "Open" Pacific Hwy. turn Lytton to north NTC gate entry
- I like the idea of opening Sports Arena going through, but please consider leaving one lane open for left turn back onto Sports Arena

Area 2 Comments

- The raised median between Browning and Curtis already exists – don't lengthen it.
- Need bus turnouts on North side
- No bus turnouts!
- Take North & South bike lanes off Rosecrans (not safe); put bikes through NTC – nice path
- At Xenophan – northbound turn lane to turn left onto Xenophan – the shrubs are too tall to see! Dangerous.
- Flooding at Nimitz – storm drains not sufficient
- No medians – ambulances use that middle lane; EMT, Fire, any emergency vehicles often have to go against traffic to get off Point Loma
- Realigning intersection so they serve both sides is a great idea. Keep and expand the landscape medians.
- Put in light signal at Goldsmith – for both pedestrians & left turn (right turn) off Goldsmith
- Route buses down into NTC at Dumas – Stop at school, Naval housing and to sub base.
- There is not a hospital on Point Loma
- Private users (Church, BAE systems – new company moving in and Hotel or Amusement Park – vendors, employees, visitors oh, my) should provide their own shuttles for their own operations
- Jay walking across Rosecrans!
- Better lighting
- Need something between drive lane & bike lane (like in between drive lanes – bumps for awareness)
- Proposed medians will restrict access to Curtis, Freeman, and Ibsen impacting neighborhood access to/from Rosecrans.
- No parking @ Voltaire! People need parking
- Curtis & Browning need a trigger for the lights – good idea.
- Take out all medians through this section.
- Reconfigured intersection @ Zola & Dumas is such a good idea! – From resident who lives on Xenophan

Area 3 Comments

- No Median at Garrison (use for bypass).
- Loss of parking – concern
- Speed limit – good – consider real-time
- Not supporting new signal (unless synchronized); all signals need synchronizing
- Navy? – Metering?
- Restricted parking – be careful – relate to businesses
- Bikers use Scott Street (safer)
- Need origin/destination survey
- Reduce sidewalks



- No light at Emerson
- Hugo is three streets away
- No more medians. Will restrict emergency vehicle access!
- No removal of parking – businesses need it, no removal of lanes
- All improvements are a priority (not just one)
- Cross sections
- During the Townscan survey, participants wanted the option of “none of the above”
- Question regarding time-restricted parking: Will residents have to pay?
- Yes – there would be a cost for permit parking
- It would be enforced by parking enforcement

Area 4 Comments

- Provide a left turn lane where there are two through lanes at Talbot.
- Sidewalks – do not put on east side of street. Resident do not want them.
- Eliminate parking between Talbot and Canon, or provide two lanes during peak hours only (with parking allowed off-peak).
- Driveways are sloped, can't fit sidewalk; at Kona Way drainage is an issue.
- Curve is the only spot for u-turns.
- The homeowner at the curve suggested no changes except for reflective striping.
- “Your speed” signs needed at curve (northbound).
- If sidewalks go in, will utilities have to be redone?
- No roundabout at McCall - No roundabouts anywhere
- Chokers are dangerous for cyclists
- Difficult to enter Rosecrans from westside side streets

Activity 3: Preference Survey

After visiting each of the stations, participants were asked to provide specific input on elements of the mobility improvement concepts. Exhibits 6-3 through 6-8 summarize the results of the Preference Survey.

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Exhibit 6-3.

Results of Preference Survey for Elements included in Area 1

- “(Camino Del Rio & Moore Street) How do you feel about the median at Moore?”
 - Like (41.7%)
 - It's okay (13.9%)
 - Don't like (30.6%)
 - No opinion (13.9%)

- “(Sports Arena to Taylor) Which improvement do you like BEST?”
 - Bike lanes (2.8%)
 - Sidewalks/Street lights (36.1%)
 - Traffic signal (11.1%)
 - All (27.8%)
 - None (22.2%)

- “(Sports Arena to Midway) Which improvement do you like best?”
 - Bike lanes (5.6%)
 - Intersection improvements (27.8%)
 - Extending Sports Arena (22.2%)
 - All (13.9%)
 - None (30.6%)



- “(Sports Arena Extension) How important is this extension to you?”
 - Very important (14.3%)
 - Important (20.0%)
 - Neutral (17.1%)
 - Not important (14.3%)
 - No need (34.3%)

- “(Lytton to Sports Arena) How important are bicycle lanes?”
 - Very important (18.0%)
 - Important (18.0%)
 - Neutral (2.6%)
 - Not important (7.7%)
 - No need (53.9%)



Exhibit 6-4.

Results of Preference Survey for Elements included in Area 2

- "(Rosecrans/Womble and Rosecrans/Roosevelt) How do you feel about modifying these signals?"
 - Like (56.8%)
 - It's okay (27.0%)
 - Don't like (10.8%)
 - No opinion (5.4%)

- "(Roosevelt to Lytton) How should existing medians be modified?"
 - Narrow (5.0%)
 - Extend (12.5%)
 - Both (20.0%)
 - Do not modify (62.5%)

Exhibit 6-5.

Results of Preference Survey for Elements included in Area 3

- "(Nimitz to Shelter Island Drive) My top priority in Area 3 is:"
 - Walkability (8.1%)
 - Bike Lanes (5.4%)
 - Transit Access (8.1%)
 - Aesthetics (27.0%)
 - Parking (13.5%)
 - No Changes (37.8%)

- "(Nimitz to Shelter Island Drive) Which cross section do you like best?"
 - Option 1 (16.7%)
 - Option 2 (75.0%)
 - Option 3 (8.3%)

- "(Rosecrans/Emerson) Who will benefit the most from a new signal?"
 - Motorists (5.1%)
 - Pedestrians (20.5%)
 - Bicyclists (0.0%)
 - All (25.6%)
 - None (48.7%)

- "(Harbor Drive to Shelter Island Drive) Preferred Parking Restrictions?"
 - Time restricted (22.2%)
 - Residential permit (8.3%)
 - Both (19.4%)

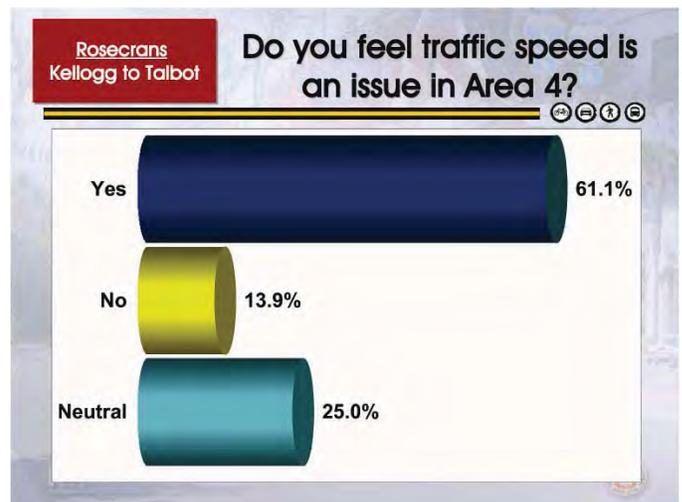
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- Do not change (50.0%)

Exhibit 6-6.

Results of Preference Survey for Elements included in Area 4

-
- “(Rosecrans & Talbot) Do you like this striping change?” (Provide left turn pockets at intersection)
 - Like (38.2%)
 - Okay (5.9%)
 - Don't like (47.1%)
 - No opinion (8.8%)
- “(Rosecrans & Curve, south of Talbot) Which curve improvements would you like further explored?”
 - Lighting (12.9%)
 - Realign road (16.1%)
 - Median (9.7%)
 - Parkway/Sidewalk (16.1%)
 - Flashing beacon (45.2%)
- “(Kellogg to Talbot) Should sidewalks in Area 4 be improved/completed?”
 - Yes, both sides should be completed (13.9%)
 - Yes, one side should be completed (30.6%)
 - No (55.6%)
- “(Kellogg to Talbot) Do you feel traffic speed is an issue in Area 4?”
 - Yes (61.1%)
 - No (13.9%)
 - Neutral (25.0%)
- “(Kellogg to Talbot) Would you walk or bike more if cars slowed down?”
 - Yes, walk (5.4%)
 - Yes, bike (2.7%)
 - Yes, both walk and bike (13.5%)
 - No (78.4%)
- “(Kellogg to Talbot) Which traffic calming feature do you like best?”
 - Mini roundabout (21.4%)
 - Curb extension with median (7.1%)
 - Mid-block choker (21.4%)
 - Curb extension with crosswalk (50.0%)

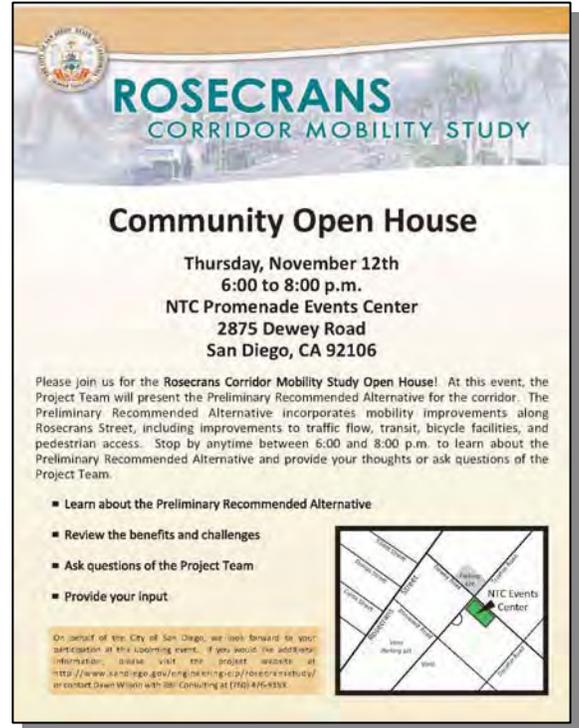




Open House – November 12, 2009 NTC Events Center/Liberty Station

The third and final community workshop for the Rosecrans Corridor Mobility Study was held on Thursday, November 12th at the NTC Events Center in Liberty Station. Approximately 100 participants attended in addition to City staff and the project team. Residents were notified through a flyer mailed directly to residents, email reminders, website updates, and advertisements in the Peninsula Beacon newspaper.

The entrance to the open house held a welcome sign and sign-in sheets. Each participant was provided with a guidebook and survey to complete as they walked through the room. Seven “stations” were set up with information: Station 1 provided information on the project background. Station 2 provided the overview of the entire corridor and outlined the concerns and goals for each study area, Stations 3 through 6 showcased the proposed improvements for Areas 1 through 4, respectively, and Station 7 showed the regional long-term improvements to the area provided by Caltrans.



Each of the study area stations included a brief PowerPoint presentation that played on an LCD screen to explain the concepts. A poster was also provided showing the existing and forecast Horizon Year 2030 peak hour and daily volumes. A large map of the study area displaying the proposed improvements and cross-sections overlaid onto an aerial consumed the majority of each station.



Improvements included in the Preliminary Recommended Alternative were shown on the large maps and were labeled with an alphabet letter that corresponded with the same letter on the survey form. Participants were asked to mark if they “like”, felt “neutral”, or “disliked” each concept. The guidebook and survey form are provided as an attachment.

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Station 5: Area 3 (Nimitz to Cañon)			Like	Neutral	Dislike
N	Re-stripe to Add 6' Bicycle Lanes	3	2	1	
L	Landscaped Medians & Left Turn Pockets at Intersections	3	2	1	
M	New Traffic Signal at Emerson	3	2	1	
O	Side Street Curb Extensions to Reduce Crossing Distance	3	2	1	
C	Relocation of Transit Stops to Signalized Intersections	3	2	1	
	(LONG TERM) Bicycle Boulevard on Locust	3	2	1	

Survey Results

A total of 93 surveys were submitted by the end of the open house. Not every survey question was completed on each survey. Therefore, the responses to each question were categorized into four categories. If a participant responded "like", "neutral", or "dislike", they were considered to have "responded". If no selection was made, it was considered as "no response". The results of the survey are provided in the table below.

Table 6-5.
Rosecrans Corridor Mobility Study Open House Survey Results

	Like	Neutral	Dislike	Total Responses	No Response
Area 1					
Moore Street Median	25 47.2%	10 18.9%	18 34.0%	53	40 (43.0%)
Sidewalks & Bike Lanes to Transit Center	29 52.7%	10 18.2%	16 29.1%	55	38 (40.9%)
Extension of Sports Arena	20 37.7%	11 20.8%	22 41.5%	53	40 (43.0%)
Rosecrans & Midway Intersection Imp	37 67.3%	7 12.7%	11 20.0%	55	38 (40.9%)
Bicycle Lanes on Rosecrans/Parking Removal	19 35.8%	7 13.2%	27 50.9%	53	40 (43.0%)
Long Term: Grade Separation	18 39.1%	9 19.6%	19 41.3%	46	47 (50.5%)
Long Term: Realignment	22 45.8%	11 22.9%	15 31.3%	48	45 (48.4%)
Area 2					
Modified Signals (Roosevelt & Womble)	33 55.0%	13 21.7%	14 23.3%	60	33 (35.5%)
Intermittent Medians & NB Left Turn Access	25 42.4%	14 23.7%	20 33.9%	59	34 (36.6%)
Wider Bicycle Lanes	16 26.2%	9 14.8%	36 59.0%	61	32 (34.4%)
Side Street Curb Extensions	18 31.0%	13 22.4%	27 46.6%	58	35 (37.6%)
Consolidation of Transit Stops	27 46.6%	16 27.6%	15 25.9%	58	35 (37.6%)
Long Term: Bicycle Boulevard	26 48.1%	4 7.4%	24 44.4%	54	39 (41.9%)
Area 3					
Stripe Bicycle Lane	11 22.0%	8 16.0%	31 62.0%	50	43 (46.2%)
Landscape Medians & Left Turn Pockets	15 31.3%	12 25.0%	21 43.8%	48	45 (48.4%)
New Signal at Emerson	24 48.0%	7 14.0%	19 38.0%	50	43 (46.2%)
Side Street Curb Extensions	17 34.0%	12 24.0%	21 42.0%	50	43 (46.2%)
Relocation of Transit Stops	26 52.0%	11 22.0%	13 26.0%	50	43 (46.2%)
Long Term: Bicycle Boulevard	23 52.3%	4 9.1%	17 38.6%	44	49 (52.7%)
Area 4					
Restripe Rosecrans & Talbot	32 51.6%	11 17.7%	19 30.6%	62	31 (33.3%)
Complete Sidewalks on West Side	27 40.3%	17 25.4%	23 34.3%	67	26 (28.0%)
Curb Extensions at Owen & Bessemer	14 22.2%	22 34.9%	27 42.9%	63	30 (32.3%)
Median Islands at Armada	13 21.0%	7 11.3%	42 67.7%	62	31 (33.3%)
Chokers at Qualtrough & Kona	12 19.4%	12 19.4%	38 61.3%	62	31 (33.3%)
Mini Roundabout at McCall	14 20.9%	6 9.0%	47 70.1%	67	26 (28.0%)
Consolidation of Transit Stops	26 42.6%	24 39.3%	11 18.0%	61	32 (34.4%)

Community Outreach



According to the 93 surveys received during the workshop, the following concepts liked by a majority of responding participants (greater than 50%):

- Sidewalks & Bike Lanes to Transit Center (many participants commented they supported the concept of the sidewalks but not the bicycle lanes)
- Rosecrans & Midway Intersection Improvements
- Modified Signals (Roosevelt & Womble)
- Relocation of Transit Stops (Area 3)
- Long Term: Bicycle Boulevard (Area 3)
- Restripe Rosecrans & Talbot

Concepts disliked by a majority of responding participants (greater than 50%) included:

- Bicycle Lanes on Rosecrans/Parking Removal (Area 1)
- Wider Bicycle Lanes (Area 2)
- Stripe Bicycle Lanes (Area 3)
- Median Islands at Armada
- Chokers at Qualtrough & Kona
- Mini Roundabout at McCall

Participants were provided the opportunity to provide written comments in addition to the survey questions on the preference survey form. The comments received are summarized in Appendix 6-C.

6.2 WALK AUDITS

A total of four walk audits were conducted during the initial phases of this project between August 2nd and August 5th. The Walk Audits aimed to engage community members in identifying pedestrian, bicycle and transit related issues along the Rosecrans Corridor.

The first of the four walk audits was designed to deepen the Project Working Group (PWG) members' understanding of the Corridor. This walk audit utilized a bus shuttle method to enable the PWG and City staff to walk and evaluate a portion of each of the four study areas. Twenty-three people attended the July 20 walk audit. The three additional community walk audits focused on active observation within one or two of the study areas. The following summary provides an



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overview of how the walk audits were conducted and the observations recorded by walk audit participants.

Walk Audit Format

Each of the walk audits opened with a brief orientation. Alta staff introduced walk audit participants to the purpose of the walk audit, distributed audit worksheets, walking route maps, clipboards and pens, and reviewed the questions provided on the worksheet



The image shows a 'Rosecrans Corridor Audit Worksheet' with five numbered sections for rating different aspects of the walkway. Each section includes a 5-point scale and a space for 'Observations/Locations of Problems'.

- 1. Rate the walking surfaces.** Are the sidewalks complete (no gaps), even and free of obstacles? Scale: 1 (Poor) to 5 (Excellent).
- 2. Rate the potential for pedestrian/motor vehicle conflicts.** Due to traffic speed and volume, large intersections, low pedestrian visibility and driveway crossings. Scale: 1 to 5.
- 3. Rate crosswalks.** Are crosswalks present and visible at key intersections? Do traffic signals provide adequate crossing time and acceptable crossing wait times? Are there curb ramps? Scale: 1 to 5.
- 4. Rate the overall walkability of the area.** Are the sidewalks wide enough? Are there buffers between you and traffic? Are there trees, benches or other amenities? Is the area visually pleasant? Scale: 1 to 5.
- 5. Rate access to transit stops.** How easy is it to cross the street to reach transit stops? Are transit stops spaced appropriately and close to the places you want to go? Scale: 1 to 5.

Facilitators then led community members along a 1 to 1.5 mile walking route selected to capture the primary character and key issues of that study area. During the walk audits community members shared their observations and thoughts about walking and biking along the audit route. The audit facilitators pointed out issues while walking and at designated observation stops to prompt audit participants to observe conditions and provide input. In addition to providing their own perspective, auditors were encouraged to consider how conditions might affect other users of the roadway, such as those with mobility impairments, children or inexperienced bicyclists.

Audit participants recorded their observations on the worksheets provided while walking. After completing the walking route, community members, Alta, RBF and City staff reconvened to finish completing their worksheets and to discuss highlights of the walk audits. At the conclusion of the auditing process all of the

worksheets were collected. The input obtained is being used to help inform the identification of bicycle, pedestrian and transit related improvement projects.

The following summaries synthesize the information recorded about each study area by the PWG and general community members during the four walk audits. A complete list of the walk audit summaries collected is provided in Appendix 6-D.

Study Area 1 Walk Audit (Midway)

The walk audit that focused on Study Area 1 was held from 4:30pm to 6:00pm on Thursday July 30, 2009. The team of auditors consisted of eight community members, one City staff person and two Alta facilitators. The group met at the Caltrans Building located at 4050 Taylor Street and walked southwest along a route that allowed the group to experience and observe segments of Taylor, Rosecrans, Kurtz Streets, Camino Del Rio West and Midway Drive. The PWG walk audit route within Area 1 began at the Old Town Transit Center and ended on the southeast side of the Rosecrans Street / Kurtz Street intersection. Along the walks, auditors observed key pedestrian and bicycle attractors – the Old Town Transit Center, the County Health Services Complex, transit stops and shopping complexes along



Rosecrans Street. Fifteen walk audit worksheets were completed by PWG and community auditors. In general, Area 1 received the lowest overall ratings from auditors compared to the other study areas.

For all pedestrian related questions, the majority of auditors rated the pedestrian environment 1 (poor - many problems) or 2 (some problems) on a scale of 1 to 5. Based on responses to questions relating to transit access, the groups had more moderate views of the conditions surrounding and accessibility of transit stops. Conditions for bicyclists were viewed as very unfavorable, with the vast majority of auditors selecting 1 (poor – many problems) as their answer to all bicycling related questions. Auditors discussed several major issues for pedestrians and bicyclists while walking, including:

- Insufficient lighting/intimidation under the I-5 overpass
- Missing and substandard sidewalk on the west side of Rosecrans Street in the northern part of Area 1
- Complicated intersections for pedestrians and bicyclists (particularly Rosecrans Street /
- Sports Arena Boulevard-Camino Del Rio West), due to roadway widths, multiple turn movements, long wait times, high traffic volumes, inattentive motorists
- Lack of bicycle facilities
- High percentage of bicyclists riding on sidewalks
- Transit stops lack shade and require cleaning

Study Area 2 Walk Audit (NTC-Peninsula)

The Study Area 2 walk audit was held from 9:45am to 11:15am on Sunday August 2, 2009. The team of auditors consisted of sixteen people, including one City staff person, two Alta, and one RBF facilitator. The group met at the NTC Command Center (2640 Decatur Road) and walked from the NTC Command Center to Rosecrans Street to walk a loop along Rosecrans Street between Roosevelt Road and Farragut Road. The portion of the PWG's walk audit that focused of Area 2 consisted of walking on the west side of Rosecrans Street beginning at the intersection of Rosecrans Street and Xenophon Street and ending at the NTC Command Center also via Roosevelt Road.



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During the Study Area 2 walk audit held on Sunday participants observed heavy vehicular traffic along Rosecrans Street and heavy pedestrian traffic around the Truxtun Road / Womble Road intersection where the Liberty Station shopping complex, High Tech High buildings, and Rock Church converge. Nineteen walk audit worksheets were completed by PWG and community auditors. Responses to pedestrian, bicycle and transit access related questions were mostly clustered in the middle of the rating scale, indicating a somewhat moderate view of the non-motorized travel.

The following key issues were however raised repeatedly by auditors while walking the audit route:

- Traffic congestion generated by Rock Church services
- Narrow bike lanes
- Lack of pedestrian buffer on the west side of Rosecrans Street versus a buffered and shaded experience on the east side of Rosecrans Street
- Bicycle/bus conflicts
- Long pedestrian crossing waiting times

Study Areas 3 & 4 Walk Audit

A walk audit focusing on Areas 3 and 4 was held from 4:00pm to 5:30pm on Wednesday August 5, 2009. The team of auditors consisted of seven people. The group met in the grass in front of the Starbucks Coffee at the intersection of Carleton and Rosecrans Streets and walked a loop that included a southern portion of Area 3 and a northern portion of Area 4.

Along the walks, auditors made note of both positive and negative aspects of the pedestrian environment in Area 3, such as the benefits of the sidewalk amenities and the difficulty of infrequent crosswalks. Accordingly, 3 (fair – one or two minor problems) was the most common rate selected by auditors in response to all pedestrian related questions on the audit worksheet. Another key discussion point was the distinction between the pedestrian infrastructure in Area 3 and in Area 4, the majority of which lacks sidewalks. Auditors' assessments of transit access were mixed with responses falling within the 2 – 5 range of ratings. Relative to walking and accessing transit, auditors considered bicycling in Areas 3 and 4 to be most problematic. The vast majority of auditors selected 1 (poor – many problems) or 2 (some problems) as their answer to all bicycling related questions.





Discussion points highlighted by auditors while walking include:

- Long distance between marked crosswalks in Area 3
- Some obstructions and missing curb ramps in Area 3
- Desirable street amenities in the Village portion of Area 3
- Lack of bicycle facilities in Area 3
- Lack of basic pedestrian infrastructure throughout Area 4
- High traffic speeds through Area 4 during non-peak periods and high volumes during peaks

6.3 PROJECT WORKING GROUP MEETINGS

The Project Working Group met monthly from 6:45 p.m. until 8:45 p.m. at the NTC Command Center. Meetings were open to the public and advertised on the project website. Meeting agendas were posted monthly along with approved meeting minutes and presentation materials from each meeting.

A total of 13 residents and business owners were nominated or appointed to serve on the Project Working Group. Representatives were acting board members or active participants in community organizations in North Bay-Midway, Old Town-Old San Diego and Peninsula. Organizations represented by the Project Working Group included:

- North Bay Community Planning Group
- North Bay Project Area Committee
- Old Town Planning Group
- Old Town San Diego Chamber of Commerce
- Peninsula Community Planning Board
- Peninsula Chamber of Commerce
- Point Loma Association
- La Playa Trail Association
- Point Loma People for Progress (P3)
- Three Residents at Large (appointed by the City Council Member's Office)
- Department of the Navy

Representatives of the Project Working Group were responsible for attending the monthly meetings, reporting information about the project to their representative organizations and distributing information about project related events to the community.

Topics discussed during the six months of meetings with the Project Working Group included:

- June: Identification of Corridor Concerns
- July: Walk Audit & Summary of Existing Conditions Analysis

ROSECRANS CORRIDOR MOBILITY STUDY

- August: Identification of Improvements Areas & Discussion of Alternatives
- September: Discussion of Community Workshop and Summary of Future Conditions Analysis
- October: Presentation by Caltrans on Long Term Project Improvements & Summary of Results of Community Workshop #2
- November: Summary of Third Workshop and Preference Survey of PWG on Final Concept Plan
- January: Presentation of Implementation Plan and Cost Estimates

A complete set of meeting minutes from the Project Working Group is provided in Appendix 6-E.

6.4 PROJECT TECHNICAL TEAM MEETINGS

The technical team, which was comprised of City staff, the consulting team and representatives from Caltrans, met on a monthly basis to discuss the technical analysis of the corridor. 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 issues within the study area. These meetings were also used to discuss the concerns raised by citizens and to identify solutions to issues that arose during the community outreach meetings.

6.5 PROJECT WEBSITE

Information about the project including flyers for community workshops, Project Working Group meetings and materials from the community events were posted on the project website. The website was hosted by the City of San Diego and updated on a weekly to bi-weekly basis dependant upon the events that occurred during the project.

The Rosecrans Corridor Mobility Study is a nine month project that aims to identify transportation improvements within the project study area. The goal of the project is to develop a plan that improves pedestrian access, bicycle facilities and accessibility, transit operations and facilities and traffic flow. During the project, an extensive evaluation of existing and forecast future operating conditions will be conducted for intersections and roadway segments between Taylor Street and Kellogg Street.

As this corridor is diverse in pedestrian activity, traffic patterns and community character, the corridor has been broken into four distinct zones:

(click map for a larger view)

- Area 1 (Midway) - Old Town Transit Station to Lytton Street
- Area 2 (NTC-Peninsula) - Lytton Street to Nimitz Boulevard
- Area 3 (Peninsula North) - Nimitz Boulevard to Canon Street
- Area 4 (Peninsula South) - Canon Street to Kellogg Street



Following the completion of the Walk Audits, self guided Walk Audit forms were posted on the website with a thorough explanation of how to conduct a personal audit. Individuals choosing to conduct the self-guided audit were asked to return their forms via email to the City or the project consultant. At the time this report was completed, no walk audit forms had been returned.

Walk Audits

If you were unable to attend the walk audits and would like to submit your comments, please take an hour or two to conduct a walk audit for one or more of the Rosecrans Corridor study areas.

First, select one of the following walk audit routes and read the walk audit worksheet instructions and questions. Next, start your walk audit at the location indicated on the walk audit route map and follow the walking path shown on the map. Stop at the 'observation points' and make notes of your observations or problems on the audit worksheet along the way. After you finish walking the route, complete the audit worksheet by rating the area based on the questions provided and recording any additional comments.

- [Walk Audits Flyer \(PDF\)](#)
- [Walk Audit Worksheet \(PDF\)](#)
- [Walk Audit Map for Area 1 \(PDF\)](#)
- [Walk Audit Map for Area 2 \(PDF\)](#)
- [Walk Audit Map for Areas 3 & 4 \(PDF\)](#)

Please send your completed audit worksheet to:

Dawn Wilson, Project Manager
RBF Consulting
5050 Avenida Encinas, Suite 260
Carlsbad, CA 92008

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The website also provided an opportunity for residents to submit requests for information and/or comments about the project. A total of nine (9) email responses were received through the website. Details of the community comments received are summarized in Appendix 6-F.

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Get Involved

The structure for community participation and development of the Mobility Study alternatives is a community driven approach, with many opportunities for the community to provide valuable input and assistance in shaping a consensus-based plan that reflects the community's unique combination of values, interests, and needs. The community is encouraged to voice his or her ideas or concerns at every public meeting, including the [community workshops](#) (PDF: 1.2Mb), [walk audits](#) (PDF: 204K), and all other [publicly-noticed meetings](#).

The Rosecrans Corridor Mobility Study includes an extensive public involvement strategy to ensure that the goals and policies in the plan reflect the priorities and concerns of the entire community. Specifically, the community participation framework integrates mechanisms for interaction and feedback with the surrounding communities and a variety of decision-makers. These include (1) the adjacent communities including the Old Town, Midway, and Peninsula communities, (2) the [Project Workshop Group \(PWG\)](#), and (3) the City of San Diego and the City Council. At the Project Working Group meetings as well as community workshops, community members are included in the discussion and deliberation of meeting topics.

Community Open House
Thursday, November 12, 6:00 - 8:00 p.m.
NTC Promenade Event Center
2875 Dewey, San Diego, CA 92106
[View the Community Open House Flyer \(PDF\)](#)

Comments?

[Submit a Comment Online](#)

or contact
Dawn Wilson
RBF Consulting
Project Manager
(760) 476-9193

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ROSECRANS CORRIDOR MOBILITY STUDY

6.6 LOCAL MEDIA COORDINATION

The project team coordinated directly with the local media to both inform the community about the project as well as provide information about upcoming meetings. Multiple articles were written by the Peninsula Beacon regarding the project and news briefs were published for each of the three workshops conducted.

News Briefs 11/5/09
by STAFF

2 months ago | 72 views | 0 | 1 | | |

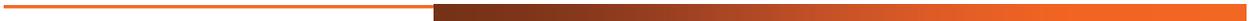
Last workshop Nov. 12 on Rosecrans traffic study

The Peninsula community has one last chance to provide input into the Rosecrans Corridor Mobility Study in a formal workshop setting. The third and final public workshop connected with the study will be held Thursday, Nov. 12.

During the workshop, the city will present a recommended alternative for mobility improvements in the car-clogged corridor. The alternative incorporates a variety of proposed improvements along Rosecrans Street. Representatives from the city and the consultant team will be in attendance to get public input and to answer questions.

The two previous workshops were held in July and September. The mobility study is a nine-month project that aims to identify transportation improvement on Rosecrans Street from Interstate 5 to Kellogg Street, with the goal of creating alternative transportation methods along the corridor.

The workshop will be held Nov. 12 at the NTC Promenade Event Center at 2875 Dewey Road from 6 to 8 p.m. For more information, call project manager Oscar Valdivieso at (619) 533-3182, or visit www.sandiego.gov/engineering-clp/rosecransstudy/.



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Community Outreach



Chapter 7: Elements of the Mobility Plan

The elements of the Mobility Plan were developed based on the technical analysis summarized in Chapters 3 and 4, as well input from the community, as discussed in Chapter 8 of this document. The goal of the Mobility Plan is to improve the quality of the transportation system through the study area. Focusing on all modes of transportation, areas key areas of interest were identified throughout the study area.

Summarizing the results of the Identification of the Mobility Issues (Chapter 5), key areas of interest were identified. Exhibits 7-1 through 7-4 illustrate the areas where improvements for the corridor focused. This chapter identifies the recommended improvements for these focus areas and alternatives considered at each location. Improvements are summarized both by mode as well as by location. A total of 19 improvements are included in the Recommended Mobility Plan. Not all elements of the Recommended Mobility Plan received positive input from the community. Input from the community at the final workshop and recommendations by the Project Working Group are included in the summary of each element of the plan discussed in this chapter.

7.1 Pedestrian Improvements

Each mode of transportation will benefit from the many elements identified as part of the Mobility Plan. Elements of the plan that will improve the pedestrian connectivity and walking environment include:

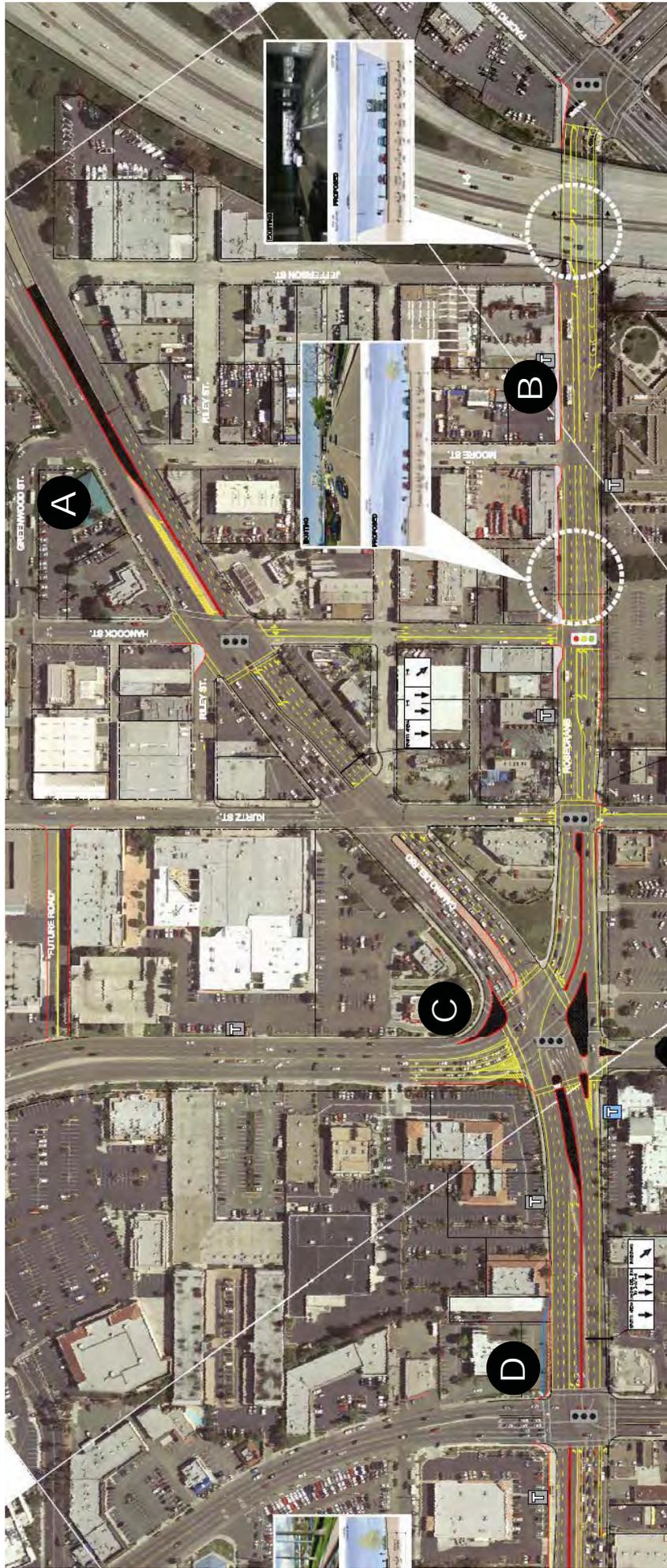
- New Sidewalks
- New or Improved Curb Ramps to Meet Current ADA Standards
- Improved Access at Existing Signalized Intersections by Striping or Redesigning Crosswalks
- Curb Extensions at Key Intersections to Reduce Turning Speeds of Vehicles and Reduce Pedestrian Crossing Distances
- New Traffic Signals with Pedestrian Indications and Crosswalks
- Traffic Calming in Area 4 to Reduce Speeds and Reduce Crossing Distances

Pedestrian improvements identified include the completion of sidewalks between the Transit Center and Rosecrans-Sports Arena in Area 1. Through this section, new curb extensions are identified that would reduce the crossing distance for pedestrians and new curb ramps are proposed at several locations. In Areas 2 and 3, curb extensions are also proposed along the side street. Through these areas, curb extensions are intended to buffer the pedestrian and reduce crossing distance as well as reduce the turning speed of vehicles from Rosecrans onto the side streets.

To improve access in Area 3, a new traffic signal is proposed at Emerson Street. With the new traffic signal, new curb ramps would be constructed and crosswalks would be striped across all legs of the intersection. The new traffic signal would be equipped with pedestrian WALK/DON'T WALK indications and push buttons on all approaches.



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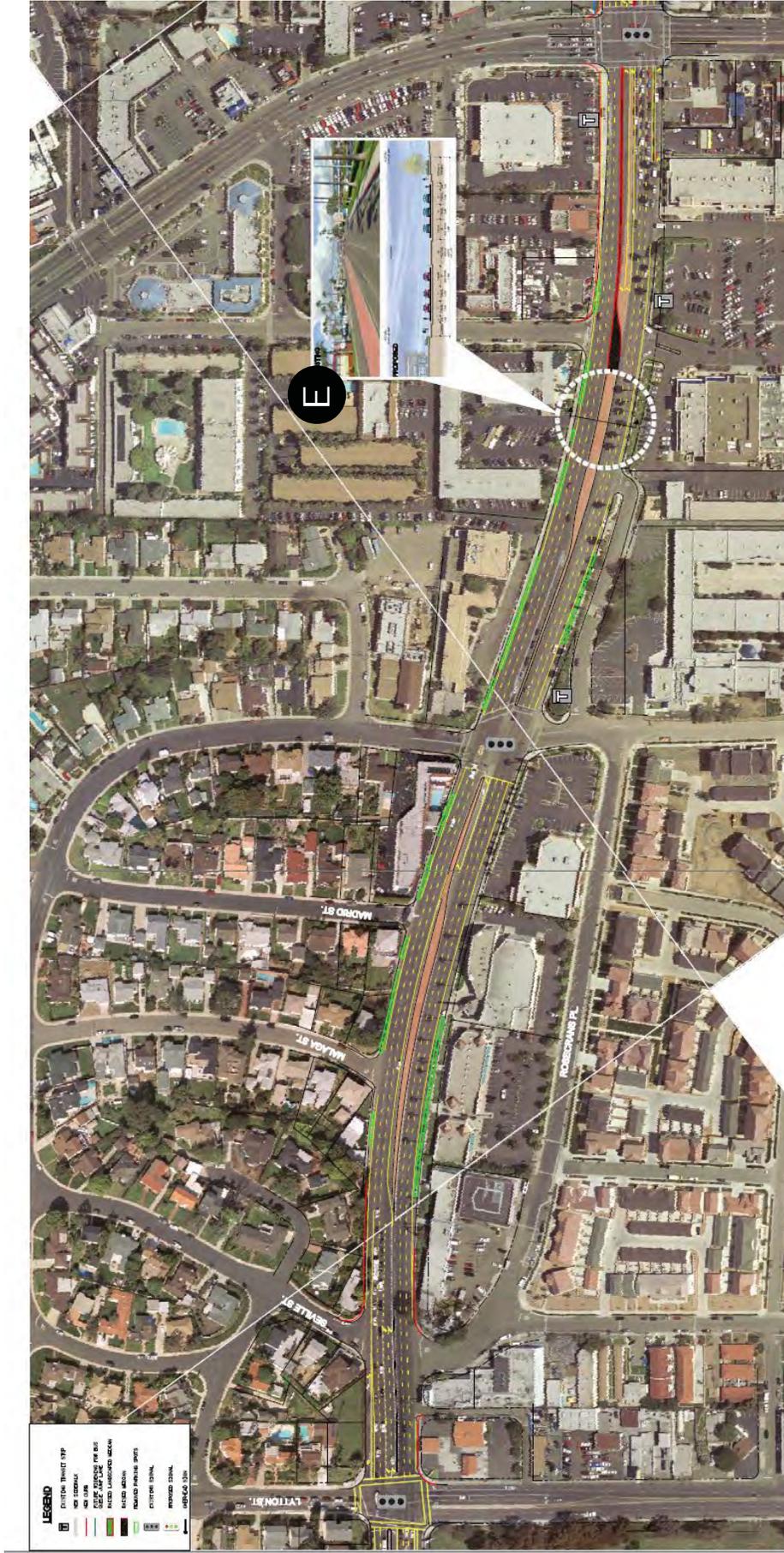
ROSECRANS CORRIDOR MOBILITY STUDY

Recommended Concept Plan

Area 1 (Sheet 1 of 2)

Exhibit 7-1





ROSECRANS CORRIDOR MOBILITY STUDY

Recommended Concept Plan
Area 1 (Sheet 2 of 2)

Exhibit 7-1





ROSECRANS CORRIDOR MOBILITY STUDY

Recommended Concept Plan

Area 2 (Sheet 1 of 3)

Exhibit 7-2





ROSECRANS CORRIDOR MOBILITY STUDY

Recommended Concept Plan

Area 2 (Sheet 2 of 3)

Exhibit 7-2





ROSECRANS CORRIDOR MOBILITY STUDY

Recommended Concept Plan

Area 4 (Sheet 1 of 2)

Exhibit 7-4





In Area 4, traffic calming devices have been identified that aim to reduce traffic speeds and create a residential street feel on Rosecrans Street. Curb extensions, medians, chokers and a mini-roundabout are designed as a comprehensive traffic calming plan. In combination with new sidewalks, the elements of the traffic calming plan will improve pedestrian access and the walking environment south of Talbot Street.

7.2 Bicycle Improvements

Currently, there are bicycle lanes (Class II) in Area 2 (Lytton to Nimitz) and Area 4 (Talbot Street to Navy Submarine Base). The City of San Diego Bicycle Master Plan calls for bicycle lanes on Rosecrans Street from the Old Town Transit Center to the Navy Submarine Base. To accomplish this improvement, much of Rosecrans Street can be re-stripped within the existing right-of-way and would have not impact to existing property or traffic flow. Therefore, the Rosecrans Corridor Mobility Study includes the striping of bicycle lanes in both Area 1 (Old Town Transit Center to Lytton Street) and Area 3 (Nimitz to Canon). Existing on-street parking in Area 1 would need to be removed from approximately Evergreen Street to Lytton Street). In Area 3, bicycle lanes can be striped along the curb with no impact to the existing striping or access to businesses.

Several participants in the community outreach events recommended Class I type facilities be implemented in the area and/or bicycle be removed from Rosecrans to aid in the flow of traffic. California Vehicle Code states that bicycle have the right to share the road with motor vehicles and are subject to the laws outlined by the State of California. Therefore, bicycles cannot be prohibited from traveling along Rosecrans Street. Class I facilities were considered to encourage bicyclists to take an alternate route, but lack of available right-of-way along the corridor and the number of streets and driveways along Rosecrans made the implementation of a Class I facility infeasible.

Future consideration for bicycle boulevards parallel to Rosecrans Street may be an option to consider with future studies of the corridor. Bicycle boulevards favor the bicyclist over the passenger vehicle and would require a detailed assessment of neighborhood circulation before consideration for implementation could occur.

7.3 Transit Improvements

The Mobility Study identified a number of transit stops along the corridor that would be more accessible to pedestrians if relocated. Relocation of transit stops is recommended to couple the transit stop with signalized intersections. This helps to reduce j-walking as well as improve access for the pedestrian. Spacing of transit stops was also considered. Several stops along the corridor are recommended to either be removed or consolidated due to low transit ridership and/or proximity to an adjacent stop.

In Area 1, the existing bus queue jump lane is recommended to be extended. The extension will allow buses to pass the already lengthy queue that develops eastbound on Rosecrans approaching Pacific Highway. The queue jump lane intersects with Pacific Highway and allows buses priority when entering the Old Town Transit Center immediately east of Pacific Highway. In the future, MTS is planning on modifying access for both buses and pedestrians near the rail crossing at Rosecrans-Taylor Street immediately east of Pacific Highway.



Also in Area 1, curb improvements are identified for the northwest corner of Rosecrans Street and Pacific Highway. The improvements realign the curb to both reduce pedestrian crossing distance at Pacific Highway, a key pedestrian linkage between the transit center and the study corridor.

In the long-term, the Mobility Plan includes consideration for transit priority at key intersections such as Midway, Sports Arena and Nimitz. If redevelopment in the area occurs, then additional right of way to provide queue jump lanes should be considered. Forecast traffic volumes, delays and queue lengths suggest

7.4 Recommended Improvements by Location

As discussed previously, a total of 22 key areas of interest were identified in the study area. The improvements identified are labeled A through V and range from pedestrian related to traffic related improvements. For each location, a discussion of the following is provided:

- Discussion of the concerns and issues
- Design elements of the proposed improvement
- What the proposed improvement aims to resolve or improve
- Alternatives considered
- Potential impacts
- Community Input (Project Working Group and Workshop Participants)

A. MOORE STREET MEDIAN CLOSURE

Discussion: The intersection of Moore Street / Camino del Rio is currently unsignalized. Over the past 10 years 45 accidents, including one fatality, has occurred at this intersection. In the a.m. peak hour, over 250 vehicles turn southbound onto Moore Street. The intersection is located at the end of the I-8 freeway ramp where vehicles approach the intersection at upward of 45 to 55 mph. Signage has been placed in advance of this intersection from multiple directions to attempt to restrict traffic maneuvers approaching the intersection. However accident data, traffic volume data, and community concerns suggest that the signs are not sufficient to prevent unsafe or illegal maneuvers at this intersection.



ROSECRANS CORRIDOR MOBILITY STUDY

Elements of the Proposed Improvement:

- Construct raised median and restrict access at Moore Street to right turn in and right turn out on northbound and southbound approach.
- Construct southbound left turn pocket at Hancock Street. Provide protected left turn phasing and allow u-turns on southbound approach.
- Allow two-way traffic on Hancock Street between Camino Del Rio and Rosecrans.

What will the improvement resolve: The proposed improvement will restrict left turn access on all movements at the intersection thereby reducing the potential for accidents. Left turns and u-turns will be permitted at Hancock (signalized intersection) to offset the impacts associated with closing the median.

Alternatives Considered:

- Slip nose median: This alternative would provide a left turn pocket southbound onto Moore Street but block access across Camino del Rio. Although a potentially feasible solution, the distance needed to provide for the slip nose median may encroach into the gore point on the southbound approach from I-8. This improvement would require significant coordination with Caltrans and potentially affect the ramp. Therefore, this alternative was not selected.
- Delineators along I-5 Ramp to prevent weaving: This alternative would allow for all existing movements to remain unchanged, but would restrict the ability for vehicles entering Camino Del Rio from I-5 to weave across the I-8 traffic lanes to access Moore Street. Although a potentially feasible solution, the introduction of delineators would reduce the weave distance to closer to Hancock Street. Based on the speed of traffic and density of vehicles the full distance between the existing gore point and the Hancock intersection is needed to make the desired left turn onto Hancock Street. Shortening this distance would greatly impact the traffic flow on Camino del Rio. Therefore, this alternative was not selected.
- Do Nothing: By year 2030 traffic volume along Camino Del Rio is anticipated to increase by 33%. As a result, the potential for accidents also increases. Making no change to this intersection would continue to put drivers on this southbound approach of Camino Del Rio at risk. Therefore, the "Do Nothing" alternative was not selected.

Potential Impacts: The proposed change will result in an increase in left turning and u-turning traffic at Hancock Street and will result in a change in access for some businesses in the study area.

Community Input:

- Project Working Group: 90.0% approve
- Workshop #3 Preference Survey: 47.2% approve



B. BICYCLE LANES AND SIDEWALKS ON ROSECRANS (Sports Arena to Pacific Highway)



Discussion: Rosecrans Street links the Old Town Transit Center with Activity Centers in the Midway Community. Through this primarily industrial area, there are intermittent sidewalks, multiple curb cuts and no bicycle lanes. The proposed improvement would work within the existing right-of-way to provide a continuous sidewalk and bicycle lanes from the transit center to Sports Arena Boulevard.

Elements of the Proposed Improvement:

- Reconstruct sidewalks on the north side of Rosecrans on all blocks. Where appropriate, construct curb extensions to reduce crossing distance for pedestrians across Rosecrans.
- Reconstruct sidewalk on south side of Rosecrans from Kurtz Street to Hancock Street.
- Install traffic signal at Hancock Street to improve pedestrian and vehicular access. Provide for protected-permissive phasing, if appropriate, while single left turn lane is provided.
- When warranted, re-stripe eastbound Rosecrans at Hancock Street to provide dual left turn lanes. This will require removal of on-street parking on the south side of Rosecrans and along Hancock Street. Provide protected phasing at the intersection when restriping occurs.
- Extend the existing transit only lane at Pacific Highway.
- Restrict left turn access at Jefferson Street through the installation of delineators
- Reconstruct northwest corner at Pacific Highway/Rosecrans by extending the existing curb to align with the northeast corner of the intersection. In doing so, driveways along Rosecrans immediately west of Pacific Highway would be closed.

What will the improvement resolve: Sidewalks would provide for a continuous ADA compliant pedestrian route between the Transit Center and activity centers in the Midway community. The associated curb extensions or curb reconstructions would improve the visibility of pedestrians and buffer existing on-street parking.

The traffic signal at Hancock Street would improve the long-term operating conditions of this intersection as well as provide for a signalized pedestrian crossing. The northbound left turn volume in the p.m. peak is forecast to increase from 195 to 356, which is not feasible to be handled at an unsignalized intersection.

ROSECRANS CORRIDOR MOBILITY STUDY

Extension of the transit only lane will improve the on-time performance and transit access to the Old Town Transit Center. The extension will also remove buses from the through lanes and right turn lane, which will improve traffic conditions.

Alternatives Considered:

- No bicycle lanes on Rosecrans Street: Bicycles will be permitted to travel on Rosecrans Street regardless of the presence of bicycle lanes or other marked bicycle facilities according to the California Vehicle Code. Due to a lack of parallel or alternate routes, it is unlikely that bicycle traffic will be re-routed in the future. Since ample space is available within the existing right-of-way and Rosecrans is a key link between the transit center and the Midway Community, the option of not providing bicycle lanes was not selected.
- Class I Bicycle Facility (bi-directional): Due to the number of curb cuts and streets along Rosecrans, providing a Class I bicycle facility was determined to be infeasible.
- No traffic signal at Hancock Street: By year 2030 traffic volume along Rosecrans Street is anticipated to increase by more than 82%. In addition left turn volumes at Hancock Street are anticipated to increase at a similar pace. Year 2030 operating conditions without the signal would result in LOS E/F conditions. Therefore, it was determined a signal is necessary and warranted to accommodate future growth.

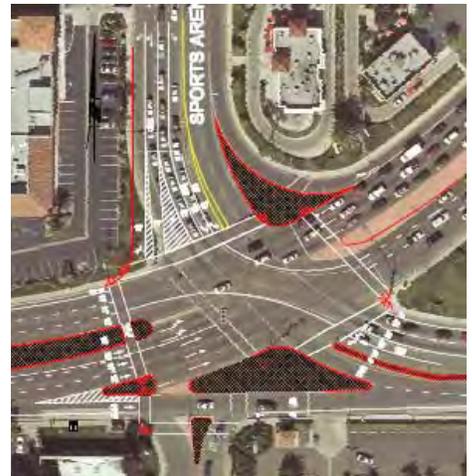
Potential Impacts: The proposed may result in a minimal decrease in available parking or modifications to access.

Community Input:

- Project Working Group: 90.0% approve (sidewalks & bicycle lanes)
50.0% neutral (traffic signal)
- Workshop #3 Preference Survey: 52.7% approve

C. EXTENSION OF SPORTS ARENA THROUGH CAMINO DEL RIO-ROSECRANS INTERSECTION

Discussion: The Midway Community Plan currently identifies the long-term improvement of extending Sports Arena east and connecting to Pacific Highway. The existing alignment of Sports Arena through the intersection is such that this improvement could not be accomplished without impacts to right-of-way on the southwest corner of the intersection. Sports Arena is currently offset and the extension would require the north leg to move to the southwest to accomplish an acceptable alignment. To avoid introducing a fifth approach to the intersection, the westbound through movement on Sports Arena would continue to be restricted to right turn onto Rosecrans only.





Elements of the Proposed Improvement:

- Remove existing northbound left turn movement on Rosecrans Street.
- Provide overhead signage on the northbound approach to Sports Arena directing traffic to Hancock Street for westbound access to Sports Arena.
- Modification to the existing raised median island on the east side of the intersection to allow eastbound traffic through the intersection.
- Modifications to the southwest corner to construct an eastbound through lane and dedicated right turn lane on eastbound Sports Arena Boulevard.
- Modifications to the traffic signal and traffic signal timing.
- Modifications to existing medians on northbound Rosecrans and southbound Camino del Rio.
- Re-stripe crosswalks and bicycle lanes through the intersection.

What will the improvement resolve: Extending Sports Arena eastbound would provide direct access to Pacific Highway thereby reducing the reliance upon Midway and other routes.

Alternatives Considered:

- Grade Separation: Grade separation would significantly reduce the delay in the project study area. However, grade separation would require significant construction of infrastructure and would impact existing properties along the corridor. In the near-term, this improvement was determined to be physically and fiscally infeasible. However, with traffic volumes along Camino del Rio corridor forecast at 70,000 vehicles per day or more, significant improvements to this corridor will be needed to address traffic flow. Grade separation and/or realignment of Rosecrans should continue to be considered for future year conditions.
- Realignment of Rosecrans & Sports Arena: Realigning Sports Arena and Rosecrans to create a four-legged intersection and reduce the number of traffic signals along Camino del Rio would require significant right-of-way. Under the near term conditions, this option is infeasible as it would result in impacts to existing development. In addition, the realignment would result in unusual "jogging" of Rosecrans through the study area. Although the realignment would help ease congestion by reducing the number of traffic signals, it cannot be considered without an overall plan for redevelopment of the study area. Therefore, if the Sports Area area redevelops, the alignment of Rosecrans, Sports Arena and Camino Del Rio should be reconsidered.
- Roundabout: A roundabout was considered in a previous study and deemed infeasible due to limited right-of-way.
- Do Nothing: If no improvements are made to the corridor, weaving traffic along Rosecrans, east of Camino del Rio, will result in high congestion and significant increases in delay. In addition, left turn volumes on the northbound approach at Camino del Rio will extend beyond the available storage once the Midway improvements are constructed. With these constraints on the northbound approach, traffic heading toward Sports Arena will reach gridlock during peak periods. Improvements to address these movements are needed. Therefore, the "do nothing" alternative was rejected as a viable alternative for this location.

ROSECRANS CORRIDOR MOBILITY STUDY

Potential Impacts: The proposed improvement will result in diversion of northbound traffic to Midway and Hancock because the northbound left turn from Rosecrans to Sports Arena would be eliminated. There are many alternative routes for traffic heading eastbound on Sports Arena.

Directional signage would be installed with the improvements approaching Sports Arena re-directing traffic headed northbound. Traffic destined for Sports Arena from Rosecrans would be directed to take Camino del Rio and turn left onto Hancock. A new north south connector would be needed west of Camino del Rio that would roughly align with Greenwood Avenue.

Community Input:

- Project Working Group: Split on Concept Plan (40%/40%)
In favor of further study (90%)
- Workshop #3 Preference Survey: 41.2% disapproved

D. ROSECRANS AND MIDWAY INTERSECTION IMPROVEMENTS



Discussion: The City of San Diego is currently planning on improving the intersection of Rosecrans and Midway to include a second northbound left-turn lane and extend the existing dual southbound left-turn lanes. Although this is sufficient to address the existing operational deficiencies at this intersection, additional improvements were determined to be necessary to address the mid to long-term mobility at Midway.

Mid to long-term improvements for this intersection include adding a northbound dedicated right-turn lane along Rosecrans. Adding a northbound right turn lane would reduce the delay northbound through and right-turning vehicles. In addition, the mid to long-term improvements include the completion of the bicycle lanes through the intersection.



Elements of the Proposed Improvement:

- Provide dual northbound left-turn lanes from Rosecrans onto Midway. (short term City project)
- Extend the existing southbound left-turn pockets. (short term City project)
- Widen to construct a dedicated northbound right-turn pocket. (mid to long term)
- Widen to provide dedicated Class II bicycle lanes. (mid to long term)
- Relocate existing transit stop to new curb location. (mid to long term)
- Allow transit queue jump in northbound and southbound dedicated right turn lane (long term)

What will the improvement resolve: Adding the second northbound left-turn lane and extending the southbound left-turn lanes will decrease the queue and increase capacity for traffic from Rosecrans to Midway. Adding the dedicated northbound right-turn lane will provide additional capacity and reduce delay on the northbound approach.

Alternatives Considered:

- No Build: The City of San Diego will construct the short term improvements in year 2010. These improvements will provide the necessary capacity to address current and future left turn volumes through the intersection. By year 2030, the through volumes and right turn volumes will increase such that the delays on the northbound and southbound approach will exceed acceptable levels. By making no further improvements to this intersection, delays and operating conditions will soon reach the current condition despite the short term improvements planned for the intersection.

Potential Impacts: The proposed improvements will result in right-of-way impacts on the west side of Rosecrans Street to accommodate the additional lanes.

Community Input:

- Project Working Group: 70.0% approve
- Workshop #3 Preference Survey: 67.3% approve

E. BICYCLE LANES ON ROSECRANS & REMOVAL OF PARKING



ROSECRANS CORRIDOR MOBILITY STUDY

Discussion: Rosecrans Street connects the Old Town Transit Center with several residential and commercial areas in Point Loma. Through this commercial area, there are multiple curb cuts and no bicycle lanes. Traffic counts collected for the corridor revealed that numerous bicyclists use this corridor on a daily basis. Without or with bicycle lanes, bicycles can and will use Rosecrans Street. The proposed improvement would stripe bicycle lanes within the existing right-of-way, but would require the removal of existing on-street parking. With speeds along this portion of Rosecrans exceeding 40 mph, it is not a conducive environment for on-street parking and bicycle activity. Removal of the parking would remove one of the many challenges for bicyclists and passenger vehicles along this corridor.

Elements of the Proposed Improvement:

- Remove existing on-street parking.
- Stripe six foot (6') bike lanes between Midway and Lytton

What will the improvement resolve: Bike lanes would provide for a continuous bicycle route between the Transit Center and the residential communities and commercial areas in Point Loma.

Alternatives Considered:

- Do Nothing: Bicycles will travel along Rosecrans Street without or with striped bicycle lanes. By the year 2030, traffic volumes along the corridor will increase over existing conditions. Providing bicycle lanes and removing the parking will improve the bicycling environment by removing potential conflicts between parked vehicles and bicycles. Because the bicycle lanes would require no additional right-of-way, would improve the overall bicycle environment and is a primary link in connecting the transit center with the peninsula, the "do nothing" alternative was not a feasible alternative.
- Construct Side Path: A feasibility assessment was prepared for the design and construction of a Class I bicycle facility. The criteria for assessing the feasibility of this facility was based on Chapter 1000 of the Caltrans Highway Design Manual. According to the design guidelines for a Class I facility, a minimum of 14 to 18 feet of right-of-way would be required on one-side of the street, which includes both parkway and bicycle path. An evaluation of existing right-of-way along the corridor revealed that there are 12 locations where the necessary minimum 14 feet of existing right-of-way cannot be met. Although medians and travel lanes could be narrowed to improve the available conditions along the corridor, overall there are many constraints that would limit the feasibility of a side path.

First, there are many side streets and curb cuts along both the east and west sides of Rosecrans Street that would be challenging for a two-way bicycle path. A class I bicycle path should be provided in an area unaffected by side street traffic in order to minimize the conflicts between bicycles and vehicles.

Also, Rosecrans Street would need to be completely reconstructed through the study area to accommodate a Class I bicycle path. This would include removing medians and relocating curbs. The cost of constructing the Class I bicycle path makes this option prohibitive in the short to mid-term.



Finally, there are acceptable parallel routes for bicycles in the study area with lower speeds and lower volumes. Recreational cyclists have alternative routes including the waterfront bicycle path.

Because of the cost and physical limitations, the Class I bicycle facility through Area 2 was determined to be infeasible.

Potential Impacts: The proposed removal of parking would require motorists to park off-street in the commercial parking lots.

Community Input:

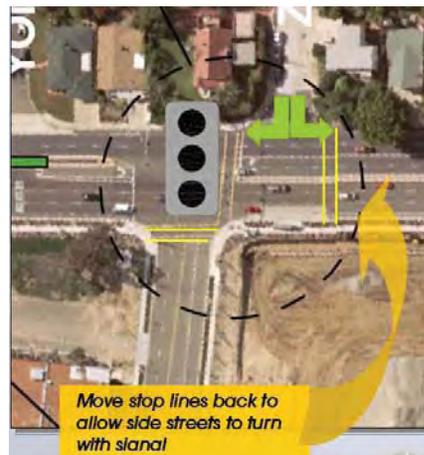
- Project Working Group: 89.0% approve
- Workshop #3 Preference Survey: 50.9% disapproved

F. MODIFIED SIGNALS AT DUMAS/ROOSEVELT AND ZOLA/WOMBLE

Discussion: Through Area 2 the west side of Rosecrans Street has no signalized access. Traffic signals provided at Roosevelt Street and Womble Road provide controlled access for the east side of the street only.

Elements of the Proposed Improvement:

- Modify traffic signal at Rosecrans/Roosevelt to include side street control at Dumas Street. This will require removal of existing raised medians and restriping of the intersection.
- Modify traffic signal at Rosecrans/Womble Road to include side street control at Zola Street. This will require removal of existing raised medians and restriping of the intersection.



What will the improvement resolve: Modifying the intersections will provide improved access for traffic coming from the west side of Rosecrans from Dumas and Zola. The intersections will better serve both sides of Rosecrans and provide left-turn access that is currently prohibited.

Alternatives Considered:

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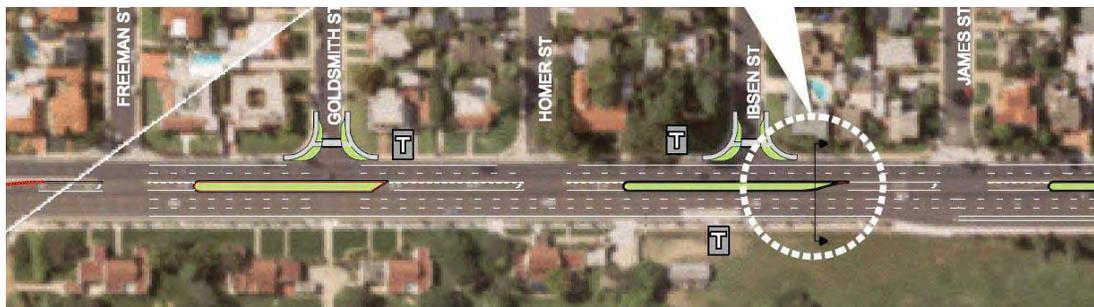
- **Do Nothing:** Not constructing these improvements would result in continued limited access from the west side of Rosecrans Street. As traffic volume on Rosecrans Street increases through year 2030, existing gaps in traffic will become fewer and further between. As a result, side street delays will increase.

Potential Impacts: The proposed setback of the intersection stop-lines may result in a shift in traffic queue along Rosecrans. Modification of traffic signal may affect access for some residences who take direct access onto Rosecrans from their driveways.

Community Input:

- Project Working Group: 100% approve
- Workshop #3 Preference Survey: 55.0% approve

G. INTERMITTENT MEDIANS WITH NORTHBOUND LEFT-TURN ACCESS



Discussion: Rosecrans has several side street connections between Lytton and Freeman with left turns permitted to and from Rosecrans. Consolidating the number of access points would improve traffic flow and reduce the number of potential for accidents through this section. Landscaped medians would match the existing aesthetic fronting NTC. Curb extensions are also proposed to reduce the pedestrian crossing distance and enhance the pedestrian environment on the west or southbound side of Rosecrans.

Elements of the Proposed Improvement:

- Install intermittent medians along Rosecrans between Lytton and Freeman to reduce the potential for conflict by consolidating the number of side-street access points.
- Install curb extensions to reduce the pedestrian crossing distance and enhance the pedestrian environment on the west side of the street.

What will the improvement resolve: Consolidating the number of access points will reduce the potential for accidents through this section and reduce the interruptions to traffic flow along Rosecrans. Curb extensions will reduce the crossing distance for pedestrians and enhance the pedestrian environment on the west side of the street.



Alternatives Considered:

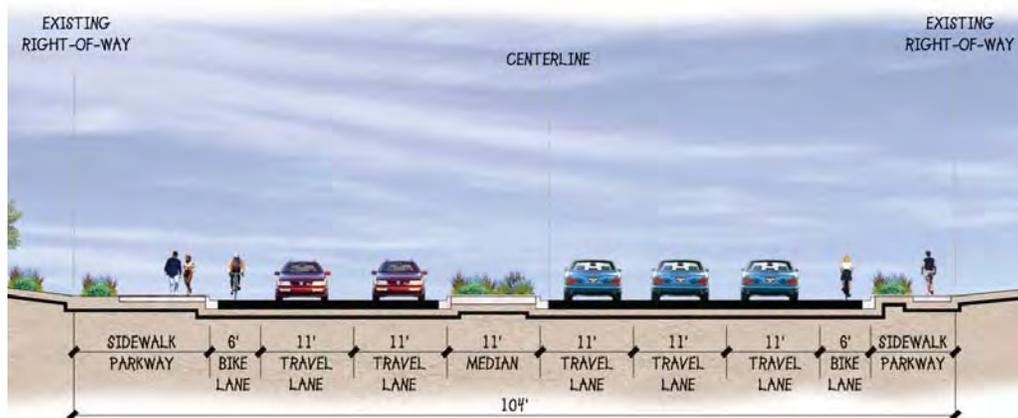
- **Continuous Raised Median:** This alternative would construct a continuous raised median along Rosecrans to restrict access at all unsignalized intersections to right turn in-right turn out. This alternative would increase traffic at signalized access points as well as traffic along the parallel route to the north. When the NTC property was under consideration, this alternative was rejected by the community. Due to potential opposition and lack of overall benefit to operations along the corridor, this alternative was rejected.
- **Do Nothing:** Maintaining full access to side streets along the corridor may result in increase delays to side street traffic as traffic volumes along Rosecrans Street increase. With increase in traffic volumes associated with growth in the region, gap in traffic will become fewer and further between. Maintaining the existing striped median allows vehicles to cross one direction of traffic at a time so that gaps in traffic need only exist in one direction for a vehicle to negotiate their left turn movement. Whereas a raised median would provide a refuge area for pedestrians along the corridor, the striped median does not provide any protection or refuge for pedestrians crossing from east to west or vice-versa.

Potential Impacts: The proposed consolidation of side street access may result in increase traffic on streets where left turn traffic is allowed. Increased traffic volumes may also occur along Evergreen Street.

Community Input:

- Project Working Group: 40.0% neutral
- Workshop #3 Preference Survey: 42.4% approve

H. WIDER BICYCLE LANES (LYTTON TO ROOSEVELT)



Discussion: The existing bike lanes between Lytton and Roosevelt are four feet wide and include the gutter. Bicyclists who travel through this section ride very close to vehicular traffic with a posted speed limit of 35 mph. In many cases, bicycles have been observed on the sidewalk to avoid traveling with traffic. In addition, the proximity of traffic to the sidewalk makes for an uncomfortable pedestrian environment. By narrowing the width of the existing 12

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to 14 foot striped median to 10 feet and modifying the location and length of raised medians through this section, an additional two feet can be added to the bicycle lane on the west side of the street.

Elements of the Proposed Improvement:

- Widen the bike lanes within the existing right-of-way by narrowing the width of the median.
- Re-stripe the travel lanes and center median to provide for additional bike lane width.
- When modifying existing medians related to other recommended improvements, consider narrowing or shortening to accommodate wider bicycle lanes.

What will the improvement resolve: Widening the bike lanes will provide additional room for bicyclists traveling along Rosecrans and provide an additional buffer from vehicular traffic. Providing wider bike facilities may encourage additional use of the bike lanes. Currently, bicyclists may be seen riding in the opposite direction of traffic or on the sidewalk due to unwillingness of riding in existing bike lanes.

Alternatives Considered:

- Do Nothing: Bicycles are currently provided a dedicated bicycle lane, the improvements recommended are aimed at improving the overall facility. The "do nothing" alternative would not result in a decline in bicycle connectivity, but would not resolve existing concerns regarding both the bicycle and pedestrian environment along the corridor.

Potential Impacts: None.

Community Input:

- Project Working Group: 90.0% approve
- Workshop #3 Preference Survey: 59.0% disapprove



I. SIDE STREET CURB EXTENSIONS TO REDUCE CROSSING DISTANCE



Discussion: In Area 2, the parkway on the west side of Rosecrans has no buffer from the adjacent vehicular traffic. The walk audits conducted for this project indicated that pedestrians do not feel safe walking on the west side of the street and many residents commented on the frequency of accidents that run up the curb and onto the sidewalk. Extending the curbs at intermittent corners will provide reduced crossing distance for pedestrians and will reduce the turning speeds of motorists at such intersections.

Elements of the Proposed Improvement:

- Construct curb extensions on the side street to reduce pedestrian crossing distance across the side street.
- Stripe crosswalks at intersections with curb extensions

What will the improvement resolve: Providing curb extensions will improve the visibility of pedestrians, reduce the crossing distance and reduce exposure time for pedestrians crossing the street. In addition, curb extensions reduce the turning speed of passenger vehicles entering the residential neighborhood. Such improvements may have a secondary benefit of reducing the potential for cut through traffic and speeding on residential streets.

Alternatives Considered:

- Do Nothing: Pedestrians can legally cross at these intersections. The “do nothing” alternative would not result in a decline in pedestrian connectivity, but would not resolve existing concerns regarding both the walking environment along the corridor.

Potential Impacts: Providing curb extensions may require motorists to reduce speeds to make the turns onto the side streets where curb extensions are located. Drainage, parking and driveway access on the side streets may be impacted by the construction of curb extensions.

Community Input:

- Project Working Group: 40.0% approve
- Workshop #3 Preference Survey: 46.6% disapprove

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J. CONSOLIDATION AND RELOCATION OF TRANSIT STOPS

Discussion: Some existing transit stops along Rosecrans are placed mid-block, which may encourage illegal and unsafe pedestrian crossings. Some existing transit stops are minimally used and located near other stops. The proposed improvement is to consolidate and relocate transit stops to be closer to crosswalks at signalized intersections to encourage pedestrians to use the crosswalks.



Elements of the Proposed Improvement:

- Consolidate underutilized transit stops.
- Relocate transit stops from mid-block locations to signalized intersections adjacent to a crosswalk to encourage appropriate street crossing.

What will the improvement resolve: Consolidating transit stops may improve transit efficiency. Relocating transit stops to signalized intersections may encourage pedestrians to use crosswalks and reduce the frequency of illegal crossings.

Alternatives Considered:

- Do Nothing: The “do nothing’ alternative would not result in a decline in access to transit. However, existing j-walking issues and transit access issues would not be resolved if no changes to transit stop locations were made.

Potential Impacts: None.

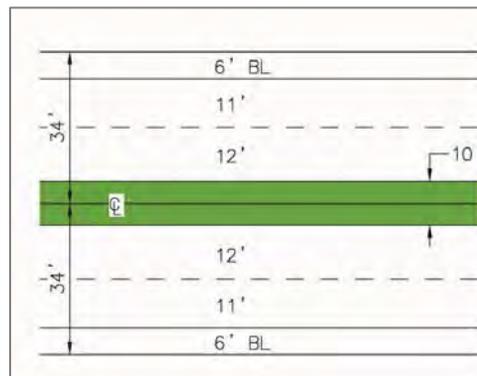
Community Input:

- Project Working Group: 100.0% approve
- Workshop #3 Preference Survey: 46.6% approve



K. RE-STRIPE TO ADD SIX-FOOT BICYCLE LANES

Discussion: Bike lanes are provided in Areas 2 and 4 but are not provided in Areas 1 or 3, creating a discontinuous bicycle route through the study area. Bike lanes may be provided within the existing right-of-way by narrowing the center left-turn lane and travel lanes. Narrowing and re-striping the existing travel lanes would provide six-foot bike lanes through Area 3.



Elements of the Proposed Improvement:

- Re-stripe roadway within existing right-of-way to provide six foot (6') bicycle lanes

What will the improvement resolve: Providing bike lanes in Area 3 would complete local and regional bicycle connections throughout the study area, particularly with the surrounding study Areas 2 and 4. The bicycle lane would provide a “break down area” along Rosecrans Street that currently is not provided. Buses would stop in the bicycle lane, thereby reducing the impact on the outside through lane. Similarly, when emergency vehicles are present, vehicles can use the bicycle lane as an area to pull over so emergency vehicles can pass.

Alternatives Considered:

- Bicycle Boulevard on Parallel Routes: Many residents expressed a concern about the mixing of bicycles and passenger vehicles in the village. Locust Street to the north and Scott Street to the south were identified as potential alternative routes to Rosecrans Street. Scott Street was determined to be infeasible for a “Bicycle Boulevard”. Bicycle Boulevards create an environment conducive to bicycling and restrict passenger vehicle access. Scott Street was determined to be infeasible as a Bicycle Boulevard. Slower speeds and the residential character along Locust Street may be a more appropriate environment for creating a Bicycle Boulevard. If the community continues to support the concept of a Bicycle Boulevard, further study of this concept will be required to determine the feasibility of implementing the appropriate measures for controlling passenger vehicle traffic. Regardless of the determination made regarding the Bicycle Boulevard, bicycles will travel on Rosecrans Street. The Bicycle Boulevard would not replace the need for appropriate facilities on Rosecrans.
- Do Nothing: Bicycles have the legal right to travel along Rosecrans Street without or with a bicycle lane. By not striping bicycle lanes, the existing bicycle conditions will not improve and bicycle will continue to interact with passenger vehicles.

Potential Impacts: None.

Community Input:

- Project Working Group: 90.0% approve
- Workshop #3 Preference Survey: 62.0% disapprove

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L. LANDSCAPED MEDIANS AND LEFT TURN POCKETS AT INTERSECTIONS

Discussion: Through Area 3 left turns are permitted to and from Rosecrans from all unsignalized intersection. Level of service analysis of the unsignalized intersections showed that delays to side street vehicles typically exceed the acceptable LOS E threshold (more than 50 seconds per vehicle). Because the blocks are short, most blocks do not have a center median requiring vehicles to cross both directions of traffic during available gaps.



Consolidating the number of access points would improve traffic flow, reduce delay to the side streets, and reduce the number of potential for accidents through this section. Parallel routes are available for traffic to circulate within a block of Rosecrans Street.

Construction of the raised median provides a refuge area for pedestrians and provides opportunities for public art and landscaping.

Elements of the Proposed Improvement:

- Construct raised, landscaped medians through intersections.
- Maintain “left turn in” access at selected intersections.
- Restrict all “left turn out” access
- Landscape medians to improve the aesthetic quality of the corridor.

What will the improvement resolve: Consolidating the number of access points will reduce the delay on the side street and reduce the interruptions to traffic flow along Rosecrans.

Alternatives Considered:

- Reduce Northbound Lanes to One Lane to Provide Parking on East Side of Street. To improve the pedestrian environment and create an improved “village” feel, an alternative was considered that would reduce the number of lanes to provide on-street parking. The results of the technical analysis showed that the reduction in lanes would resulting in deficient operating conditions for traffic. Community input on this alternative indicated that the additional lanes were preferable over the additional parking. However, if redevelopment occurs along the corridor, dedication of right-of-way should considered to integrate parking along Rosecrans where feasible. Overall, there was little support for this alternative and it was therefore rejected.
- Do Nothing: As traffic volumes along Rosecrans continue to increase through year 2030, gaps in traffic will become fewer making access across Rosecrans increasingly more difficult. Delays on the side street will continue to increase resulting in changes in traffic patterns, reductions in left turning volumes and potentially



frustrated drivers. In some cases, the left turning volume northbound and southbound will require longer left turn pockets. The longer left turn pockets may extend into the adjacent intersections or the queue will spill over into the adjacent through lanes. Improvements are necessary to address this condition. As a result, the "do nothing" alternative was rejected.

Potential Impacts: The proposed improvement will result in shift in traffic patterns to signalized intersections or intersections with allowable left turn in access. Traffic patterns will shift and result in some diversion to parallel streets.

Community Input:

- Project Working Group: 90.0% approve
- Workshop #3 Preference Survey: 43.8% disapprove

M. NEW TRAFFIC SIGNAL AT EMERSON



Discussion: The lack of crosswalks or signalized intersections between Byron and North Harbor Drive results in illegal and unsafe pedestrian crossings. This section of Rosecrans is primarily commercial and generates pedestrian activity. In addition, vehicular traffic is constantly flowing through the area without interruption, causing an unsafe pedestrian

crossing environment and may encourage speeding. A traffic signal between Byron and North Harbor Drive at Emerson would provide a striped crosswalk for pedestrians and halt traffic through the middle of this section.

Elements of the Proposed Improvement:

- Install a traffic signal at Rosecrans and Emerson.
- Stripe crosswalks on all legs of intersection

What will the improvement resolve: Providing a new traffic signal with crosswalks will encourage safer pedestrian crossings and help minimize speeding through the area.

Alternatives Considered:

- Do Nothing: Pedestrians can legally cross Rosecrans at any unsignalized intersection along the corridor. Without improved access for pedestrians and passenger vehicles, crossing Rosecrans in the future may

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become increasingly difficult with increase traffic demands. The proposed improvement would help improve access that will not otherwise occur under the “do nothing’ alternative.

Potential Impacts: Increase in delay on Rosecrans with the introduction of a traffic signal. Due to the proximity of adjacent traffic signals, the timing of the new signal would need to be coordinated to reduce the potential for unnecessary stopping.

Community Input:

- Project Working Group: 80.0% approve
- Workshop #3 Preference Survey: 48.0% approve

N. SIDE STREET CURB EXTENSIONS TO REDUCE CROSSING DISTANCE



Discussion: This section of Rosecrans contains pedestrian generators, including commercial uses, motels, and proximity to the marina village. The roadway is currently four lanes with a center turn lane and a posted speed limit of 40 miles per hour. The land uses in this area are pedestrian-oriented but the streetscape lacks pedestrian amenities. Curb extensions through this area would improve the visibility of pedestrians, reduce the pedestrian crossing distance and exposure in the street and provide opportunities to improve the aesthetic quality along the corridor through landscaping.

Elements of the Proposed Improvement:

- Construct curb extensions on side streets

What will the improvement resolve: Rosecrans passes through the village, but the village currently lacks pedestrian friendly amenities or elements that create a walkable environment. The curb extensions would both call attention to the pedestrian and create space to install landscaping and/or key features that establish the village as a destination. Coupled with the landscaped medians, these improvements would change the character of Rosecrans Street and improve the walking and bicycling environment while maintaining the traffic capacity of the roadway. The curb extensions would help reduce the traffic turning speed at intersections and buffer parked vehicles on the side streets.



Elements of the Mobility Plan

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Alternatives Considered:

- **Do Nothing:** Pedestrians can legally cross at these intersections. The “do nothing’ alternative would not result in a decline in pedestrian connectivity, but would not resolve existing concerns regarding both the walking environment along the corridor.

Potential Impacts: Providing curb extensions may require motorists to reduce speeds to make the turns onto the side streets where curb extensions are located.

Community Input:

- Project Working Group: Split: 40.0% approve/40% disapprove
- Workshop #3 Preference Survey: 42.0% approve

O. RELOCATION OF TRANSIT STOPS TO SIGNALIZED INTERSECTIONS



Discussion: Some existing transit stops along Rosecrans are placed mid-block, which may encourage illegal and unsafe pedestrian crossings. Some existing transit stops are minimally used and located near other stops. The proposed improvement is to consolidate and relocate transit stops to be closer to crosswalks at signalized intersections, including the proposed signal at Emerson, to

encourage pedestrians to use the crosswalks to access transit.

Elements of the Proposed Improvement:

- Consolidate underutilized transit stops.
- Relocate transit stops from mid-block locations to signalized intersections adjacent to a crosswalk to encourage appropriate street crossing.



What will the improvement resolve: Consolidating transit stops may improve transit efficiency. Relocating transit stops to signalized intersections may encourage pedestrians to use crosswalks and reduce the frequency of illegal crossings.

Alternatives Considered:

- **Do Nothing:** The “do nothing’ alternative would not result in a decline in access to transit, but would not resolve existing concerns regarding access to transit stops or transit performance.

Potential Impacts: This improvement may result in longer distances for pedestrians to access transit stops compared to the existing location of some stops. The spacing of stops is such that no two stops are located more than one-quarter mile away from the others.

Community Input:

- Project Working Group: 100.0% approve
- Workshop #3 Preference Survey: 52.0% approve

P. RE-STRIPE INTERSECTION OF ROSECRANS AND TALBOT

Discussion: The intersection of Rosecrans at Talbot is currently striped to provide a shared northbound left-through-right turn lane. Vehicles heading northbound on Rosecrans often go around motorists waiting to make the northbound left turn onto Talbot, creating a weaving pattern. The southbound direction has two lanes (one through lane and one shared through-right turn lane), but only has one receiving lane, requiring vehicles to quickly merge at the receiving end of the intersection. To resolve these issues, the proposed improvement is to re-stripe the intersection to provide two northbound lanes, one left turn and one shared through-right turn lane, and re-stripe the southbound leg to contain one left-turn lane and one shared through-right turn lane. The existing crosswalks are also proposed to be re-striped to match the proposed lane configurations.



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Elements of the Proposed Improvement:

- Restripe the northbound approach to include a dedicated left-turn lane and shared through-right turn lane on Rosecrans.
- Restripe the southbound approach to include a southbound left-turn lane and shared through-right turn on Rosecrans.
- Re-stripe the existing crosswalks to match the proposed lane configurations.

What will the improvement resolve: Providing the northbound left-turn lane with a shared through-right turn lane on Rosecrans will improve flow upon the approach of the intersection and will eliminate the existing weaving pattern caused by motorists going around those waiting to make the left-turn. Re-striping the southbound approach of the intersection will improve the alignment and flow of traffic to match the number approaching lanes with the number of receiving lanes, thus eliminating the need to quickly merge into the single receiving lane.

Alternatives Considered:

- **Do Nothing:** By maintaining the existing lane configuration, vehicles will continue to pass on the right side of a vehicle waiting to make a left hand turn. This situation creates line of sight issues for vehicles on the opposite approach also waiting to make a left hand turn and for pedestrians in the crosswalks.

Potential Impacts: None.

Community Input:

- Project Working Group: 100.0% approve
- Workshop #3 Preference Survey: 51.6% approve

Q. COMPLETE SIDEWALKS ON WEST SIDE OF STREET



Discussion: The southernmost portion of the Rosecrans corridor is primarily residential. Sidewalks are intermittent on both sides of the street and provide a discontinuous pedestrian path. In areas where sidewalks are missing,



pedestrians must walk in either the bicycle lane or travel lane with no separation from vehicular traffic. Community outreach efforts have revealed that many residents prefer not to have sidewalks on both sides of the street, particularly on the east side of the street where several resident driveways front the road. Therefore, sidewalks are proposed to be completed on the west side of the street to fill in existing pedestrian gaps to provide a continuous pedestrian path.

Elements of the Proposed Improvement:

- Construct sidewalks on the west side of the street in sections where sidewalks are currently missing or in a state of disrepair.
- May require some level of drainage improvements
- May require acquisition of right-of-way
- May require construction of small retaining walls (less than 3 feet)

What will the improvement resolve: Providing sidewalks on at least one side of the road will provide pedestrians with a continuous path through this neighborhood. Providing sidewalks on the west side will give pedestrians a safer place to walk instead of walking in the bike lanes next to vehicular traffic.

Alternatives Considered:

- Provide sidewalks on both sides of the street. There are significantly more gaps in the sidewalk on the east side of the street when compared to the west side of the street. Constructing a sidewalk on the east side of Rosecrans would result in impacts to the fronts of numerous properties many of which have garages immediately adjacent to the road. There are parallel walking paths along the waterfront on the east side of Rosecrans, which many members of the community identified as the preferred walking route for recreation. Therefore, the alternative to provide sidewalks on both sides of the street was determined to be infeasible.
- Do Nothing. Pedestrians currently walk within the parking lane when parked vehicles are not present. When vehicles are parked, pedestrians move to the bicycle lanes. Speeds along the corridor vary depending upon traffic demands. However, during off peak periods traffic speeds typically exceed the posted speed limit. With pedestrians in the bicycle lane, there is no buffer from the through traffic. In addition, the bicycle and parking lane do not provide adequate access for disable residents and/or guests. Maintaining the existing condition would continue to put pedestrians at risk when walking in the parking or bicycle lanes given the speeds along Rosecrans Street.

Potential Impacts: To install the sidewalk right-of-way may need to be acquired or parking may be lost. Final design of the sidewalk would determine the most appropriate means to accommodate the sidewalk.

Community Input:

- Project Working Group: 90.0% approve
- Workshop #3 Preference Survey: 40.3% approve

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R. CURB EXTENSIONS AT OWEN AND BESSEMER

Discussion: The southernmost portion of Rosecrans is primarily residential and provides access to the Navy Sub Base as well as local beach access. The roadway is currently two lanes with a posted speed limit of 30 miles per hour and intermittent sidewalks. Community outreach efforts have revealed that some residents feel that speeding is an issue through this section of the corridor. Curb extensions would reduce the pedestrian crossing distance and exposure in the street and would serve as a traffic calming device to reduce speeds through the residential area. Curb extensions are proposed at two locations, Owen and Bessemer, due to studies that show traffic calming devices to reduce speed work best in sequence. In addition, curb extensions would improve visibility of pedestrians to motorists.



Elements of the Proposed Improvement:

- Construct curb extensions at Owen and Bessemer
- Stripe crosswalks on the south leg and along the stop controlled side streets.
- Use highly reflective paint and/or pavement markings to improve the visibility of the pedestrian crossing to the motorist.

What will the improvement resolve: Traffic speeds through Area 4 typically exceed the posted speed limit, particularly during off peak hours. Bessemer and Owen are two intersections along the corridor that provide pedestrian access to walking paths along San Diego Bay to the east of Rosecrans Street. During the summer or during events in Point Loma parking along Rosecrans and in the adjacent neighborhoods is at a premium. During these times, the parked vehicles also make it difficult for motorists to see pedestrians waiting to cross the street. The purpose of the curb extension is to reduce the traffic speeds and improve pedestrian visibility.

Alternatives Considered:

- Mini-roundabout: To improve access from the side streets, reduce speeds through the intersection and to calm traffic along the corridor, mini-roundabouts were considered. The mini-roundabouts would have impacted parking and access to some properties along the corridor. Due to the potential queuing impact that may occur with the implementation of roundabouts, this alternative was rejected for these two locations.
- Do Nothing: Pedestrians can legally cross at these intersections. The “do nothing” alternative would not result in a decline in pedestrian connectivity, but would not resolve existing concerns regarding the walking environment along the corridor or the traffic speeds through Area 4.

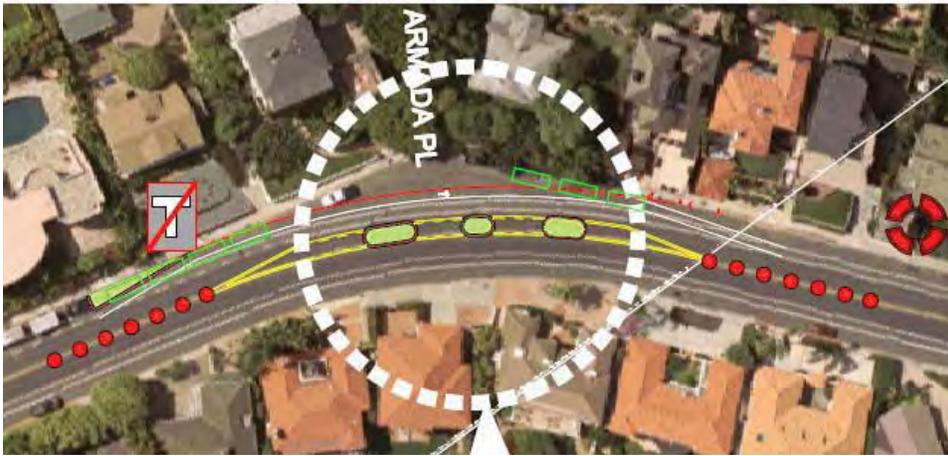
Potential Impacts: Providing curb extensions may require motorists to reduce speeds to make the turns onto the side streets where curb extensions are located. Parking spaces immediately adjacent to the intersections may be lost. Access to some properties may be affected.



Community Input:

- Project Working Group: 80.0% approve
- Workshop #3 Preference Survey: 42.9% disapprove

S. MEDIAN ISLANDS AT ARMADA



Discussion: Rosecrans curves at Armada Place within the southern portion of the corridor. The roadway is currently two lanes with bike lanes and on-street parking. The posted speed limit is 30 miles per hour. Speed surveys show the 85th percentile at 35 mph northbound and 38 mph southbound. Accident reports show that most accidents occur on the southbound approach adjacent to the intersection of Kona Way. The cause of the accidents is most typically associated with either hitting fixed objects, hitting parked vehicles or running off the road.

Residents have expressed concern about speeding through this particular section of the corridor. Therefore, medians and striping are proposed to help control traffic and reduce speeds as motorists travel through the curve. Median breaks are also proposed to maintain access to the surrounding residential driveways.

Elements of the Proposed Improvement:

- Construct medians in the center of the road at Armada Place.
- Install curb extensions on the north leg of Kona Way to buffer existing parking along Rosecrans south of the curve.
- Restripe through curve with highly reflective paint and appropriate raised pavement markers
- Install appropriate signage in advance of curve including a flashing beacon and/or V-Calming sign.

What will the improvement resolve: Installing medians in the center of the road at Armada Place would help control and reduce speed through the section by narrowing the travel way and reducing the radius curvature

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southbound. More passive attempts at slowing traffic (signage, rumble strips, etc) have not been effective at reducing speeds or accidents through the curve.

Alternatives Considered:

- Improved Street Lighting in Advance of Curve. A field investigation after dark revealed that existing street lights are operational at either end of the curve. Due to the location of the curve on the west side of the street, no improvements to lighting are feasible. The curb is set so far from the existing travel way. The curb on the west side of Rosecrans would need to be relocated to improve the lighting through the curve on the southbound approach.
- Install V-Calming Sign. V-Calming is a tool used to inform drivers of their speed and flashes when speeds exceed the posted speed limit. Much like other passive traffic calming devices, the effectiveness of the V-Calming sign is limited. The recommended alternative includes the installation of a V-Calming sign in conjunction with the recommended improvements.
- Do Nothing: The “do nothing alternative” would not resolve key issues raised by the community as part of this process. Key concerns raised were traffic speeds through the neighborhood and access to the side streets. Many residents at the first workshop identified this curve as dangerous. With existing speeds more than 5 mph over the existing posted speed limits, the accident history through the curve and the presence of pedestrians in the residential setting through Area 4, physical improvements are necessary to improve the conditions through the curve. The “do nothing” or passive approaches to resolving these issues will not be effective.

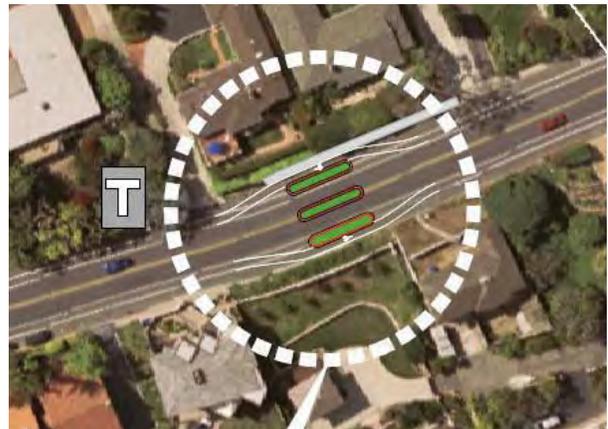
Potential Impacts: Installation of the median and striping would require removal of approximately seven on-street parking spaces.

Community Input:

- Project Working Group: 40.0% disapprove
- Workshop #3 Preference Survey: 67.7% disapprove

T. CHOKERS NEAR QUALTROUGH AND KONA

Discussion: The southernmost portion of Rosecrans is primarily residential and provides access to the Navy Sub Base. The roadway is currently two lanes with a posted speed limit of 30 miles per hour. Community outreach efforts have revealed that some residents feel that speeding is an issue through this section of the corridor. Mid-block chokers would neck down the roadway and serve as a traffic calming device to reduce speeds through the area. Chokers near Qualtrough and





Kona are proposed in addition to the previously mentioned curb extensions, due to studies that show traffic calming devices to reduce speed work best in sequence.

Elements of the Proposed Improvement:

- Construct outside islands (6' wide) adjacent to the outside lane near Qualtrough and Kona
- Re-route bicycles to the outside of the curb extensions
- Construct center island (6' wide) between curb extensions
- Restripe through the choker with highlight reflective paint and associated raised pavement marking. Maintain a minimum 14' lane through the choker.

What will the improvement resolve: Providing chokers will serve as a traffic calming device as the roadway is narrowed, requiring motorists to reduce speeds to travel through the section.

Alternatives Considered:

- Do Nothing. Community concerns raised at the workshop identified traffic speed as one of the top concerns in Area 4. Long straight stretches of roadway with little side street interaction creates an environment where motorist speeds exceed the posted speed limit. Without the installation of traffic calming devices, traffic speeds during off-peak periods will continue to exceed the posted speed limit, resulting in on-going challenges to maintain a posted speed limit of 30 mph.

Potential Impacts: Installation of the chokers would require removal of on-street parking spaces on each side of the choker.

Community Input:

- Project Working Group: 40.0% disapprove
- Workshop #3 Preference Survey: 61.3% disapprove

U. MINI ROUNDABOUT AT MCCALL

Discussion: The southernmost portion of Rosecrans is primarily residential and provides direct access to the Navy Sub Base. The roadway is currently two lanes with a posted speed limit of 30 miles per hour. Community outreach efforts have revealed that some residents feel that speeding is an issue through this section of the corridor. A mini roundabout at McCall would neck down the roadway and serve as a traffic calming device to reduce speeds through the



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intersection. The proposed roundabout would require motorists to maneuver around the roundabout and be cautious of others entering the intersection. The design of the roundabout would provide curb extensions at each of the corners, thereby reducing the crossing distance for pedestrians and improving visibility of pedestrians to motorists. The roundabout is proposed at McCall because it provides east-west access to and from the beach, which is a pedestrian generator. On-street parking would not be removed as the curb extensions would be placed where there is existing red curb.

Elements of the Proposed Improvement:

- Construct a mini roundabout at McCall and Rosecrans
- Restripe in advance of the mini-roundabout with highly reflective paint and provide the appropriate signage
- Stripe crosswalks on all legs of the intersection with highlight reflective paint

What will the improvement resolve: Providing the mini roundabout will help to control vehicle right-of-way at the intersection and serve as a traffic calming device. The mini-roundabout will narrow the through lanes approaching the intersection, requiring motorists to reduce speeds to make turns or travel through.

Alternatives Considered:

- Installation of Curb Extensions
- Do Nothing

Potential Impacts: Parking spaces along McCall and Rosecrans may be lost. Some access to residential properties may be impacted. Delays will be incurred to vehicles along Rosecrans and queues may for particularly during peak periods. Concept designs meet the minimum requirements to allowing large vehicle and emergency vehicle access. However, it may be necessary for fire trucks to “cut across” the roundabout, as opposed to going around, in the event of an emergency. Rolled curbs and a mountable center apron would provide the necessary width for the emergency vehicle to negotiate the roundabout.



Community Input:

- Project Working Group: 80.0% disapprove
- Workshop #3 Preference Survey: 70.1% disapprove

V. CONSOLIDATION OF TRANSIT STOPS



Discussion: Some transit stops along Rosecrans are underutilized with only a few riders per stop per day. The proposed improvement is to consolidate transit stops at locations with higher ridership to increase utilization of the transit stops.

Elements of the Proposed Improvement:

- Consolidate underutilized transit stops.

What will the improvement resolve: Consolidating transit stops may improve transit efficiency by removing underutilized stops.

Alternatives Considered:

- Do Nothing: Because existing transit stops along the corridor have very limited ridership, the change in stop location would have little to no impact in this area. Therefore, the “do nothing” alternative would not adversely impact future access to or transit performance along the corridor.

Potential Impacts: None.

Community Input:

- Project Working Group: 60.0% neutral
- Workshop #3 Preference Survey: 42.6% approve

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7.5 Summary

A total of 22 improvements were identified for the study area focusing on improving mobility for all modes of transportation within the corridor. The concepts identified were presented to the community and Project Working Group in November 2009. The results of the preference survey conducted at both the Open House (November 12th) and Project Working Group Meeting (November 19th) are summarized in Table 7-1.

Community input is one element of the review and selection of the elements of the Recommended Concept Plan. Technical analysis, safety improvements, cost, feasibility and consistency with the Community Plan are other key elements that affect the decision to make improvements to the plan. These elements of the review of the concept plan are discussed in other chapters of this report and summarized throughout this chapter.

Ultimately, this Mobility Study identifies each project in an implementation plan (Chapter 10), which categorizes the improvements into short, medium and long term projects. Actual implementation of any of these projects will be determined based on environmental clearance of the project, funding and community support. Although all the projects identified in the Recommended Concept Plan were not identified as favorable to the community at the final workshop, mobility conditions or redevelopment in the community may warrant consideration for improvements along the corridor. The implementation plan can serve as a guide for identifying projects that will resolve determined mobility issues.



Table 7-1
Summary of Preference Survey

Improvement Location & Description	Focus of Improvement	Workshop 3 Results	Project Working Group Survey Results
Improvement A: Median at Moore	Traffic	Like (47.2%)	Like (90%)
Improvement B: Sidewalk & Bicycle Lanes	Ped/Bicycle/Transit	Like (52.7%)	Like: Sidewalk & Bike (90%) Neutral: Signal (50%)
Improvement C: Rosecrans & Sports Arena	Traffic / Ped	Dislike (41.5%)	Extension Concept: (40%/40%) Like: Further Study (90%)
Improvement D: Rosecrans & Midway	Traffic	Like (67.3%)	Like (70%)
Improvement E: Bicycle Lanes on Rosecrans	Bicycle	Dislike (50.9%)	Like (80%)
Improvement F: Signal Modifications	Traffic	Like (55.0%)	Like (100%)
Improvement G: Medians & Turn Pockets	Traffic	Like (42.4%)	Like: 20%, Neutral: 40% Dislike: 30%
Improvement H: Widen Bicycle Lanes	Bicycle	Dislike (59.0%)	Like (90%)
Improvement I: Side Street Curb Extensions	Pedestrian	Dislike (46.6%)	Like: 40%, Neutral: 20% Dislike: 30%
Improvement J: Consolidation of Transit Stops	Transit	Like (46.6%)	Like (100%)
Improvement K: Widen Bicycle Lanes	Bicycle	Dislike (62.0%)	Like (90%)
Improvement L: Medians & Turn Pockets	Traffic/Ped	Dislike (43.8%)	Like (90%)
Improvement M: Signal at Emerson	Traffic/Ped/Bicycle	Like (48.0%)	Like (80%)
Improvement N: Side Street Curb Extensions	Pedestrian	Like (42.0%)	Split (40%/40%)
Improvement O: Relocate Transit Stops	Transit/Pedestrian	Dislike (52.0%)	Like (100%)
Improvement P: Restripe Rosecrans/Talbot	Traffic	Like (51.6%)	Like (100%)
Improvement Q: Complete Sidewalks	Pedestrian	Like (40.3%)	Like (90%)
Improvement R: Curb Extensions	Traffic Calming/ Pedestrian & Bicycle	Dislike (42.9%)	Like (80%)
Improvement S: Median Islands at Armada	Traffic	Dislike (67.7%)	Like: 30%, Neutral: 20% Dislike: 40%
Improvement T: Chokers	Traffic Calming/ Pedestrian & Bicycle	Dislike (61.3%)	Like: 30%, Neutral: 20% Dislike: 40%
Improvement U: Roundabout at McCall	Traffic Calming / Pedestrian & Bicycle	Dislike (70.1%)	Dislike (80%)
Improvement V: Transit Stop Relocations	Transit	Like (42.6%)	Neutral (60%)



Chapter 8: Technical Analysis of Recommended Concept Plan

The technical analysis of the proposed improvements included in the Recommended Concept Plan is based on year 2030 conditions. Using the SANDAG Series 11 traffic model data summarized in Chapter 4 and SANDAG RTP transit ridership projections, traffic operations, transit operations, bicycle connectivity and pedestrian access improvement were evaluated. The goal of the Recommended Concept Plan is improve overall mobility within the study corridor and reduce congestion for traffic where possible. This chapter summarizes the results of this analysis.

8.1 INTERSECTION OPERATIONAL ANALYSIS

Improvements in the study corridor that focus on improving traffic flow include:

- Improvement A: Moore Street at Camino Del Rio West Median Closure: The proposed improvement will restrict left turn access on all movements at the intersection thereby reducing the potential for accidents. Left turns and u-turns will be permitted at Camino Del Rio West / Hancock (signalized intersection) to offset the impacts associated with closing the median.
- Improvement B: New Traffic Signal at Rosecrans / Hancock: The traffic signal at Hancock would improve the long-term operating conditions of this intersection as well as provide for a signalized pedestrian crossing. The northbound left turn volume in the p.m. peak is forecast to increase from 195 to 445, which is not feasible to be handled at an unsignalized intersection.
- Improvement C: Extension of Sports Arena Through Camino Del Rio West-Rosecrans Intersection: Extending Sports Arena eastbound would provide direct access to Pacific Highway thereby reducing the reliance upon Midway and other routes.
- Improvement D: Rosecrans and Midway Intersection Improvements: Adding the second northbound left-turn lane and extending the southbound left-turn lanes will decrease the queue and increase capacity for traffic from Rosecrans to Midway. Adding the dedicated northbound right-turn lane will provide additional capacity and reduce delay on the northbound approach.
- Improvement F: Modified Signals at Dumas / Roosevelt and Zola / Womble: Modifying the intersections will provide improved access for traffic coming from the west side of Rosecrans from Dumas and Zola. The intersections will better serve both sides of Rosecrans and provide left-turn access that is currently prohibited.
- Improvement G: Intermittent Medians with Northbound Left-Turn Access (Area 2): Consolidating the number of access points will reduce the potential for accidents and reduce the interruptions to traffic flow along Rosecrans.



- Improvement L: Landscaped Medians and Northbound Left-Turn Pockets at Intersections (Area 3): Consolidating the number of access points will reduce the delay on the side street and reduce the interruption to traffic flow along Rosecrans.
- Improvement M: New Traffic Signal at Rosecrans / Emerson: A new traffic signal at Emerson would provide safer left-turn access from the side streets onto Rosecrans, which would likely encourage side-street traffic to divert away from nearby unsignalized intersections to the new signal at Emerson. The new traffic signal will also provide opportunities for significant reductions in vehicular delay during the peak hours for left-turning side-street traffic.
- Improvement P: Restripe Intersection of Rosecrans / Talbot: Providing the northbound left-turn lane with a shared through-right turn lane on Rosecrans will improve flow upon the approach of the intersection and will eliminate the existing weaving pattern caused by motorists going around those waiting to make the left-turn. Re-striping the southbound approach of the intersection will improve the alignment and flow of traffic to match the number approaching lanes with the number of receiving lanes, thus eliminating the need to quickly merge into the single receiving lane.

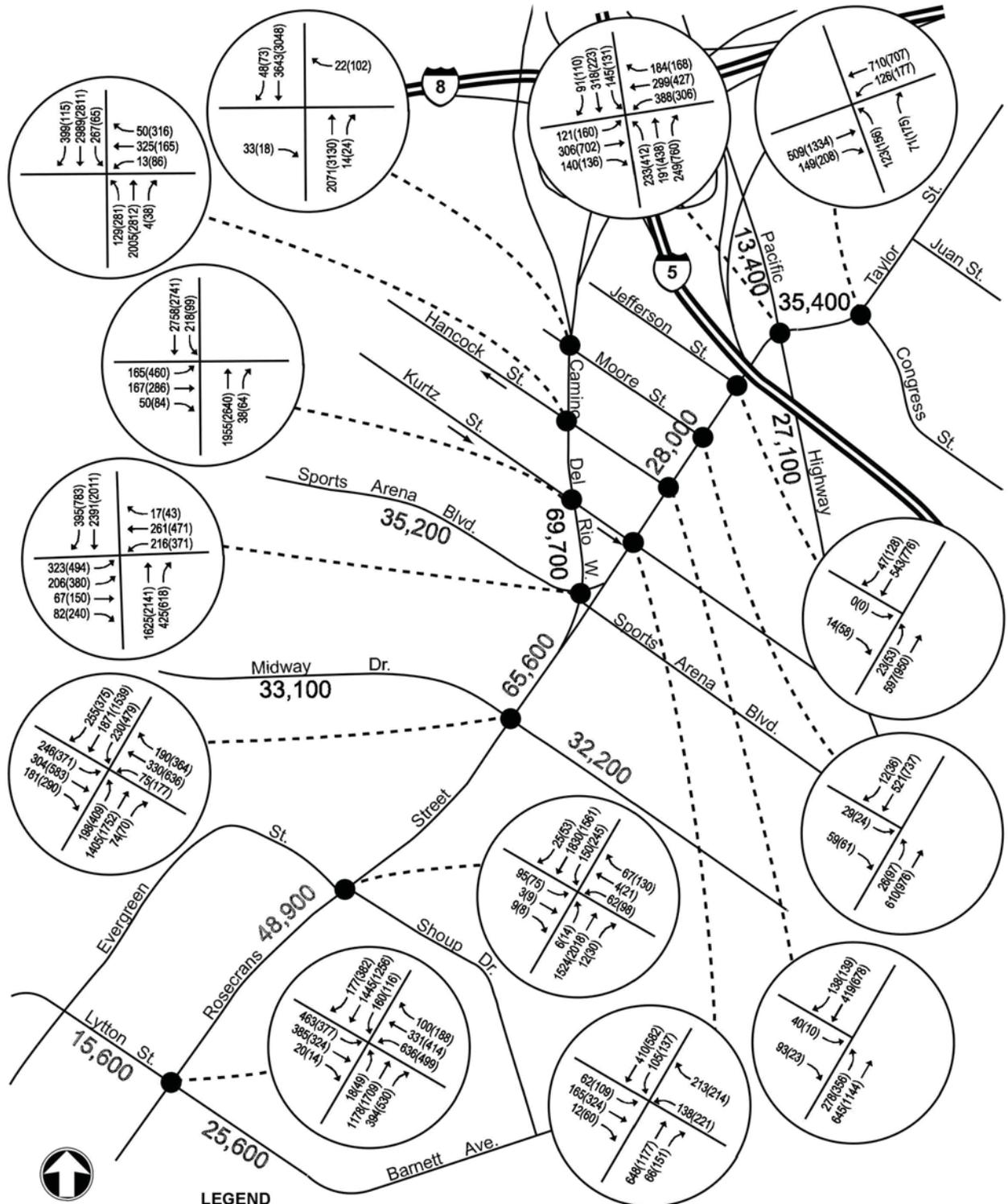
Some of the improvements included in the Recommended Concept Plan resulted in a change in travel patterns within the study area. The peak hour and ADT volumes with the Recommended Concept Plan are provided in Exhibit 8-1. Modifications to traffic patterns corresponding to the Moore Street Median Closure (Improvement A), improvements at Rosecrans/Sports Arena (Improvement C), modified signals at Dumas/Roosevelt and Zola/Womble (Improvement F), traffic signal at Emerson (Improvement M) and medians through Area 3 (Improvement L) are illustrated in Exhibits 8-2 through 8-4.

Applying the intersection geometrics included in the Recommended Concept Plan to the modified traffic volumes, illustrated in Exhibit 8-1, the intersection operational analysis and VISSIM analysis were re-evaluated. Results of the intersection level of service analysis are summarized in Table 8-1. HCM analysis worksheets are provided in Appendix 8-A. As shown in Table 8-1, with the proposed improvements, most intersections in the study corridor will operate at LOS D or better through year 2030. The following intersections are forecast to operate at LOS E or F during the peak hours with the Recommended Concept Plan:

- Rosecrans St. / Lytton St.
- Rosecrans St. / Nimitz Blvd.
- Camino Del Rio / Moore St.

Widening would be needed to improve the intersections of Rosecrans Street / Lytton Street and Rosecrans Street / Nimitz Boulevard to an acceptable level of service; however, due to right-of-way constraints, these intersections are not recommended for improvements. The median closure at intersection of Camino Del Rio / Moore Street significantly improves peak hour delay by prohibiting the left-turn movements; however the right-turns exiting Moore Street would still experience a deficient level of service due to the very heavy traffic volumes forecast on Camino Del Rio during the peak hours.

ROSECRANS CORRIDOR MOBILITY STUDY

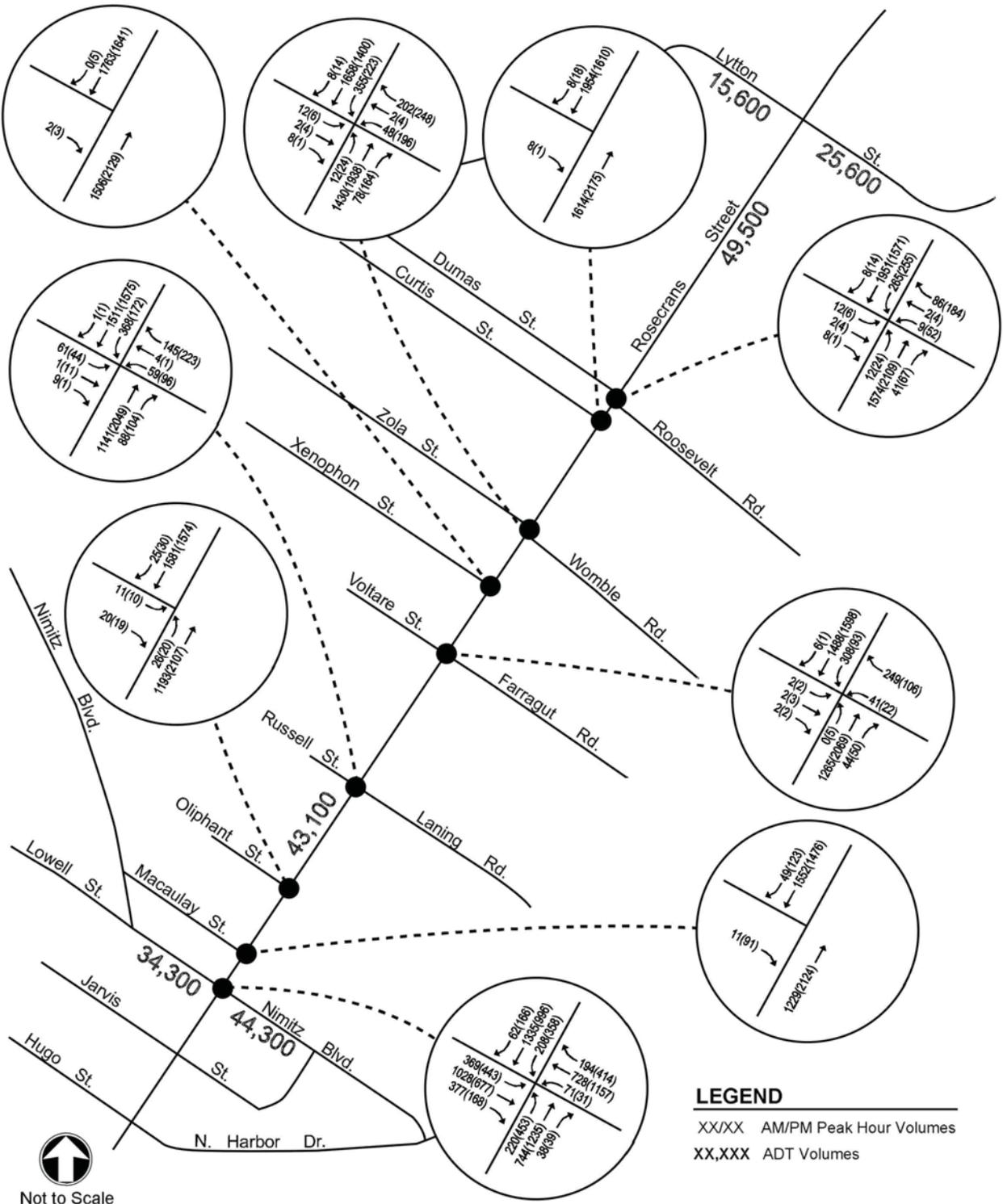


YEAR 2030 TRAFFIC VOLUMES WITH RECOMMENDED CONCEPT PLAN (AREA 1)

EXHIBIT 8-1

Technical Analysis of Preferred Concept Plan





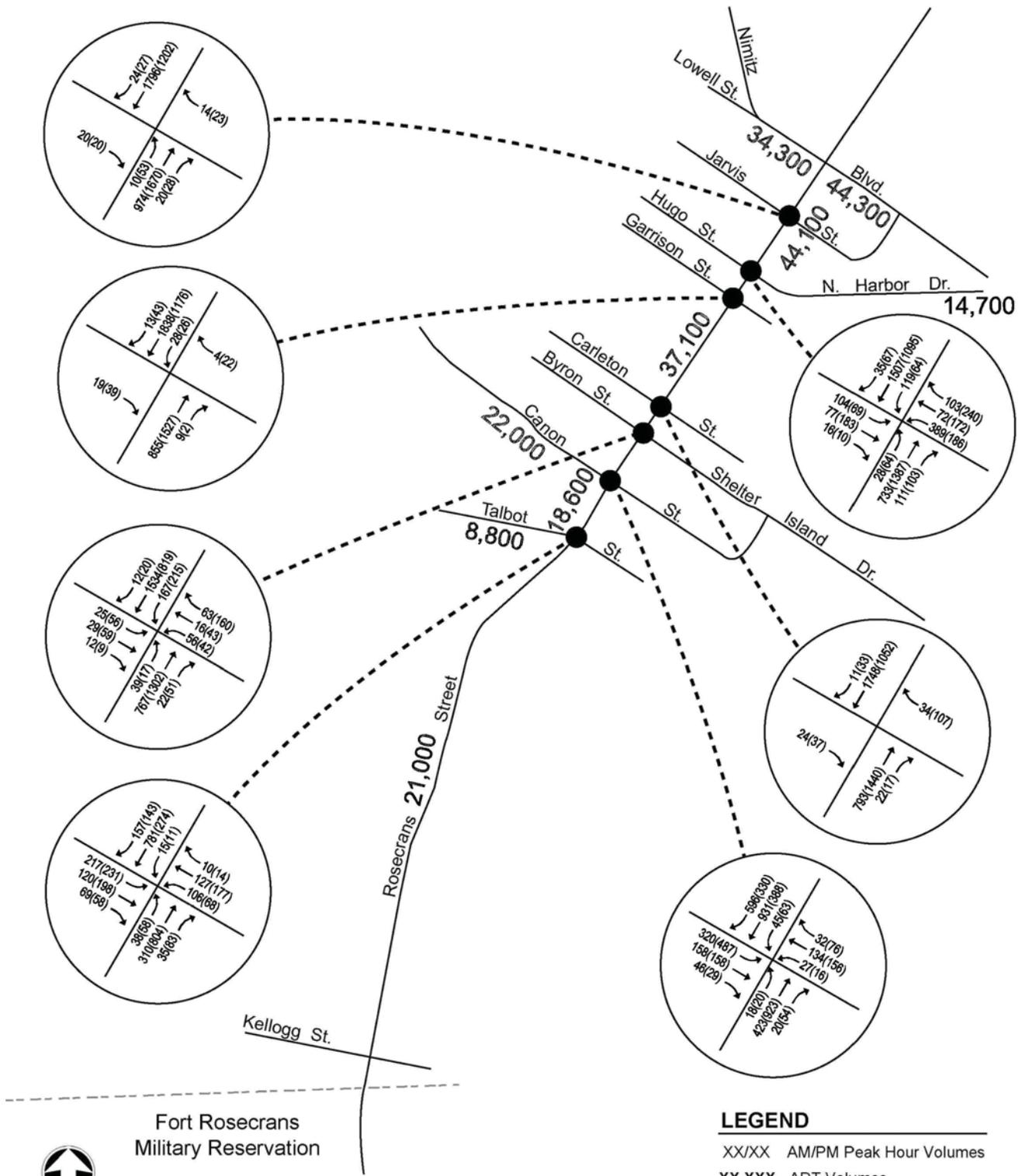
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**YEAR 2030 TRAFFIC VOLUMES WITH
 RECOMMENDED CONCEPT PLAN (AREA 2)**

EXHIBIT 8-1

ROSECRANS CORRIDOR MOBILITY STUDY



Technical Analysis of Preferred Concept Plan

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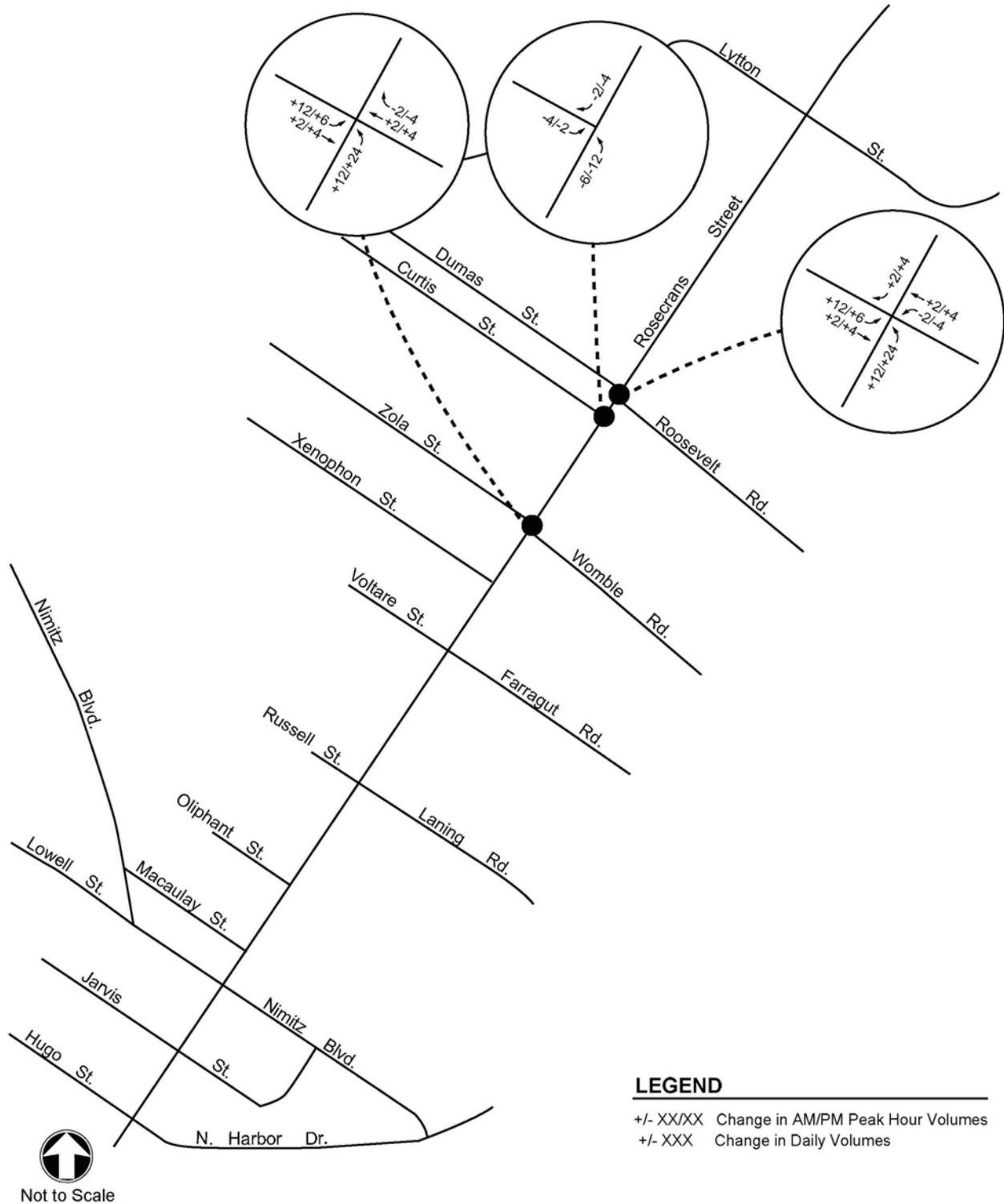


YEAR 2030 TRAFFIC VOLUMES WITH RECOMMENDED CONCEPT PLAN (AREAS 3-4)

EXHIBIT 8-1



ROSECRANS CORRIDOR MOBILITY STUDY



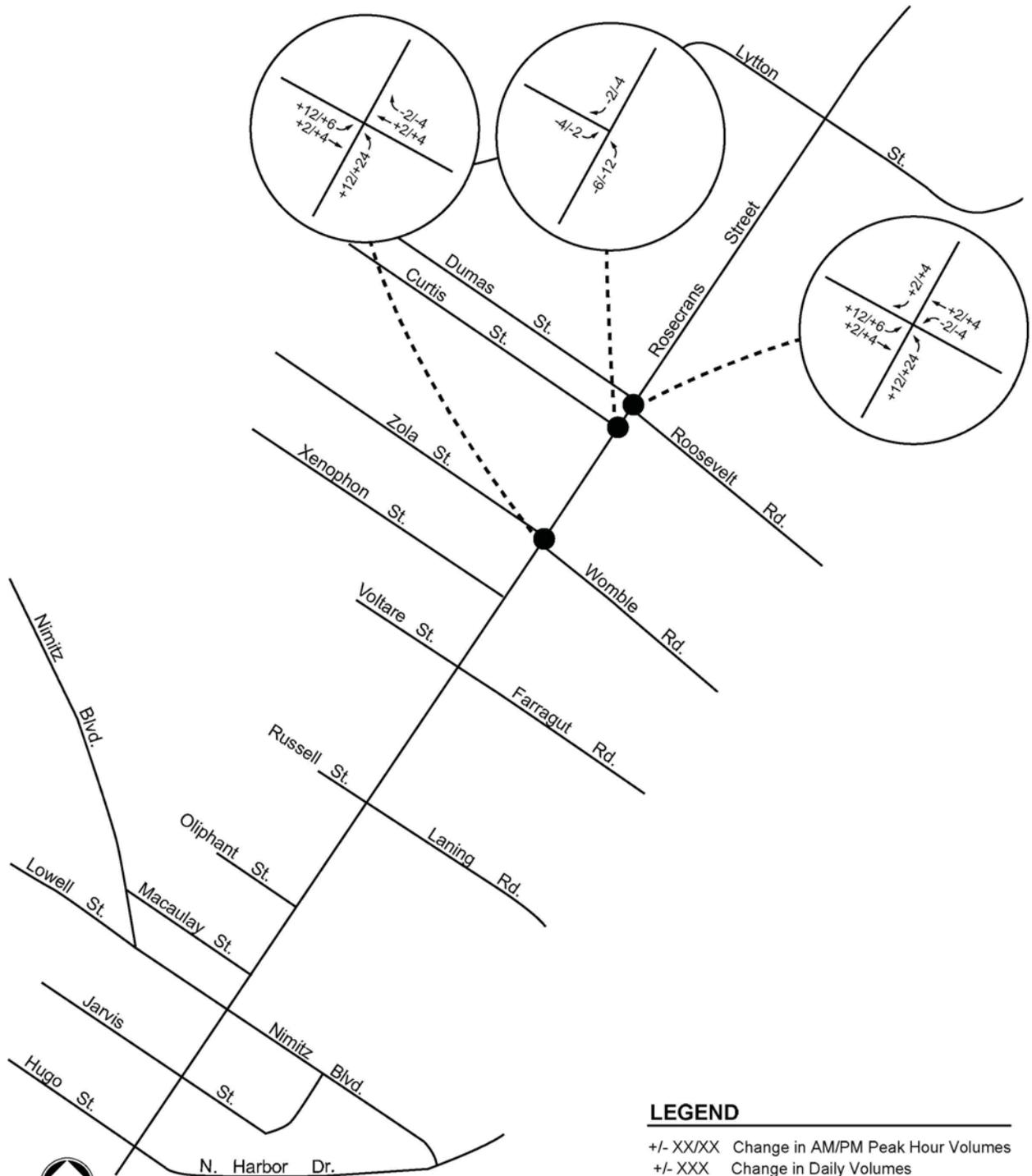
Technical Analysis of Preferred Concept Plan



AREA 2 TRAFFIC RECIRCULATION WITH RECOMMENDED CONCEPT PLAN

EXHIBIT 8-3





LEGEND

- +/- XX/XX Change in AM/PM Peak Hour Volumes
- +/- XXX Change in Daily Volumes



AREA 2 TRAFFIC RECIRCULATION WITH RECOMMENDED CONCEPT PLAN

EXHIBIT 8-3



ROSECRANS CORRIDOR MOBILITY STUDY

Table 8-1
Intersection Operational Analysis Summary

Intersection	Traffic Control (1)	Existing (2009)			2030 No Build			2030 With Recommended Plan					
		AM Peak		PM Peak	AM Peak		PM Peak	AM Peak		PM Peak			
		Delay	LOS	Delay	Delay	LOS	Delay	Delay	LOS	Delay	LOS		
2) Rosecrans-Taylor St. / Pacific Highway	S	22.8	C	25.1	C	31.6	C	57.1	E	31.6	C	52.3	D
3) Rosecrans St. / Jefferson St.	O	10.9	B	12.1	B	12.5	B	15.7	C	12.4	B	15.3	C
4) Rosecrans St. / Moore St.	O	11.7	B	11.9	B	14.4	B	15.8	C	11.8	B	14.2	B
5) Rosecrans St. / Hancock St.	(2)	8.6	A	9.4	A	11.7	B	17.0	C	20.6	C	11.9	B
6) Rosecrans St. / Kurtz St.	S	15.3	B	25.4	C	20.4	C	52.3	D	25.3	C	38.1	D
7) Rosecrans/Sports Arena/Camino D. Rio	S	23.3	C	35.5	D	43.0	D	62.9	E	17.2	B	26.6	C
8) Rosecrans St. / Midway Dr.	S	37.0	D	60.0	E	41.5	D	68.2	E	30.7	C	44.0	D
9) Rosecrans St. / N. Evergreen St.	S	15.9	B	30.3	C	20.7	C	30.7	C	13.7	B	18.6	B
10) Rosecrans St. / Lytton St.	S	47.9	D	51.7	D	77.2	E	69.2	E	67.4	E	55.0	E
11) Rosecrans St. / Roosevelt Rd.	S	10.3	B	13.3	B	11.3	B	16.2	B	20.7	C	23.2	C
12) Rosecrans St. / Curtis St.	O	20.5	C	15.5	C	17.2	C	14.6	B	14.7	B	10.0	A
13) Rosecrans St. / Womble Rd.	S	18.8	B	17.9	B	20.6	C	20.3	C	16.0	B	30.6	C
14) Rosecrans St. / Xenophon St.	O	13.6	B	12.1	B	13.3	B	12.7	B	10.0	B	10.7	B
15) Rosecrans St. / Farragut - Voltaire St.	S	20.7	C	18.1	B	23.5	C	21.8	C	23.9	C	19.1	B
16) Rosecrans St. / Russell - Laning Rd.	S	17.0	B	23.2	C	18.1	B	25.9	C	16.5	B	18.5	B
17) Rosecrans St. / Oliphant St.	O	22.6	C	14.1	B	28.2	D	19.7	C	28.1	D	19.7	C
18) Rosecrans St. / Macaulay St.	T - LTR	12.0	B	13.0	B	13.2	B	14.2	B	13.2	B	14.2	B

Note: Deficient intersection operation indicated in bold.

(1) S = Signalized, A = All-Way Stop, T = Two-Way Stop, O = One-Way Stop, LTR = Left Turn Restriction

(2) There is currently no stop control since Hancock Street is one-way westbound, away from Rosecrans Street. This intersection is proposed to be signalized under 2030 conditions with the Recommended Concept Plan.



Table 8- 1 (continued)
Intersection Operational Analysis Summary

	Intersection	Traffic Control ⁽¹⁾	Existing (2009)						2030 No Build						2030 With Recommended Plan					
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak			
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		
19)	Rosecrans St. / Nimitz Blvd.	S	40.8	D	59.3	E	113.5	F	184.3	F	116.3	F	190.0	F	190.0	F				
20)	Rosecrans St. / Jarvis St.	T	16.3	C	30.9	D	22.2	C	14.8	B	10.2	B	10.7	B	10.7	B				
21)	Rosecrans St. / N. Harbor Dr. -Hugo St.	S	15.0	B	18.0	B	29.7	C	34.9	C	30.4	C	35.3	C	35.3	C				
22)	Rosecrans St. / Garrison St.	T	79.6	F	133.6	F	185.4	F	305.7	F	11.1	B	9.8	A	9.8	A				
23)	Rosecrans St. / Emerson St.	T	NA	NA	NA	NA	NA	NA	NA	NA	12.0	B	15.0	B	15.0	B				
24)	Rosecrans St. / Carleton St.	T	146.6	F	252.0	F	322.4	F	>1000	F	10.1	B	11.2	B	11.2	B				
25)	Rosecrans St. / Shelter Island - Byron	S	13.3	B	16.7	B	10.3	B	15.4	B	11.3	B	23.5	C	23.5	C				
26)	Rosecrans St. / Canon St.	S	23.0	C	20.1	C	33.5	C	45.7	D	42.3	D	38.1	D	38.1	D				
27)	Rosecrans St. / Talbot St.	S	22.1	C	12.5	B	19.2	B	15.0	B	21.8	C	24.1	C	24.1	C				
28)	Camino del Rio W. / Moore St.	T - LTR	31.5	D	30.6	D	71.3	F	65.0	F	35.8	E	24.4	C	24.4	C				
29)	Camino del Rio W. / Hancock St.	S	10.9	B	13.2	B	29.2	C	31.4	C	29.7	C	35.2	D	35.2	D				
30)	Camino del Rio W. / Kurtz St.	S	8.5	A	13.8	B	11.6	B	20.3	C	12.1	B	17.2	B	17.2	B				

Note: Deficient intersection operation indicated in bold. NA = Not Available.

⁽¹⁾ S = Signalized, A = All-Way Stop, T = Two-Way Stop, O = One-Way Stop, LTR = Left Turn Restriction

⁽²⁾ There is currently no stop control since Hancock Street is one-way westbound, away from Rosecrans Street. This intersection is proposed to be signalized under 2030 conditions with the Recommended Concept Plan.

ROSECRANS CORRIDOR MOBILITY STUDY

8.2 ROADWAY SEGMENT OPERATIONAL ANALYSIS

The project does not include widening or narrowing Rosecrans through any of the four study areas to increase the capacity of the roadway. There are spot widening at intersections to improve traffic flow, which in turn helps reduce queue lengths and roadway segment performance between signalized intersections.

The Recommended Concept Plan results in a change in traffic patterns in some of the study areas resulting a change in ADT along some of the roadway segments, daily traffic volume may vary due to changes in traffic patterns assumed with the recirculation of traffic, particularly in Areas 1 and 3. These traffic pattern shifts were discussed in the previous section and presented in Exhibit 8-1 through 8-4.

The results of the roadway segment analysis are summarized in Table 8-2. As shown, the following segments are forecast to operate at LOS E or F without and with the Recommended Concept Plan:

- Rosecrans St., from Sports Arena Blvd. to Midway Dr.
- Rosecrans St., from Midway Dr. to Lytton St.
- Rosecrans St., from Lytton St. to Roosevelt Rd.
- Rosecrans St., from Roosevelt Rd. to Laning Rd.
- Rosecrans St., from Laning Rd. to Nimitz Blvd.
- Rosecrans St., from Nimitz Blvd. to N. Harbor Dr.
- Rosecrans St., from N. Harbor Dr. to Canon St.
- Camino Del Rio, North of Hancock St.
- Camino Del Rio, from Hancock St. to Kurtz St.
- Camino Del Rio, from Kurtz St. to Sports Arena Blvd.
- Nimitz Blvd., Southeast of Rosecrans St.
- Canon St., Northwest of Rosecrans St.
- Talbot St., Northwest of Rosecrans St.

Improving these segments to acceptable LOS D or better would require widening to provide additional travel lanes. The Midway Community Plan includes improving Rosecrans Street from six lanes to eight lanes through portions of the corridor. Although this would resolve the deficient levels of service, such widening would have a negative impact on the existing land uses along the corridor. Due to right-of-way constraints and the extraordinary cost of widening the deficient roadway segments, adding capacity to improve daily level of service is not recommended.

Long term improvements to regional circulation and transportation demand strategies may be necessary through year 2030 to reduce the total volume of traffic in the study area. Transit improvements such as improved transit service and internal shuttle service may help to reduce the passenger vehicle traffic. Transportation demand management strategies for existing and future business areas should be considered to encourage carpooling, providing shuttle service from off-site parking lots and improving access to transit for employment centers.



Caltrans has identified a number of long term improvements that will improve access to Lindberg Field, access to major transit facilities and freeway connection improvements. All these improvements will aid in reducing the passenger vehicle demand along the Rosecrans Corridor. However, the future of these improvements is uncertain as funding was unknown at the time this report was prepared. Therefore, the improvements suggested by Caltrans for the Horizon Year were not included in this analysis unless specifically in the Regional Transportation Plan.

In 2010, SANDAG will be revisiting the Regional Transportation Plan and identify projects through the year 2050. It is recommended that the City and Community work closely with SANDAG in this effort to identify these future deficiencies in the study area. Regional improvements to the I-5/I-8 interchange, connections to the freeway from Jefferson and connections to the I-8 from Kurtz will all provide congestion relief to Rosecrans Street.

Without this traffic relief, the operations along the corridor will continue to operate at LOS E/F conditions. The North Bay/Midway Community Plan should look closely at these segments and discuss the need to maintain the plan for eight lanes on Rosecrans Street. Long term redevelopment plans should consider the long term benefits of mix-use development in the area to address the traffic related issues.



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Table 8-2
Year 2030 Roadway Segment Analysis Summary

Roadway	Segment	Class	Lanes	LOS E Capacity	Existing Conditions			2030 No Build			2030 With Recommended Plan		
					ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS
Rosecrans Street	From Pacific Highway to Sports Arena Blvd.	Major	4	40,000	15,503	0.39	B	28,300	0.71	C	28,000	0.70	C
	From Sports Arena Blvd. to Midway Dr.	Major	6	50,000	59,120	1.18	F	66,700	1.33	F	65,600	1.31	F
	From Midway Dr. to Lytton St.	Major	6	50,000	46,384	0.93	E	49,200	0.98	E	48,900	0.98	E
	From Lytton St. to Roosevelt Rd.	Major	5	45,000	42,513	0.94	E	49,500	1.10	F	49,500	1.10	F
	From Roosevelt Rd. to Laning Rd.	Major	5	45,000	37,950	0.84	D	46,100	1.02	F	46,100	1.02	F
	From Laning Rd. to Nimitz Blvd.	Major	4	40,000	34,259	0.86	D	43,100	1.08	F	43,100	1.08	F
	From Nimitz Blvd. to N. Harbor Dr.	Major	4	40,000	36,450	0.91	E	44,300	1.11	F	44,100	1.10	F
	From N. Harbor Dr. to Canon St.	Major	4	40,000	34,390	0.86	D	37,100	0.93	E	37,100	0.93	E
	From Canon St. to Talbot St.	Major ⁽¹⁾	2	27,000	17,850	0.66	C	18,600	0.69	C	18,600	0.69	C
	From Talbot St. to Kellogg St.	Major ⁽¹⁾	2	27,000	15,200	0.56	B	21,000	0.78	D	21,000	0.78	D
Camino Del Rio	North of Hancock St.	Prime	7	70,000	55,300	0.79	C	77,300	1.10	F	77,300	1.10	F
	Hancock St. to Kurtz St.	Prime	7	70,000	54,400	0.78	C	71,600	1.02	F	73,200	1.05	F
	Kurtz St. to Sports Arena Blvd.	Prime	7	70,000	50,700	0.72	C	67,600	0.97	E	69,700	1.00	E
Pacific Highway	North of Rosecrans St.	Major ⁽²⁾	2	20,000	5,818	0.29	A	13,400	0.67	C	13,400	0.67	C
	South of Rosecrans St.	Prime	6	60,000	13,070	0.22	A	27,100	0.45	B	27,100	0.45	B
Sports Arena Blvd.	Northwest of Rosecrans St.	Major	5	45,000	26,780	0.60	C	35,200	0.78	D	35,200	0.78	D

Note: Deficient roadway segment operation indicated in bold.

⁽¹⁾ LOS E Capacity has been estimated based on results of the Highway Capacity Manual Urban Street Methodology.



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Table 8-2 (continued)
Year 2030 Roadway Segment Analysis Summary

Roadway	Segment	Class	Lanes	LOSE Capacity	Existing Conditions			2030 No Build			2030 With Recommended Plan		
					ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS
Midway Drive	Northwest of Rosecrans St.	Major	4	40,000	27,130	0.68	C	32,300	0.81	D	33,100	0.83	D
	Southeast of Rosecrans St.	Major	4	40,000	29,440	0.74	C	32,200	0.81	D	32,200	0.81	D
Lytton Street	Northwest of Rosecrans St.	Major ⁽²⁾	2	20,000	11,797	0.59	C	15,300	0.77	D	15,600	0.78	D
	Southeast of Rosecrans St.	Major	4	40,000	19,650	0.49	B	25,600	0.64	C	25,600	0.64	C
Nimitz Boulevard	Northwest of Rosecrans St.	Major	4	40,000	17,264	0.43	B	34,300	0.86	D	34,300	0.86	D
	Southeast of Rosecrans St.	Major	4	40,000	12,020	0.30	A	44,100	1.10	F	44,300	1.11	F
North Harbor Drive	Rosecrans St. to Scott Rd.	Major	4	40,000	6,321	0.16	A	14,000	0.35	A	14,700	0.37	A
Canon Street	Northwest of Rosecrans St.	Collector	2	15,000	12,870	0.86	D	22,000	1.47	F	22,000	1.47	F
Talbot Street	Northwest of Rosecrans St.	Collector	2	8,000	5,950	0.74	D	8,800	1.10	F	8,800	1.10	F

Note: Deficient roadway segment operation indicated in bold.

⁽¹⁾ LOS E Capacity has been estimated based on results of the Highway Capacity Manual Urban Street Methodology.

⁽²⁾ Since a published standard capacity for a 2-Lane Major does not exist, capacity is assumed to be half of a 4-Lane Major.

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8.3 TRAVEL TIME ASSESSMENT

Under existing conditions, travel time was evaluated based on a floating car assessment. Using the results of the floating car assessment, a detailed traffic model was used to evaluate the potential travel times through Area 1, where travel times under existing conditions were determined to be the highest. Area 1 extends along both Rosecrans Street and Camino Del Rio from Lytton Street to Taylor Street (along Rosecrans) and Moore Street (on Camino Del Rio).

The difference between actual travel time and modeled travel time was used to calibrate the results of the forecast Year 2030 travel times. Table 8-3 summarizes the travel time assessment for existing conditions and Year 2030 conditions without and with the Recommended Concept Plan. For 2030 conditions, the travel times were updated for both the No Build and the Recommended Concept Plan using the VISSIM simulation software program. Table 8-3 presents results of the travel time assessment conditions.

As shown, the improvements associated with the Recommended Concept Plan would result in a decrease in travel time along the corridor by as much as three minutes from Lytton Street to Taylor Street. This is primarily due to improved signal timing between intersections to reflect the year 2030 traffic volumes and the reduction in weaving between the intersections of Rosecrans/Sports Arena and Rosecrans/Kurtz. Between Lytton Street and I-8 freeway connectors, travel time is reduced by nearly four (4) minutes in the northbound direction. This is due to improved signal timing along the corridor and geometric improvements between Midway and Rosecrans. Overall, the improvements recommended are forecast to improve the travel times to near existing conditions travel times.

Table 8-3
Summary of Area One Travel Time Analysis (VISSIM Simulated for All Conditions)

Travel Time	Direction of Travel	Existing Conditions	2030 No Build	2030 With Recommended Plan	Difference RCP-NB (seconds)
Rosecrans: Lytton to Taylor Street	NB	5:45	9:32	5:56	-3:36
	SB	6:28	8:26	5:34	-2:52
Rosecrans: Lytton to Camino del Rio/ I-8	NB	4:34	9:23	4:26	-3:57
	SB	4:51	6:58	4:18	-2:40

Note: NB = No Build; PP = Recommended Plan



8.4 QUEUE LENGTH ASSESSMENT

A queue length assessment was conducted for the left-turn movements at the study intersections along the Rosecrans Corridor under existing conditions and Year 2030 conditions without and with the Recommended Concept Plan. The queuing analysis was conducted using SYNCHRO software, which reports both 50th percentile and 95th percentile queue lengths. The 50th percentile queues, which represent the average queue lengths, are reported in this queuing assessment for the signalized intersections. The 95th percentile queue lengths were used for the unsignalized intersections since SYNCHRO does not provide 50th percentile queue lengths for unsignalized intersections.

This queue length assessment focuses primarily on the major street left-turn movements along the corridor (Rosecrans and Camino Del Rio). However, for signalized intersections operating at deficient levels of service under existing and/or Year 2030 conditions, queue lengths were assessed for the left-turn movements at every approach. Queue lengths for both the a.m. and p.m. peak hours are not assessed in this queuing analysis; instead, the more critical peak hour queue lengths are reported for the purposes of this analysis.

The 50th percentile and 95th percentile queue lengths for the study intersection left-turn movements are summarized in Table 8-4. It must be noted that the more critical peak hour queue lengths are reported rather than queue lengths for both the a.m. and p.m. peak hours. Detailed SYNCHRO queue length calculation worksheets are provided in Appendix 8-B.

Table 8-4 shows that under Year 2030 conditions with the Recommended Concept Plan, based on the 50th queue lengths for signalized intersections and 95th percentile queue lengths for unsignalized intersections, left-turn lane storage capacity is exceeded at the following nine intersections:

- Rosecrans Street-Taylor Street / Pacific Highway: northbound left turn lane. The northbound left turn pocket can be lengthened by 100 feet to accommodate part of the queue. However, a new traffic signal at Pacific Highway/Sports Arena that would allow left turn traffic would help reduce the demand on this left turn movement.
- Rosecrans Street / Midway Drive: eastbound left turn lane. The west leg of Midway Drive narrows immediate west of the existing left turn pocket. Both sides of Midway Drive have existing development which takes direct access from Midway. Future redevelopment of property along Midway Drive should include widening to accommodate a minimum 200 foot left turn pockets at Midway and restrict Gaines Street to right turn in-right turn out.
- Rosecrans Street / Lytton Street: eastbound and westbound. The eastbound and westbound approaches at Lytton Street have traffic volumes that exceed the existing storage capacity of the left turn pockets. On the eastbound approach, Lytton Street is flanked by residential properties. Although dual left turn pockets would be beneficial along this section, the dual left turn pockets would require widening and encroaching into the existing residential front or back yards and would also restrict access

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for properties on the north side of Lytton Street. On the westbound approach, dual left turn lanes are currently provided (225 feet long each). Although the queue length exceed the turn pocket length, it is not feasible to further lengthen the turn pockets. Traffic volumes and signal timing should be monitored to minimize the lengths of the queue in order to optimize the use of the available left turn capacity.

- Rosecrans Street / Nimitz Boulevard: northbound, southbound, eastbound. This intersection is constrained on all approaches. Although the volume on the approach is reasonable for the left turn pocket storage, the total traffic volume through the intersection constrains the available green time to serve all the movements. Therefore, the queues exceed the available storage under all study conditions.



Table 8-4
Summary of Peak Hour Queue Length Assessment

Intersection	Control	Left-Turn Movement	Existing Conditions				2030 No Build Conditions				2030 With Recommended Plan			
			Peak Hour	Lanes	Storage (in Feet)	Queue Length ⁽¹⁾	Peak Hour	Lanes	Storage (in Feet)	Queue Length ⁽¹⁾	Peak Hour	Lanes	Storage (in Feet)	Queue Length ⁽¹⁾
Rosecrans St. - Taylor St. / Pacific Hwy.	S	NB	1	90	113		1	90	342		1	90	302	
		SB	1	220	29	PM	1	220	136	PM	1	220	108	
		EB	1	100	40		1	100	165		1	140	126	
		WB	2	155	45		2	155	163		2	155	129	
Rosecrans St. / Jefferson St.	O	NB	1	90	4	PM	1	90	6	PM	1	90	6	
Rosecrans St. / Moore St.	O	NB	1	(2)	7	PM	1	(2)	11	PM	1	(2)	11	
Rosecrans St. / Hancock St.	(3)	NB	1	90	23	PM	1	90	69	PM	2	100	98	
Rosecrans St. / Kurtz St.	S	SB	1	85	21	PM	1	85	59	PM	1	95	90	
Rosecrans St. - Camino Del Rio W. / Sports Arena Blvd.	S	NB	2	305	147		2	305	186		-	-	-	
		EB	1.5	380	265	PM	1.5	380	428	PM	2	250	250	
		WB	1.5	140	219		1.5	140	368		2	210	208	
		NB	1	280	303		2	290	162		2	420	192	
Rosecrans St. / Midway Dr.	S	SB	2	240	219	PM	2	240	259	PM	2	365	247	
		EB	2	90	158		2	90	199		2	90	197	
		WB	1	180	127		1	180	183		1	180	182	
		NB	1	180	11	PM	1	180	13	PM	1	180	15	
Rosecrans St. / N. Evergreen St.	S	SB	1	300	170		1	300	212		1	300	240	

Note: Queue lengths exceeding storage capacity are indicated in bold.

(1) Queue lengths are expressed in feet. The 50th percentile queue lengths are reported for signalized intersections, and 95th percentile queue lengths are reported for unsignalized intersections.

(2) No dedicated left-turn lane is provided on Rosecrans; northbound left-turning vehicles use the center two-way left-turn median lane.

(3) There is currently no stop control since Hancock Street is one-way westbound, away from Rosecrans Street. This intersection is proposed to be signalized under 2030 conditions with the Recommended Concept Plan.

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Table 8-4 (continued)
Summary of Peak Hour Queue Length Assessment

Intersection	Control	Left-Turn Movement	Existing Conditions				2030 No Build Conditions				2030 With Recommended Plan			
			Peak Hour	Lanes	Storage (In Feet)	Queue Length ⁽¹⁾	Peak Hour	Lanes	Storage (In Feet)	Queue Length ⁽¹⁾	Peak Hour	Lanes	Storage (In Feet)	Queue Length ⁽¹⁾
Rosecrans St. / Lytton St.	S	NB	1	100	0	1	100	9	1	180	19			
		SB	2	280	50	2	280	70	2	380	72			
		EB	1	180	362	1	180	526	1	180	562			
		WB	2	225	243	2	225	286	2	225	338			
Rosecrans St. / Roosevelt Rd.	S	NB	0	0	0	0	0	0	1	105	5			
		SB	1	290	95	1	290	114	1	280	118			
Rosecrans St. / Curtis St.	O	NB	1	40	0	1	40	0	-	-	-			
Rosecrans St. / Womble Rd.	S	NB ⁽⁴⁾	1	90	0	1	90	0	1	70	11			
		SB	1	235	125	1	235	150	1	180	150			
Rosecrans St. / Xenophon St.	O	NB	1	40	0	1	40	0	PM	1	40	0		
Rosecrans St. / Farragut – Voltaire St.	S	NB	1	75	0	1	75	0	1	75	0			
		SB	1	240	212	1	240	251	1	280	273			
Rosecrans St. / Russell - Laning Rd.	S	NB	1	85	0	1	85	0	1	85	0			
		SB	1	335	272	1	335	311	1	335	251			
Rosecrans St. / Oliphant St.	O	NB	1	70	4	1	70	6	AM	1	70	4		

Note: Queue lengths exceeding storage capacity are indicated in bold.

⁽¹⁾ Queue lengths are expressed in feet. The 50th percentile queue lengths are reported for signalized intersections, and 95th percentile queue lengths are reported for unsignalized intersections.

⁽²⁾ No dedicated left-turn lane is provided on Rosecrans; northbound left-turning vehicles use the center two-way left-turn median lane.

⁽³⁾ There is currently no stop control since Hancock Street is one-way westbound, away from Rosecrans Street. This intersection is proposed to be signalized under 2030 conditions with the Recommended Concept Plan.

⁽⁴⁾ U-turn only lane provided under Existing and 2030 No Build conditions. The Recommended Concept Plan includes converting this intersection into an off-set four-way intersection, and NB lane will be converted to a LT turn lane.



Table 8-4 (continued)
Summary of Peak Hour Queue Length Assessment

Intersection	Control	Left-Turn Movement	Existing Conditions				2030 No Build Conditions				2030 With Recommended Plan			
			Peak Hour	Lanes	Storage (in Feet)	Queue Length ⁽¹⁾	Peak Hour	Lanes	Storage (in Feet)	Queue Length ⁽¹⁾	Peak Hour	Lanes	Storage (in Feet)	Queue Length ⁽¹⁾
Rosecrans St. / Nimitz Blvd.	S	NB	1	185	386		1	185	675		1	145	670	
		SB	1	280	161	PM	1	280	485	PM	1	280	530	
		EB	1	100	297		1	100	645		1	100	651	
		WB	1	70	18		1	70	32		1	70	32	
Rosecrans St. / Jarvis St.	T	NB	1	75	0	PM	1	75	3	PM	1	140	7	
		SB	1	40	4		1	40	7		-	-	-	
Rosecrans St. / N. Harbor Dr.-Hugo St.	S	NB	1	55	17	PM	1	55	37	PM	1	55	56	
		SB	1	65	37		1	65	68		1	65	68	
Rosecrans St. / Garrison St.	T	NB	1	70	3	PM	1	70	2	PM	-	-	-	
		SB	1	70	5		1	70	5		1	100	5	
Rosecrans St. / Emerson St.	T-NB S-PP ⁽⁵⁾	NB	1	75	5 ⁽⁶⁾	PM	1	75	5 ⁽⁶⁾	PM	1	75	57	
		SB	1	75	10 ⁽⁶⁾		1	75	10 ⁽⁶⁾		1	175	164	
Rosecrans St. / Carleton St.	T	SB	1	75	9	PM	1	75	11	PM	-	-	-	
Rosecrans St. / Shelter Island Dr. - Byron St.	S	NB	1	150	0	AM	1	150	7	PM	1	130	7	
		SB	1	185	105		1	185	96		1	185	178	

Note: Queue lengths exceeding storage capacity are indicated in bold.

⁽¹⁾ Queue lengths are expressed in feet. The 50th percentile queue lengths are reported for signalized intersections, and 95th percentile queue lengths are reported for unsignalized intersections. No dedicated left-turn lane is provided on Rosecrans; northbound left-turning vehicles use the center two-way left-turn median lane.

⁽²⁾ There is currently no stop control since Hancock Street is one-way westbound, away from Rosecrans Street. This intersection is proposed to be signalized under 2030 conditions with the Recommended Concept Plan.

⁽³⁾ U-turn only lane provided under Existing and 2030 No Build conditions. The Recommended Concept Plan includes converting this intersection into an off-set four-way intersection, and NB lane will be converted to a LT turn lane.

⁽⁴⁾ T-NB = Two way stop under existing and 2030 no build conditions; S-PP = Signalized under 2030 conditions with Recommended Plan.

⁽⁵⁾ Queue length estimated based on findings at Rosecrans / Garrison and at Rosecrans / Carleton under Existing and 2030 No Build conditions.

Table 8-4 (continued)
Summary of Peak Hour Queue Length Assessment

Intersection	Control	Left-Turn Movement	Existing Conditions			2030 No Build Conditions			2030 With Recommended Plan		
			Peak Hour	Lanes	Storage (in Feet)	Queue Length ⁽¹⁾	Peak Hour	Lanes	Storage (in Feet)	Queue Length ⁽¹⁾	Peak Hour
Rosecrans St. / Canon St.	S	NBL-T ⁽⁷⁾	1	-	195	1	-	237	1	60	6
		SB	1	50	38	1	50	28	1	115	21
Rosecrans St. / Talbot St.	S	NBL-T ⁽⁷⁾	1	-	43	1	-	137	1	115	12
		NBL-T ⁽⁷⁾	1	-	188	1	-	15	1	125	6
Camino del Rio W. / Moore St.	T-LTR ⁽⁸⁾	NB	1	140	0	1	140	0	-	-	-
		SB	1	175	66	1	175	220	-	-	-
Camino del Rio W. / Hancock St.	S	NB	1	100	99	1	100	123	2	195	72
		SB	-	-	-	-	-	-	1	280	278
Camino del Rio W. / Kurtz St.	S	SB	1	110	131	1	110	199	2	120	119

Note: Queue lengths exceeding storage capacity are indicated in bold

⁽¹⁾ Queue lengths are expressed in feet. The 50th percentile queue lengths are reported for signalized intersections, and 95th percentile queue lengths are reported for unsignalized intersections.

⁽²⁾ No dedicated left-turn lane is provided on Rosecrans; northbound left-turning vehicles use the center two-way left-turn median lane.

⁽³⁾ There is currently no stop control since Hancock Street is one-way westbound, away from Rosecrans Street. This intersection is proposed to be signalized under 2030 conditions with the Recommended Concept Plan.

⁽⁴⁾ U-turn only lane provided under Existing and 2030 No Build conditions. The Recommended Concept Plan includes converting this intersection into an off-set four-way intersection, and NB lane will be converted to a LT turn lane.

⁽⁵⁾ T-NB = Two way stop under Existing and 2030 No Build conditions; S-PP = Signalized under 2030 conditions with Recommended Plan.

⁽⁶⁾ Queue length estimated based on findings at Rosecrans / Garrison and at Rosecrans / Carleton under Existing and 2030 No Build conditions.

⁽⁷⁾ Shared left-turn / through lane. A dedicated left-turn lane will be provided under the Recommended Concept Plan.

⁽⁸⁾ Left-turn restriction at EB and WB approaches only under Existing and 2030 No Build conditions. All approaches will have a left-turn restriction under Recommended Concept Plan.



8.5 TRAFFIC SIGNAL WARRANTS

A traffic signal warrant analysis was conducted for the intersections of Rosecrans Street / Hancock Street and Rosecrans Street / Emerson Street to justify the need for the proposed traffic signals at these two intersections. The traffic signal warrants were conducted in accordance with the guidelines published in the Manual on Uniform Traffic Control Devices (MUTCD – 2006 Edition). Chapter 4C of the MUTCD identifies various warrants that if met, provide the justification needed for the installation of a traffic signal. The individual traffic signal warrants that are being analyzed this study include:

- Warrant 2 - Four-Hour Vehicular Volume.
- Warrant 3 - Peak Hour.
- Warrant 4 - Pedestrian Volume.
- Warrant 7 - Crash Experience.
- Table 4C-101 from MUTCD (2006) – ADT Estimate Form

To determine if these intersections are justified for the installation of a traffic signal, it must meet at least one of the signal warrants outlined in Chapter 4C of the 2006 California MUTCD (CA MUTCD). The traffic signal warrants were conducted for existing conditions and for Year 2030 conditions with the Recommended Concept Plan.

Rosecrans Street / Hancock Street

Rosecrans Street / Hancock Street is an unsignalized, “T” intersection that is uncontrolled since Hancock Street is one-way leading away from Rosecrans Street. To perform the signal warrants at this location, only the traffic volumes from the two conflicting turning movements were used, with the southbound approach used for the major street volumes and the northbound left-turn used for the minor street volumes.

The results for the traffic signal warrants are summarized in Table 8-5 below. The traffic signal warrant worksheets can be found in Appendix 8-C. As shown in Table 8-5, the following traffic signal warrants were satisfied at Rosecrans Street / Hancock Street under Year 2030 No Build conditions:

- Warrant 3 (Peak Hour)
- Table 4C-101 (ADT Estimate)

Rosecrans Street/Emerson Street

This intersection is currently unsignalized with STOP control on the side streets. The Recommended Concept Plan includes both signaling this intersection as well as constructing raised medians through the corridor to constrain left turn access from the side streets onto Rosecrans Street both east and west of Emerson. It is anticipated that the traffic demand on Emerson will increase both due to the attractiveness of the traffic signal at this location, the co-location of the transit stop at the new signal and the restricted left turn access at the nearby side streets. With these traffic adjustments, the Peak Hour Signal Warrant (Warrant 3) is met under 2030 conditions.

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Table 8-5
Summary of Traffic Signal Warrant Analysis

Intersection	Warrant				
	2	3	4	7	Table 4C-101
Existing Conditions					
Rosecrans St. / Hancock St.					
Rosecrans St. / Emerson St.					
Year 2030 No Build Conditions					
Rosecrans St. / Hancock St.		✓			✓
Rosecrans St. / Emerson St.		✓			

✓ = Warrant Satisfied

8.6 PEDESTRIAN ACCESSIBILITY ASSESSMENT

As summarized in Chapter 4 of this document, the following intersections are anticipated to have more than 100 pedestrian crossings during the peak a.m. or p.m. peak period:

- Rosecrans Street – Taylor Street / Pacific Coast Highway – 472 a.m., 418 p.m.
- Rosecrans Street / Hancock Street – 30 a.m., 211 p.m.
- Rosecrans Street / Kurtz Street – 105 a.m., 153 p.m.
- Rosecrans Street / Sports Arena-Camino del Rio – 138 a.m., 202 p.m.
- Rosecrans Street / Midway Street – 95 a.m., 223 p.m.
- Rosecrans Street / Womble Road – 121 a.m., 49 p.m.
- Rosecrans Street / Nimitz St. – 212 a.m., 255 p.m.
- Rosecrans Street / Carleton Street – 116 a.m., 79 p.m.

Based on 2009 pedestrian data, approximately 1,525 pedestrian crossings occur during the a.m. peak period (7:00 to 9:00 a.m.) and 2,105 occur during the p.m. peak period. By the year 2030, pedestrian activity is forecast to increase to 2,311 pedestrian crossings in the a.m. peak and 2,808 in the p.m. peak periods. The increase in pedestrian activity warrants further evaluation to ensure that pedestrian capacity on sidewalks is being met.

To meet the forecast demand for pedestrians by the year 2030, a number of pedestrian related improvements were identified for the study corridor under the Recommended Concept Plan:

- Improvement B: New sidewalks on Rosecrans Street (Pacific Highway to Sports Arena): New sidewalks would provide for a continuous ADA compliant pedestrian route between the Transit Center and activity centers in the Midway community. The associated curb extensions or curb reconstructions would improve the visibility of pedestrians and buffer existing on-street parking.



- Improvements I, N: Side-Street Curb Extensions to Reduce Crossing Distance (Areas 2-3): Providing curb extensions will improve the visibility of pedestrians, reduce the crossing distance and reduce exposure time for pedestrians crossing the street.
- Improvement M: New Traffic Signal at Rosecrans / Emerson: Providing a new traffic signal with crosswalks will encourage safer pedestrian crossings and help minimize speeding through the area.
- Improvement Q: Complete Sidewalks on West Side of Street (Area 4): Providing sidewalks on at least one side of the road will provide pedestrians with a continuous path through this neighborhood. Providing sidewalks on the west side will give pedestrians a safer place to walk instead of walking in the bike lanes next to vehicular traffic.
- Improvement R: Curb Extensions at Owen and Bessemer (Area 4): Bessemer and Owen are two intersections along the corridor that provide pedestrian access to walking paths along San Diego Bay to the east of Rosecrans Street. During the summer or during events in Point Loma parking along Rosecrans and in the adjacent neighborhoods is at a premium. During these times, the parked vehicles also make it difficult for motorists to see pedestrians waiting to cross the street. The purpose of the curb extension is to reduce the traffic speeds and improve pedestrian visibility.

Approximately 30,800 linear feet of sidewalks are currently provided along the entire study corridor, which includes both Rosecrans Street and Camino Del Rio. The Recommended Concept Plan proposes to provide an additional 2,100 linear feet of new sidewalks in locations with currently discontinuous sidewalks, which does not include the sidewalks that will need to be reconstructed or replaced. The Recommended Concept Plan will increase the total linear feet of sidewalks along the corridor to approximately 32,900 feet. Other pedestrian improvements proposed with the Recommended Concept Plan include 71 new curb ramps and 39 new crosswalks along the corridor.

8.7 BICYCLE CONNECTIVITY ASSESSMENT

As summarized in Chapter 4 of this document, the following intersections are anticipated to have more than 100 bicycles observed through the intersection during the peak a.m. or p.m. peak period:

- Rosecrans Street – Taylor Street / Pacific Coast Highway – 76 a.m., 149 p.m.
- Rosecrans Street / Kurtz Street – 45 a.m., 106 p.m.

Based on 2009 bicycle data, approximately 476 were observed during the a.m. peak period (7:00 to 9:00 a.m.) and 687 occur during the p.m. peak period along the Rosecrans Corridor. By the year 2030, bicycle activity is forecast to increase to 788 bicycle trips along the corridor in the a.m. peak and 1,091 in the p.m. peak periods.

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It should be noted that the highest bicycle activity along the corridor occurs in Area 1 along Rosecrans Street between the Old Town Transit Center and Sports Arena Boulevard. Through this section, there are currently no bicycle lanes and many of the sidewalks are discontinuous.

When reviewing the forecast bicycle volume for the study area, the east –west bicycle traffic (crossing Rosecrans Street) exceeds the north-south bicycle traffic (traveling along Rosecrans Street). Therefore improvements for bicycles should consider both the addition of bicycle lanes and bicycle loops (within the intersections for detection at signalized intersection) but also connections to regional bicycle facilities from the corridor such as the San Diego River Trail and future CycleTrack facilities.

To meet the goals of the community plan and the City of San Diego Bicycle Plan, the following bicycle related improvements were identified for the study corridor under the Recommended Concept Plan:

- Improvement B: New Bicycle Lanes on Rosecrans Street (Pacific Highway to Sports Arena): New bike lanes on Rosecrans Street from Pacific Highway to Sports Arena will provide bicycle connectivity between the Old Town and Midway business districts.
- Improvement E: Bicycle Lanes on Rosecrans and Removal of Parking (Area 1): Bike lanes would provide for a continuous bicycle route between the Old Town Transit Center and the residential communities and commercial areas in Point Loma.
- Improvement H: Wider Bicycle Lanes from Lytton to Roosevelt (Area 2): Widening the bike lanes will provide additional room for bicyclists traveling along Rosecrans and provide an additional buffer from vehicular traffic. Providing wider bike facilities may encourage additional use of the bike lanes. Currently, bicyclists may be seen riding in the opposite direction of traffic or on the sidewalk due to unwillingness of riding the in existing bike lanes.

The study corridor currently includes approximately 21,000 feet of Class Two bicycle lanes. The Recommended Concept Plan proposes to provide an additional 20,000 feet of Class Two bike lanes, which increases the total length of bike lanes along the study corridor to approximately 41,000 feet.



8.8 TRANSIT ANALYSIS

To improve the future transit needs of the community, the following transit related improvements were identified for the study corridor under the Recommended Concept Plan:

- Improvement B: Improved Bicycle Lanes and Sidewalks on Rosecrans (Old Town to Sports Arena): This improvement includes construction of sidewalks and bicycle lanes, both of which improve access to the Transit Center from the land uses in the North Bay portion of the study area. The improvement also includes extending the length of the existing Transit Queue Jump lane at Rosecrans Street /Pacific Highway. This improvement will allow the buses to bypass the existing through lane queue. This may reduce the travel time for the bus by as much as __ seconds.
- Improvement D: Rosecrans and Midway Transit Queue Jump Lane: The northbound and southbound right-turn lanes included in the Recommended Concept Plan are proposed to allow transit queue jumping in the long-term future, which would help to improve transit efficiency and travel time between transit stops. Due to the heavy traffic conditions on Rosecrans Street, a southbound queue jump lane would reduce transit delay by as much as __ seconds by year 2030 with the Preferred Concept Plan.
- Improvements J, O, V: Consolidation and Relocation of Transit Stops: Consolidating transit stops may improve transit efficiency by removing underutilized stops. Relocating transit stops to signalized intersections may encourage pedestrians to use crosswalks and reduce the frequency of illegal crossings.

There are 42 transit stops currently provided along the Rosecrans corridor. The transit improvements listed above include the removal of eight existing transit stops. In addition, seven transit stops are proposed to be relocated to near signalized intersections and other locations with safer pedestrian access, and one new transit stop is proposed to be added to the study corridor. The Recommended Concept Plan proposes a total of 35 transit stops to be provided on the Rosecrans corridor.

8.9 SUMMARY

The findings of the intersection operational analysis found that most intersections will operate at LOS D or better under Year 2030 conditions with the Recommended Concept Plan. Additional intersection capacity would be needed at Rosecrans Street / Lytton Street and Rosecrans Street / Nimitz Boulevard to improve operations to LOS D or better during the peak hours. Improvements are not recommended at these two intersections due to right-of-way constraints where widening would be needed to provide additional approach lanes.

The roadway segment operations analysis results show that 13 roadway segments are forecast to operate at LOS E or worse under Year 2030 conditions with the Recommended Concept Plan. Due to right-of-way constraints and the extraordinary cost of widening the deficient roadway segments, adding capacity to improve daily level of service is not recommended. Instead, improvements have been recommended at several key intersections that would improve

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traffic flow along the corridor. In addition, the proposed raised medians along much of the Rosecrans corridor will reduce the number of conflicting traffic maneuvers at the unsignalized intersections, thus improving traffic flow along these segments.

The findings of the travel time assessment show that travel times will decrease between two and four minutes from Year 2030 No Build conditions to Year 2030 conditions with the Recommended Concept Plan. This improvement is due primarily to improved signal timing as well as geometric improvements that increase capacity in Area 1.

The queue length assessment findings show that queue lengths are forecast to exceed left-turn storage capacity at nine intersections during the peak hours under Year 2030 conditions with the Recommended Concept Plan. Providing the needed left-turn storage capacity may not be possible at some locations due to limitations such as short intersection spacing and right-of-way constraints where widening is needed. A closer evaluation of left-turn storage needs should be considered to maximize available capacity for locations where queue lengths are forecast to exceed the proposed storage capacity.

The results of the traffic signal warrant analysis show that two warrants are satisfied at Rosecrans Street / Hancock Street under Year 2030 No Build conditions, which justifies the need for a traffic signal as proposed with the Recommended Concept Plan. Although no warrants were satisfied at Rosecrans Street / Emerson Street, the installation of a traffic signal would result in the diversion of some of the left-turning traffic from other unsignalized intersections to the signal at Emerson. A traffic signal at Rosecrans Street / Emerson Street would consolidate much of the left-turning activity to one intersection, thus reducing conflicting traffic maneuvers at the other nearby unsignalized intersections. The proposed signal at Rosecrans / Emerson will also provide safe pedestrian access and reduce the instances of "jaywalking" across heavy traffic along Rosecrans Street.

The findings of the pedestrian accessibility assessment show that by 2030, eight intersections along the corridor will experience 100 or more pedestrian crossings during the a.m. or p.m. peak period. Pedestrian activity from 2009 to 2030 is forecast to increase by over 50% during the a.m. peak period and over 30% during the p.m. peak period. The Recommended Concept Plan includes the construction of 2,100 linear feet of sidewalks where pedestrian connectivity is currently discontinuous. Other pedestrian improvements proposed with the Recommended Concept Plan include 71 new curb ramps and 39 new crosswalks along the corridor.

The results of the bicycle connectivity assessment show that the highest bicycle activity occurs in Area 1 along Rosecrans Street between the Old Town Transit Center and Sports Arena Boulevard, where no bicycle lanes are currently provided. Bicycle activity from 2009 to 2030 is forecast to increase by approximately 65% during the a.m. peak period and about 60% during the p.m. peak period.

The Recommended Concept Plan proposes to provide continuous Class Two bicycle lanes along the Rosecrans corridor from the Old Town Transit Center to the southern terminus of Rosecrans Street at the Fort Rosecrans military facility, which will meet the goals of the City of San Diego Bicycle Master Plan. Approximately 20,000 feet of Class Two bike lanes will be added to the corridor with the Recommended Concept Plan.



The transit analysis findings show that the number of transit trip ends per day is expected to increase by 116% from 2009 to 2030 along the Rosecrans corridor. As traffic operations are expected to worsen by Year 2030 along much of the corridor, transit operations will be hampered by slower run times and longer wait times for buses. Transit queue jump lanes are proposed at Rosecrans / Midway and at Rosecrans / Pacific Highway to improve future transit performance. Additional transit priority lanes may need to be considered at other locations such as Rosecrans / Lytton and Rosecrans / Nimitz to accommodate the forecast increase in transit ridership.

The Recommended Concept Plan also include the removal of under-utilized transit stops and relocation of several transit stops to preferable locations, such as near signalized intersections that provide protected pedestrian access. The consolidation and relocation of transit stops will serve to improve transit performance and increase pedestrian safety near the transit stops.



Chapter 9: Cost Estimates and Conceptual Design

This chapter focuses on the conceptual design and probable costs for the improvements identified in the Recommended Concept Plan. Conceptual engineering is based on City of San Diego design standards, Street Design Manual, and Traffic Calming Manual. Cost estimates have been prepared in accordance with City of San Diego Cost Estimating guidelines. In addition to estimating the cost to construct the improvement, environmental costs, design costs, construction costs, administrative costs and other project related costs have been estimated as a percentage of the total construction costs.

9.1 RIGHT OF WAY ASSUMPTIONS

Right of way costs are not included in the estimates of costs included in this document. However, it is feasible to assume that right of way will need to be acquired to complete some of the improvements identified in the Recommended Concept Plan. Locations anticipated to affect existing right of way include:

- Improvement B: Sidewalks & Bicycle Lanes on Rosecrans from Old Town to Sports Arena
- Improvement C: Rosecrans & Sports Arena Intersection
- Improvement D: Rosecrans & Midway Intersection
- Improvement E: Bicycle Lanes on Rosecrans (Midway to Lytton) – near the intersection of Lytton
- Improvement Q: Complete Sidewalks on West Side of Rosecrans (south of Talbot)

Since the conceptual engineering is based on limited information pertaining to property lines, utilities and other factors, the true impacts to right of way are unknown. Therefore, it is premature to assume the right of way costs associated with these improvements. Details of the impacts to right of way will be resolved as part of a more detailed design effort when these improvements move forward.

9.2 CONCEPTUAL ENGINEERING DESIGN CRITERIA

The elements of the concept plan are based upon the design standards established in the San Diego Regional Design Drawings and City of San Diego Street Design Manual. As a minimum the following design criteria were established:

Intersection and Road Design Criteria:

- Minimum 11 foot through lanes
- Minimum 10 foot left and right turn lanes
- Minimum 5 foot bicycle lanes
- Raised median nose shall be no less than four (4) feet wide.
- Planting in the medians shall not obstruct line of sight for the side streets



Traffic Signal Design Criteria:

- New or modified traffic signals include the installation of bicycle loops in the pavement where existing or proposed bicycle lanes connect at the intersection.
- New or modified traffic signals shall include the installation of ADA accessible features including audible push button and/or count down timers.
- New or modified traffic signals shall consider the use of highly reflective paint to improve the visibility of pedestrians. The use of highly reflective paint shall be determined based on the volume of pedestrian traffic, volume of vehicular traffic, and visibility of pedestrians at or near the intersection.

Pedestrian Facility Design Criteria

- Minimum 4 foot sidewalks (where new installations occur)
- New directional curb ramps at intersections where sidewalk improvements or intersection improvements are recommended. New curb ramps designed to meet current ADA standards.
- Curb extensions designed to meet Traffic Calming Design Criteria established in the Street Design Manual. All curb extensions include improvements to drainage at the curb extension to reduce the potential for ponding or flooding at the intersection. All curb extensions shall have directional curb ramps that meet current ADA standards.
- Location of transit stops along the corridor is based upon the surrounding land use, existing/future demand and proximity to the intersection. When possible, transit stops were co-located with signalized intersections to improve pedestrian accessibility.

Traffic Calming Design Criteria

- All traffic calming devices proposed for the corridor are designed based on the criteria established in the City's Street Design Manual.

9.3 COST ESTIMATE ASSUMPTIONS

Construction additions and other additions account for contingencies, field orders, environmental, design and administrative costs based on City of San Diego unit costs for preparing cost estimates. Mobilization and Contingency are included in the construction cost, where all the other mark-ups are included in the overhead costs. Overhead costs account for a markup of over 92% of the proposed construction costs. The percentages used in this analysis are consistent with City of San Diego's requirements for estimating probable costs. A description of each of these items is provided below. Percentages provided are the percentage of the total construction cost allocated to each additional cost identified.

- Mobilization is a construction related cost (2%). It is the fee the contractor will charge to the City to get the necessary equipment on-site to do the identified work. Four percent of the probable cost has been included in the estimate to account for mobilization.

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- Contingency is a construction related cost (25%). It is a buffer that will offset change in unit costs and quantities as the process transitions from conceptual design to final engineering design. It accounts for elements of the project that are uncovered in final design cannot reasonably be identified in the conceptual design phase.
- Bond Costs are a construction related cost (2%). These are the costs associated with bonding for the individual projects.
- Field Orders are a construction related cost (5%). It accounts for changes in the field that are necessary to address issues that arise in the field during construction of the project.
- Design is an additional, non-construction related cost (25%). It relates to costs associated with final design engineering.
- Administrative cost is an additional, non-construction related cost (25%). This is the cost associated with plan check fees, inspection services, contract administration and other city related services.
- Environmental cost is an additional, non-construction related cost (15%). It relates to the costs associated with preparing and processing the necessary environmental documents for the project. This includes the processing of environmental permits and coordination with the environmental protection agencies.

9.4 COST ESTIMATES BY STUDY AREA

The project study area was broken into four distinct areas. Table 9-1 summarizes the probable costs for the design, construction and administrative costs associated with the project, in year 2010 dollars for Areas 1 through 4. The total design, construction and administrative costs for the corridor are broken down as follows:

- Area 1: \$7,595,585
- Area 2: \$1,887,084
- Area 3: \$1,997,443
- Area 4: \$1,838,713

Combined, the cost for the improvements along the Rosecrans Corridor is estimated at \$13.3 million, which includes construction, design and administrative costs in year 2010 dollars.



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Table 9-1.
Area 1 Cost Estimates

Area	Construction	Contingency (25%)	Bond (2%)	Field Orders (25%)	Mobilization (2%)	Admin (25%)	Design (25%)	Environmental (15%)	Total
Improvement A	\$334,225	\$83,556	\$8,356	\$104,445	\$8,356	\$104,445	\$104,445	\$62,667	\$810,496
Improvement B	\$520,788	\$130,197	\$13,020	\$162,746	\$13,020	\$162,746	\$162,746	\$97,648	\$1,262,912
Improvement C	\$1,550,291	\$387,573	\$38,757	\$484,466	\$38,757	\$484,466	\$484,466	\$290,680	\$3,759,456
Improvement D	\$595,130	\$148,783	\$14,878	\$185,978	\$14,878	\$185,978	\$185,978	\$111,587	\$1,443,191
Improvement E	\$131,765	\$32,941	\$3,294	\$41,177	\$3,294	\$41,177	\$41,177	\$24,706	\$319,530
Total Area 1	\$3,132,200	\$785,175	\$78,517	\$981,469	\$78,517	\$981,469	\$981,469	\$588,881	\$7,616,197

Table 9-2.
Area 2 Cost Estimates

Area	Construction	Contingency (25%)	Bond (2%)	Field Orders (25%)	Mobilization (2%)	Admin (25%)	Design (25%)	Environmental (15%)	Total
Improvement F	\$247,886	\$61,971	\$6,197	\$77,464	\$6,197	\$77,464	\$77,464	\$46,479	\$601,123
Improvement G	\$125,112	\$31,278	\$3,128	\$39,098	\$3,128	\$39,098	\$39,098	\$23,459	\$303,397
Improvement H	\$47,040	\$11,760	\$1,176	\$14,700	\$1,176	\$14,700	\$14,700	\$8,820	\$114,072
Improvement I	\$328,141	\$82,035	\$8,204	\$102,544	\$8,204	\$102,544	\$102,544	\$61,526	\$795,742
Improvement J	\$30,000	\$7,500	\$750	\$9,375	\$750	\$9,375	\$9,375	\$5,625	\$72,750
Total Area 2	\$778,179	\$194,545	\$19,454	\$243,181	\$19,454	\$243,181	\$243,181	\$145,909	\$1,887,084



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Table 9-3.
Area 3 Cost Estimates

Area	Construction	Contingency (25%)	Bond (2%)	Field Orders (25%)	Mobilization (2%)	Admin (25%)	Design (25%)	Environmental (15%)	Total
Improvement K	\$105,545	\$26,386	\$2,639	\$32,983	\$2,639	\$32,983	\$32,983	\$19,790	\$255,947
Improvement L	\$276,767	\$69,192	\$6,919	\$86,490	\$6,919	\$86,490	\$86,490	\$51,894	\$671,159
Improvement M	\$201,196	\$50,299	\$5,030	\$62,874	\$5,030	\$62,874	\$62,874	\$37,724	\$487,899
Improvement N	\$207,181	\$51,795	\$5,180	\$64,744	\$5,180	\$64,744	\$64,744	\$38,846	\$502,413
Improvement O	\$33,000	\$8,250	\$825	\$10,313	\$825	\$10,313	\$10,313	\$6,188	\$80,025
Total Area 3	\$823,688	\$205,922	\$20,592	\$257,402	\$20,592	\$257,402	\$257,402	\$154,441	\$1,997,443

Table 9-4.
Area 4 Cost Estimates

Area	Construction	Contingency (25%)	Bond (2%)	Field Orders (25%)	Mobilization (2%)	Admin (25%)	Design (25%)	Environmental (15%)	Total
Improvement P	\$68,924	\$17,231	\$1,723	\$21,539	\$1,723	\$21,539	\$21,539	\$12,923	\$167,140
Improvement Q	\$151,172	\$37,793	\$3,779	\$47,241	\$3,779	\$47,241	\$47,241	\$28,345	\$366,592
Improvement R	\$167,507	\$41,877	\$4,188	\$52,346	\$4,188	\$52,346	\$52,346	\$31,408	\$406,205
Improvement S	\$36,570	\$9,142	\$914	\$11,428	\$914	\$11,428	\$11,428	\$6,857	\$88,682
Improvement T	\$56,560	\$14,140	\$1,414	\$17,675	\$1,414	\$17,675	\$17,675	\$10,605	\$137,158
Improvement U	\$250,000	\$62,500	\$6,250	\$78,125	\$6,250	\$78,125	\$78,125	\$46,875	\$606,250
Improvement V	\$27,500	\$6,875	\$688	\$8,594	\$688	\$8,594	\$8,594	\$5,156	\$66,688
Total Area 4	\$758,232	\$189,558	\$18,956	\$236,948	\$18,956	\$236,948	\$236,948	\$142,169	\$1,838,713



9.5 COST ESTIMATES BY MODE

Many of the improvements located within the study area improve accessibility or operations for more than one mode. For the purpose of estimating the cost of the improvements by model, the following provides a brief description of the costs allocated to each mode:

- Pedestrian Improvements: Sidewalks, Curb Ramps, Crosswalks, Sidewalk Obstruction Removal, Curb Extensions
- Bicycle Improvements: Bicycle Lane Striping, Parking Removal
- Transit Improvements: Transit Stop Relocation, Transit Priority Measures, Extension of Queue Jump Lane
- Vehicle Circulation Improvements: Signing & Striping, New Traffic Signals, Traffic Signal Modifications, Median Modifications

Cost by mode is allocated in Tables 9-5 through 9-9. As shown, pedestrian improvements account for approximately 25% of the estimated construction cost for the project. Bicycle and transit combined account for approximately 10%. Vehicle improvements account for the remaining 65% of the estimated construction costs for the project. It should be noted that some of the improvements included in the vehicle construction costs would be beneficial to multiple modes. For example, traffic calming improvements improve the safety for vehicles by slowing speeds and reducing the severity of accidents, but also improves the walking and bicycling environment along the corridor. Clearly, the highest cost-benefits to mobility will realized when access and mobility are improvement for more than one mode.

9.6 COST ESTIMATES BY IMPROVEMENT LOCATION

Detailed cost estimates for each of the improvement locations provided in this report reflect the estimates reviewed by City of San Diego engineering staff and are based on 2010 cost estimating guidelines. A brief description of the proposed improvement and estimated construction costs are summarized in the following sections. Included with the cost estimate is the conceptual design of the improvement.

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Table 9-5.

Summary of Construction Cost by Mode – Area 1

Area 1	Pedestrian	Bicycle	Transit	Vehicle	TOTAL
Improvement A Median at Moore	\$24,700			\$309,525	\$334,225
Improvement B Sidewalk & Bicycle Lanes	\$288,788	\$27,000	\$5,000	\$200,000	\$520,788
Improvement C Rosecrans & Sports Arena	\$137,485			\$602,006	\$739,491
Improvement D Rosecrans & Midway	\$89,800	\$29,420	\$54,500	\$421,410	\$595,130
Improvement E Bicycle Lanes on Rosecrans	\$30,400	\$92,865	\$8,500		\$131,765
Future Road between Kurtz and Sports Arena				\$305,100	\$305,100
Future Connection of Sports Arena to Pacific Highway				\$506,100	\$506,100
Total Area 1	\$571,173	\$149,285	\$68,000	\$2,344,141	\$3,132,200

Table 9-6.

Summary of Construction Cost by Mode – Area 2

Area 2	Pedestrian	Bicycle	Transit	Vehicle	TOTAL
Improvement F Signal Modifications				\$247,886	\$247,886
Improvement G Medians & Turn Pockets				\$125,112	\$125,112
Improvement H Widen Bicycle Lanes		\$47,040			\$47,040
Improvement I Side Street Curb Extensions	\$328,141				\$328,141
Improvement J Consolidation of Transit Stops			\$30,000		\$30,000
Total Area 2	\$328,141	\$47,040	\$30,000	\$372,998	\$778,179



Table 9-7.
Summary of Construction Cost by Mode – Area 3

Area 3	Pedestrian	Bicycle	Transit	Vehicle	TOTAL
Improvement K Widen Bicycle Lanes		\$105,545			\$105,545
Improvement L Medians & Turn Pockets				\$276,767	\$276,767
Improvement M Signal at Emerson				\$201,196	\$201,196
Improvement N Side Street Curb Extensions	\$207,181				\$207,181
Improvement O Relocate Transit Stops			\$33,000		\$33,000
Total Area 3	\$207,181	\$105,545	\$33,000	\$477,962	\$823,688

Table 9-8.
Summary of Construction Cost by Mode – Area 4

Area 4	Pedestrian	Bicycle	Transit	Vehicle	TOTAL
Improvement P Restripe Rosecrans/Talbot				\$68,924	\$68,924
Improvement Q Complete Sidewalks	\$151,172				\$151,172
Improvement R Curb Extensions	\$167,507				\$167,507
Improvement S Median Islands at Armada				\$36,570	\$36,570
Improvement T Chokers				\$56,560	\$56,560
Improvement U Roundabout at McCall				\$250,000	\$250,000
Improvement V Transit Stop Relocations			\$27,500		\$27,500
Total Area 4	\$318,679	\$0	\$27,500	\$412,054	\$758,233

Table 9-9.
Summary of Cost by Mode for the Corridor (Construction, Design & Administrative Costs)

Area 4	Pedestrian	Bicycle	Transit	Vehicle	TOTAL
Area 1	\$571,173	\$149,285	\$68,000	\$2,344,141	\$3,132,200
Area 2	\$328,141	\$47,040	\$30,000	\$372,998	\$778,179
Area 3	\$207,181	\$105,545	\$33,000	\$477,963	\$823,689
Area 4	\$318,679	\$0	\$27,500	\$412,054	\$758,233
TOTAL FOR CORRIDOR	\$1,425,174	\$301,870	\$158,500	\$3,607,156	\$5,492,301

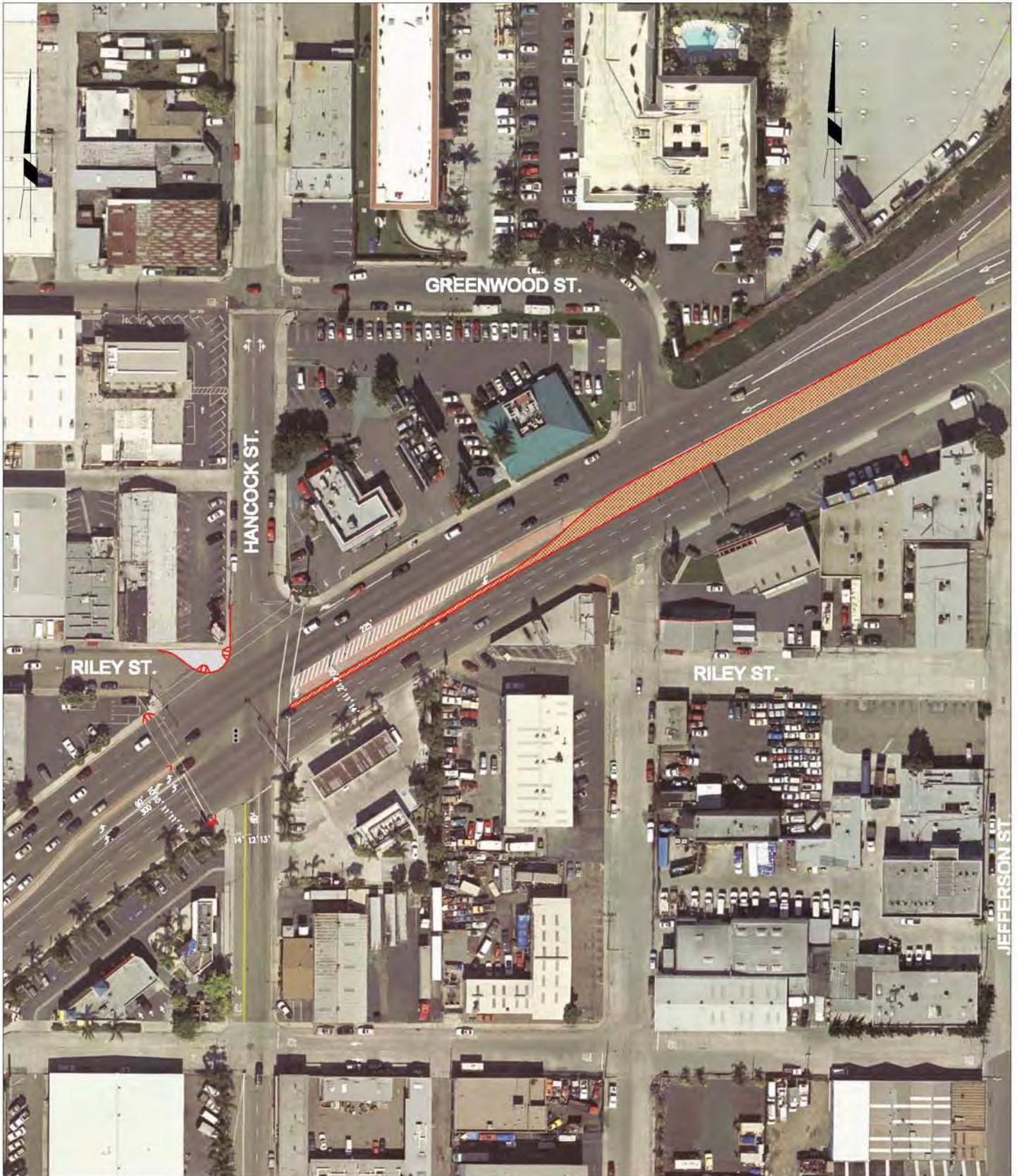
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A. MOORE STREET MEDIAN CLOSURE

- Construct raised median and restrict access at Moore Street to right turn in and right turn out on northbound and southbound approach.
- Construct southbound left turn pocket at Hancock Street. Provide protected left turn phasing and allow u-turns on southbound approach.
- Allow two-way traffic on Hancock Street between Camino Del Rio and Rosecrans.
- Construct curb extension at Hancock Street/Riley Street.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
IMPROVEMENT A: Moore Street Median Closure				
New Concrete Raised Median	10,100	SF	\$15.00	\$151,500
New Curb and Gutter (Includes Median)	1,200	LF	\$22.00	\$26,400
New Curb Extension (Hancock/Riley)	1	EA	\$8,000.00	\$8,000
New Curb Ramps	4	EA	\$2,800.00	\$11,200
Drainage for Curb Extension	1	EA	\$7,500.00	\$7,500
Proposed Striping	2,940	LF	\$2.00	\$5,880
New Pavement Markings	2	EA	\$100.00	\$200
Demo Existing Median	4,540	SF	\$8.00	\$36,320
Demo Existing Striping	1,475	LF	\$3.00	\$4,425
Demo Existing Pavement Markings	2	EA	\$25.00	\$50
Sawcut	1,830	LF	\$5.00	\$9,150
AC Paving	4,540	SF	\$10.00	\$45,400
Traffic Signal Modification	1	LS	\$25,000.00	\$25,000
Fire Hydrant Relocation	1	EA	\$3,200.00	\$3,200
			Subtotal	\$334,225



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IMPROVEMENT A:
MEDIAN AT MOORE ST.





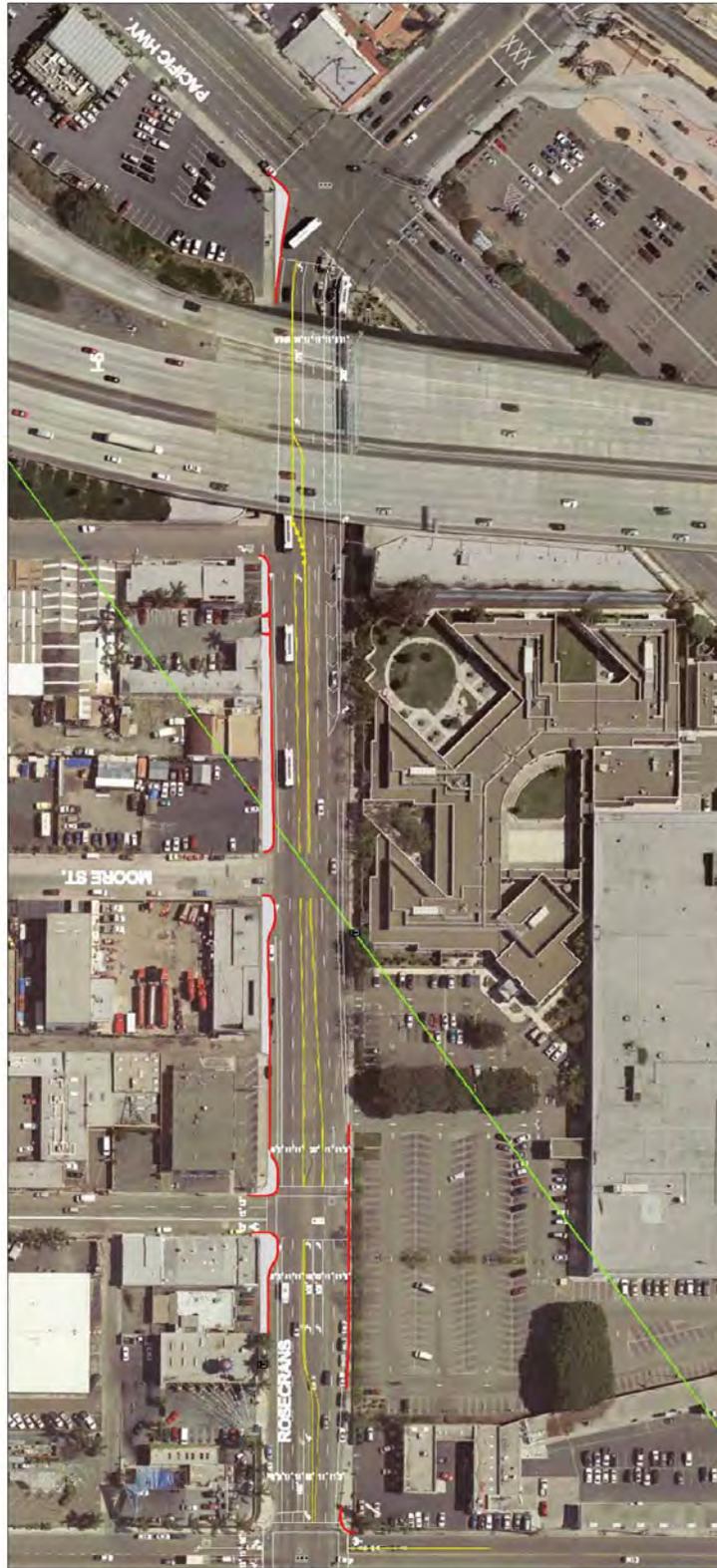
B. BICYCLE LANES AND SIDEWALKS ON ROSECRANS (Sports Arena to Pacific Highway)

- Reconstruct or construct new sidewalks on northside of Rosecrans on all blocks. Where appropriate, construct curb extensions to reduce crossing distance for pedestrians across Rosecrans.
- Reconstruct sidewalk on southside of Rosecrans from Kurtz Street to Hancock Street.
- Install traffic signal at Hancock Street to improve pedestrian and vehicular access. Provide for protected-permissive phasing, if appropriate, while single left turn lane is provided.
- When warranted, re-stripe eastbound Rosecrans at Hancock Street to provide dual left turn lanes. This will require remove of on-street parking on the south side of Rosecrans and along Hancock Street. Provide protected phasing at the intersection when restriping occurs.
- Extend the existing transit only lane at Pacific Highway.
- Restrict left turn access at Jefferson Street through the installation of delineators
- Reconstruct northwest corner at Pacific Highway/Rosecrans by extending the existing curb to align with the northeast corner of the intersection. In doing so, driveways along Rosecrans immediately west of Pacific Highway would be closed.
- It may be necessary to modify the storm drain inlets in the area to accommodate the curb extensions.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
IMPROVEMENT B: Bicycle Lanes and Sidewalks on Rosecrans (Sports Arena to Pacific Highway)				
New or Reconstructed Sidewalks	14,585	SF	\$8.00	\$116,678
New Curb Extensions	3	EA	\$5,000.00	\$15,000
New Curb and Gutter	1,350	LF	\$22.00	\$29,700
New Curb Ramps	6	EA	\$2,800.00	\$16,800
New Traffic Signal	1	LS	\$200,000.00	\$200,000
Proposed Striping	13,500	LF	\$2.00	\$27,000
New Pavement Markings	15	EA	\$100.00	\$1,500
New Plastic Delineators	6	EA	\$50.00	\$300
Demo Existing Curb and Gutter	740	LF	\$5.00	\$3,700
Demo Existing Sidewalks	5,180	SF	\$2.00	\$10,360
Demo Existing Striping	6,050	LF	\$3.00	\$18,150
Demo Existing Pavement Markings	14	EA	\$25.00	\$350
Sawcut	1,350	LF	\$5.00	\$6,750
AC Paving	650	SF	\$10.00	\$6,500
Storm Drain Improvements (curb extension)	3	EA	\$15,000.00	\$45,000
Utility Relocation/Modification	2	EA	\$1,500.00	\$3,000
Dry Utility Adjustments	2	EA	\$2,500.00	\$5,000
			Subtotal	\$520,788

LEGEND

-  EXISTING TRANSIT STOP
-  EXISTING TRANSIT STOP TO BE RELOCATED
-  NEW TRANSIT STOP
-  REMOVE EXISTING TRANSIT STOP
-  NEW CURB RAMP
-  NEW SIDEWALK OR CURB EXTENSION
-  NEW CURB
-  RAISED LANDSCAPED MEDIAN
-  CURB EXTENSIONS (W/O LANDSCAPE)
-  RAISED MEDIAN (HARDSCAPE)
-  PROPOSED SIGNAL
-  PROPOSED STRIPING
-  EXISTING PARKING TO BE REMOVED
-  OVERHEAD SIGN
-  FLASHING BEACON WITH CURVE AHEAD SIGN
-  HIGHLY REFLECTIVE RPMs
-  LIGHTED SIDEWALK
-  ROW
-  PROPERTY LINES



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**IMPROVEMENT B: SIDEWALKS AND
BIKE LANES TO TRANSIT CENTER**





C. EXTENSION OF SPORTS ARENA THROUGH ROSECRANS INTERSECTION

- Remove existing northbound left turn movement on Rosecrans Street.
- Provide overhead signage on the northbound approach to Sports Arena directing traffic to Hancock Street for westbound access to Sports Arena.
- Modification to the existing raised median island on the east side of the intersection to allow eastbound traffic through the intersection.
- Modifications to the southwest corner to construct an eastbound through lane and dedicated right turn lane on eastbound Sports Arena Boulevard.
- Modifications to the traffic signal and traffic signal timing.
- Modifications to existing medians on northbound Rosecrans and southbound Camino del Rio.
- Re-stripe crosswalks and bicycle lanes through the intersection.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
IMPROVEMENT C: Extension of Sports Arena through Camino Del Rio-Rosecrans Intersection				
New Concrete Raised Median	13,450	SF	\$15.00	\$201,750
New Curb and Gutter (Includes Median)	2,970	LF	\$22.00	\$65,340
New or Reconstructed Sidewalks	1,180	SF	\$8.00	\$9,442
New Curb Ramps	9	EA	\$2,800.00	\$25,200
Proposed Striping	8,480	LF	\$2.00	\$16,960
New Pavement Markings	12	EA	\$100.00	\$1,200
Demo Existing Median	9,240	SF	\$8.00	\$73,920
Demo Existing Curb and Gutter	265	LF	\$5.00	\$1,327
Demo Existing Sidewalks	1,620	SF	\$2.00	\$3,240
Demo Existing Striping	5,970	LF	\$3.00	\$17,910
Demo Existing Pavement Markings	16	EA	\$25.00	\$400
Sawcut	4,640	LF	\$5.00	\$23,200
AC Paving	4,960	SF	\$10.00	\$49,603
Traffic Signal Modification	1	LS	\$150,000.00	\$150,000
Overhead Signage	2	EA	\$25,000.00	\$50,000
Storm Drain Improvements	1	EA	\$50,000.00	\$50,000
Subtotal				\$739,491

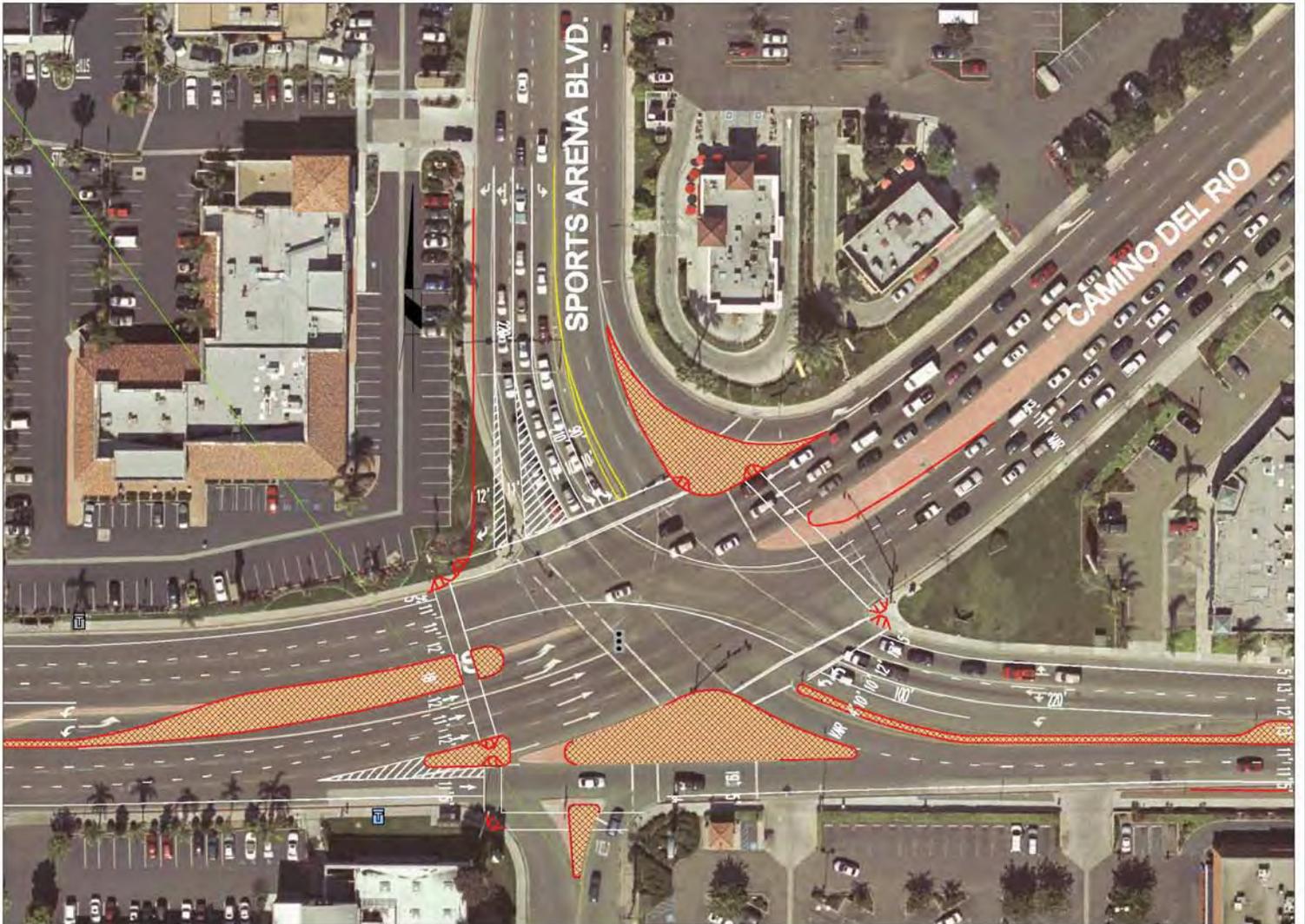
ROSECRANS CORRIDOR MOBILITY STUDY

C. EXTENSION OF SPORTS ARENA THROUGH ROSECRANS INTERSECTION (continued)

- Two elements of the Sports Arena improvements would also need to be constructed to complete the circulation improvements in the North Bay area:
- New Road between Kurtz and Sports Arena that would align with Greenwood Street. This extension would require additional right of way that is not included in the estimated cost provided in the table below. Costs estimated include construction of the road and do not include additional drainage or utility requirements. This improvement may be linked to redevelopment of the Sports Arena area. Therefore, such improvements may be part of a larger plan and are premature to estimate at this time.
- Connection to Pacific Highway from Sports Arena Boulevard. This connection will require the acquisition of right of way. There are alignment opportunities through existing parking lots that would allow this improvement to be compatible with existing development. However, there would be implications to parking and access if such improvements were constructed. Further investigation of this improvement is required to full understand the right of way impacts, costs and parking implications. Therefore, the costs summarized in this chapter relate to the construction costs of the road and associated facilities. Additional costs associated with drainage, street lighting, utilities and right of way were unknown at the time this report was prepared.

Future Road between Kurtz and Sports Arena				
New Curb and Gutter	850	LF	\$22.00	\$18,700
New Sidewalks	4,250	SF	\$8.00	\$34,000
Proposed Striping	750	LF	\$2.00	\$1,500
New Stop Signs	2	EA	\$100.00	\$200
Demo Existing AC Paving	17,000	SF	\$3.50	\$59,500
New Curb Ramps	4	EA	\$2,800.00	\$11,200
AC Paving	17,000	SF	\$10.00	\$170,000
Street Lighting	1	LS	\$10,000.00	\$10,000
Subtotal				\$305,100

Future Signalized, Full Access Connection from Sports Arena to Pacific Highway				
New Curb and Gutter	850	LF	\$22.00	\$18,700
New Sidewalks	4,250	SF	\$8.00	\$34,000
Proposed Striping	1,250	LF	\$2.00	\$2,500
New Stop Signs	2	EA	\$100.00	\$400
Demo Existing AC Paving	17,000	SF	\$3.50	\$59,500
New Curb Ramps	4	EA	\$2,800.00	\$11,200
AC Paving	17,000	SF	\$10.00	\$170,000
Street Lighting	1	LS	\$10,000.00	\$10,000
Subtotal				\$506,100



ROSECRANS CORRIDOR
MOBILITY STUDY



IMPROVEMENT C:
SPORTS ARENA EXTENSION
& FUTURE ROAD



ROSECRANS CORRIDOR MOBILITY STUDY

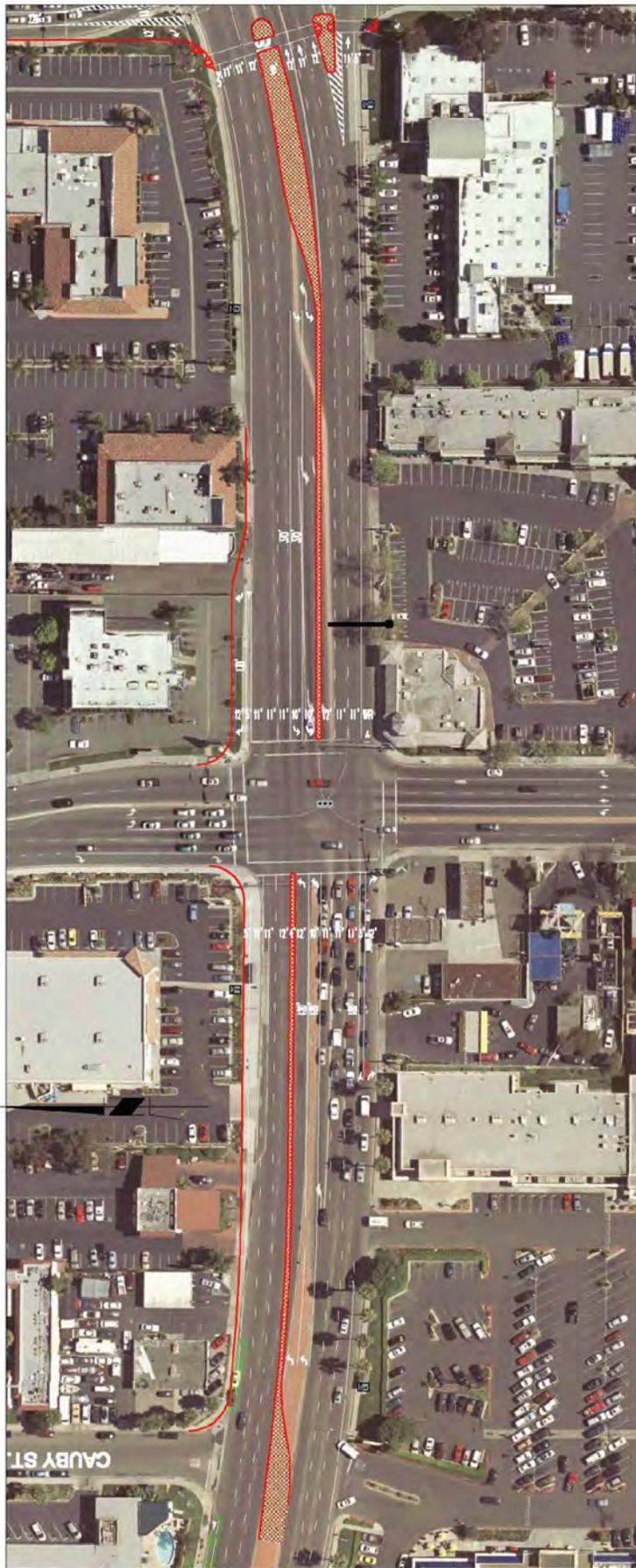
D. ROSECRANS AND MIDWAY INTERSECTION IMPROVEMENTS

- Provide dual northbound left-turn lanes from Rosecrans onto Midway. (short term City project)
- Extend the existing southbound left-turn pockets. (short term City project)
- Widen to construct a dedicated northbound right-turn pocket. (mid to long term)
- Widen to provide dedicated Class II bicycle lanes. (mid to long term)
- Relocate existing transit stop to new curb location. (mid to long term)
- Allow transit queue jump in northbound and southbound dedicated right turn lane (long term)
- Storm drain improvements will be required to accommodate the proposed modifications to the curb and gutter

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
IMPROVEMENT D: Rosecrans and Midway Intersection Improvements				
New Concrete Raised Median	5,580	SF	\$15.00	\$83,700
New Curb and Gutter (short-term)(Includes Med.)	1,920	LF	\$22.00	\$42,240
New or Reconstructed Sidewalks (short-term)	9,600	SF	\$8.00	\$76,800
New Curb Ramps	1	EA	\$2,800.00	\$2,800
Proposed Striping	7,210	LF	\$2.00	\$14,420
New Pavement Markings	14	EA	\$100.00	\$1,400
Demo Existing Median	7,640	SF	\$8.00	\$61,120
Demo Existing Sidewalks	5,930	SF	\$2.00	\$11,860
Demo Existing Striping	4,730	LF	\$3.00	\$14,190
Demo Existing Pavement Markings	7	EA	\$25.00	\$175
Sawcut	5,500	LF	\$5.00	\$27,500
AC Paving	9,020	SF	\$10.00	\$90,200
Storm Drain Improvements	1	LS	\$100,000	\$100,000
Traffic Signal Modification	1	LS	\$15,000.00	\$15,000
Widening for Transit Queue Jump Lane (long-term)				
New Curb and Gutter (long-term)	200	LF	\$22.00	\$4,400
New or Reconstructed Sidewalks (long-term)	1,000	SF	\$8.00	\$8,000
New Curb Ramps	1	EA	\$2,200.00	\$2,200
Demo Short-Term Curb and Gutter	215	LF	\$5.00	\$1,075
Demo Short-Term Sidewalk	1,075	SF	\$2.00	\$2,150
Sawcut	400	LF	\$5.00	\$2,000
AC Paving	1,920	SF	\$10.00	\$19,200
New Pavement Markings	2	EA	\$100.00	\$200
Traffic Signal Modification (Loops/Bike Loops)	1	LS	\$10,000.00	\$10,000
Utility Relocation	1	EA	\$1,500.00	\$1,500
Dry Utility Relocation	2	EA	\$2,500	\$5,000
			Subtotal	\$595,130



Cost Estimates and Conceptual Design



LEGEND

- EXISTING TRANSIT STOP
- EXISTING TRANSIT STOP TO BE RELOCATED
- NEW TRANSIT STOP
- REMOVE EXISTING TRANSIT STOP
- NEW CURB RAMP
- NEW SIDEWALK OR CURB EXTENSION
- NEW CURB
- RAISED LANDSCAPED MEDIAN
- CURB EXTENSIONS (W/OR W/O LANDSCAPE)
- RAISED MEDIAN (HARDSCAPE)
- PROPOSED SIGNAL
- PROPOSED STRIPING
- EXISTING PARKING TO BE REMOVED
- OVERHEAD SIGN
- FLASHING BEACON WITH CURVE AHEAD SIGN
- HIGHLY REFLECTIVE RPMs
- LIGHTED SIDEWALK
- ROW
- PROPERTY LINES

**IMPROVEMENT D:
ROSECRANS/MIDWAY
INT. IMPROVEMENTS**

**ROSECRANS CORRIDOR
MOBILITY STUDY**





E. BICYCLE LANES ON ROSECRANS & REMOVAL OF PARKING

- Remove existing signage related to existing on-street parking
- Stripe minimum six foot (6') bike lanes between Midway and Lytton
- May require right of way near intersection of Rosecrans/Lytton to accommodate bicycle lane through intersection.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
IMPROVEMENT E: Bicycle Lanes on Rosecrans and Removal of Parking				
New Curb and Gutter (Nimitz)	620	LF	\$22.00	\$13,640
New or Reconstructed Sidewalks	3,100	SF	\$8.00	\$24,800
New Curb Ramps	2	EA	\$2,800.00	\$5,600
Reconstruct Drive Approach	1	EA	\$1,500.00	\$1,500
Proposed Striping	13,420	LF	\$2.00	\$26,840
New Pavement Markings	8	EA	\$100.00	\$800
Demo Existing Striping	9,620	LF	\$3.00	\$28,860
Demo Existing Pavement Markings	5	EA	\$25.00	\$125
Sawcut	620	LF	\$5.00	\$3,100
Traffic Signal Modification (Loops/Bike Loops)	1	LS	\$15,000.00	\$15,000
Utility Relocation	2	EA	\$1,500.00	\$3,000
New Transit Stop	1	EA	\$8,500.00	\$8,500
			Subtotal	\$131,765

LEGEND

-  EXISTING TRANSIT STOP
-  EXISTING TRANSIT STOP TO BE RELOCATED
-  NEW TRANSIT STOP
-  REMOVE EXISTING TRANSIT STOP
-  NEW CURB RAMP
-  NEW SIDEWALK OR CURB EXTENSION
-  NEW CURB
-  RAISED LANDSCAPED MEDIAN
-  CURB EXTENSIONS (W/OR W/O LANDSCAPE)
-  RAISED MEDIAN (HARDSCAPE)
-  PROPOSED SIGNAL
-  PROPOSED STRIPING
-  EXISTING PARKING TO BE REMOVED
-  OVERHEAD SIGN
-  FLASHING BEACON WITH CURVE AHEAD SIGN
-  HIGHLY REFLECTIVE RPMs
-  LIGHTED SIDEWALK
-  ROW
-  PROPERTY LINES



**ROSECRANS CORRIDOR
MOBILITY STUDY**



**IMPROVEMENT E:
REMOVE STRIPING &
BIKE LANES**





F. MODIFIED SIGNALS AT DUMAS/ROOSEVELT AND ZOLA/WOMBLE

- Modify traffic signal at Rosecrans/Roosevelt to include side street control at Dumas Street. This will require removal of existing raised medians and restriping of the intersection.
- Modify traffic signal at Rosecrans/Womble Road to include side street control at Zola Street. This will require removal of existing raised medians and restriping of the intersection.
- New curb ramps shall be placed at all new pedestrian crossing locations. Curb ramps should meet all current ADA standards

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvements F: Modified Signals at Dumas/Roosevelt and Zola/Womble				
Dumas/Roosevelt				
New Concrete Raised Median	1,510	SF	\$15.00	\$22,650
New Landscaped Raised Median	2,270	SF	\$7.00	\$15,890
New Curb and Gutter (Includes Median)	1,040	LF	\$22.00	\$22,880
New Curb Ramps	4	EA	\$2,800.00	\$11,200
Proposed Striping	1,720	LF	\$2.00	\$3,440
New Pavement Markings	5	EA	\$100.00	\$500
Demo Existing Median	4,480	SF	\$8.00	\$35,840
Demo Existing Striping	1,180	LF	\$3.00	\$3,540
Demo Existing Pavement Markings	3	EA	\$25.00	\$75
Sawcut	2,480	LF	\$5.00	\$12,400
AC Paving	2,340	SF	\$10.00	\$23,400
Traffic Signal Modification	1	LS	\$25,000.00	\$25,000
Subtotal Dumas/Roosevelt				\$176,815
Zola/Womble				
New Curb and Gutter	150	LF	\$22.00	\$3,300
New Curb Ramps	4	EA	\$2,800.00	\$11,200
Proposed Striping	680	LF	\$2.00	\$1,360
New Pavement Markings	4	EA	\$100.00	\$400
Demo Existing Median	1,270	SF	\$8.00	\$10,160
Demo Existing Striping	1,200	LF	\$3.00	\$3,601
Demo Existing Pavement Markings	4	EA	\$25.00	\$100
Sawcut	650	LF	\$5.00	\$3,250
AC Paving	1,270	SF	\$10.00	\$12,700
Traffic Signal Modification (Loops/Bike Loops)	1	LS	\$25,000.00	\$25,000
Subtotal Zola/Womble				\$71,071
Subtotal of Both Intersections				\$247,886

ROSECRANS CORRIDOR MOBILITY STUDY



ROSECRANS CORRIDOR MOBILITY STUDY



IMPROVEMENT F:
MODIFY SIGNAL (WOMBLE)



LEGEND

- EXISTING TRANSIT STOP
- EXISTING TRANSIT STOP TO BE RELOCATED
- NEW TRANSIT STOP
- REMOVE EXISTING TRANSIT STOP
- NEW CURB RAMP
- NEW SIDEWALK OR CURB EXTENSION
- NEW CURB
- RAISED LANDSCAPED MEDIAN
- CURB EXTENSIONS (W/O OR NO LANDSCAPE)
- RAISED MEDIAN (HARDSCAPE)
- PROPOSED SIGNAL
- PROPOSED STRIPING
- EXISTING PARKING TO BE REMOVED
- OVERHEAD SIGN
- FLASHING BEACON WITH CURVE AHEAD SIGN
- HIGHLY REFLECTIVE RPMs
- LIGHTED SIDEWALK
- ROW
- PROPERTY LINES



ROSECRANS CORRIDOR MOBILITY STUDY



IMPROVEMENT F:
MODIFY SIGNAL (ROOSEVELT)



Cost Estimates and Conceptual Design



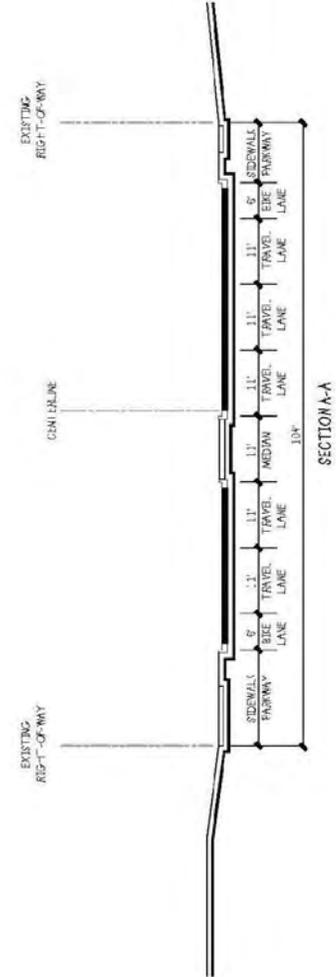
G. INTERMITTENT MEDIANS WITH NORTHBOUND LEFT-TURN ACCESS

- Install intermittent medians along Rosecrans between Lytton and Freeman to reduce the potential for conflict by consolidating the number of side-street access points.
- Install curb extensions to reduce the pedestrian crossing distance and enhance the pedestrian environment on the west side of the street.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement G: Intermittent Medians with Northbound Left-Turn Access				
New Concrete Raised Median	1,010	SF	\$15.00	\$15,150
New Landscaped Raised Median	7,110	SF	\$7.00	\$49,770
New Curb and Gutter	1,360	LF	\$22.00	\$29,920
Demo Existing Median	1,815	SF	\$8.00	\$14,522
Sawcut	2,240	LF	\$5.00	\$11,200
AC Paving	455	SF	\$10.00	\$4,550
			Subtotal	\$125,112

LEGEND

-  EXISTING TRANSIT STOP
-  EXISTING TRANSIT STOP TO BE RELOCATED
-  NEW TRANSIT STOP
-  REMOVE EXISTING TRANSIT STOP
-  NEW CURB RAMP
-  NEW SIDEWALK OR CURB EXTENSION
-  NEW CURB
-  RAISED LANDSCAPED MEDIAN
-  CURB EXTENSIONS (#/OR NO LANDSCAPE)
-  RAISED MEDIAN (HARDSCAPE)
-  PROPOSED SIGNAL
-  PROPOSED STRIPING
-  EXISTING PARKING TO BE REMOVED
-  OVERHEAD SIGN
-  FLASHING BEACON WITH CURVE AHEAD SIGN
-  HIGHLY REFLECTIVE RPMs
-  LIGHTED SIDEWALK
-  ROW
-  PROPERTY LINES



**IMPROVEMENT G:
INTERMITTENT MEDIAN
AND TURN POCKETS**

**ROSECRANS CORRIDOR
MOBILITY STUDY**

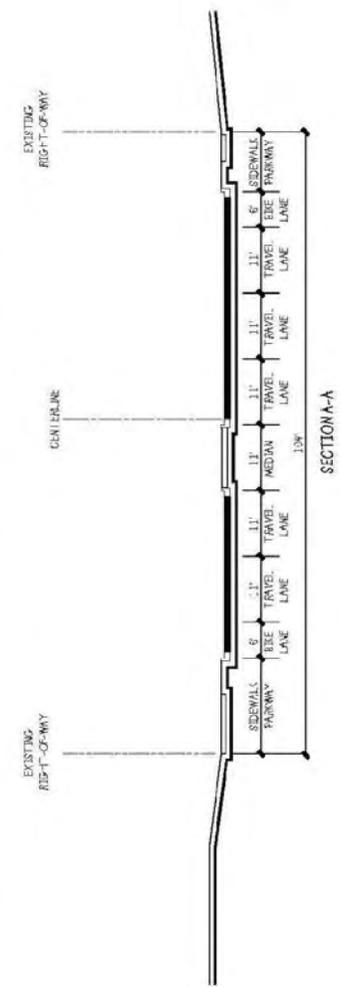




H. WIDEN BICYCLE LANES (LYTTON TO ROOSEVELT)

- Widen the bike lanes within the existing right-of-way by narrowing the width of the median.
- Re-stripe the travel lanes and center median to provide for additional bike lane width.
- When modifying existing medians related to other recommended improvements, consider narrowing or shortening to accommodate wider bicycle lanes.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement H: Widen Bicycle Lanes (Lytton to Roosevelt)				
Proposed Striping	8,870	LF	\$2.00	\$17,740
New Pavement Markings	3	EA	\$100.00	\$300
Demo Existing Striping	7,900	LF	\$3.00	\$23,700
Demo Existing Pavement Markings	12	EA	\$25.00	\$300
Traffic Signal Modificaton (Bike Loops)	1	LS	\$5,000.00	\$5,000
			Subtotal	\$47,040



ROSECRANS CORRIDOR
MOBILITY STUDY



IMPROVEMENT H:
WIDEN BIKE LANES

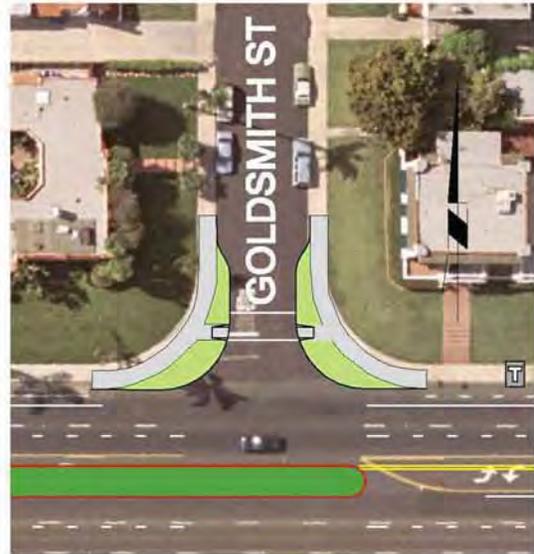




I. SIDE STREET CURB EXTENSIONS TO REDUCE CROSSING DISTANCE

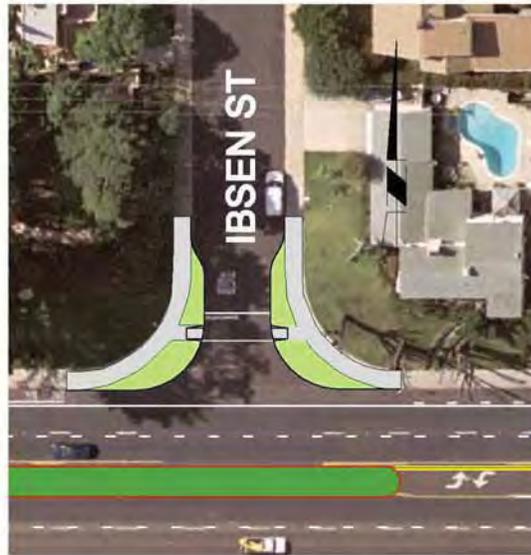
- This improvement identifies three locations for curb extensions:
 - Rosecrans & Elliott
 - Rosecrans & Goldsmith
 - Rosecrans & Ibsen
- It is feasible to assume that the cost estimates prepared would be relevant at other locations if identified by the community. These improvements were co-located with the proposed raised medians and left turn pockets. If the locations were different locations were determined to be preferable, then other improvements identified should be reviewed for consistency and compatibility.
- Construct curb extensions on the side street to reduce pedestrian crossing distance across the side street.
- Stripe crosswalks at intersections with curb extensions
- Storm drain improvements may be necessary at curb extensions to reduce potential for ponding or flooding near intersections

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement I: Side Street Curb Extensions to Reduce Crossing Distance				
New Curb and Gutter	610	LF	\$22.00	\$13,420
New or Reconstructed Sidewalks	3,520	SF	\$8.00	\$28,160
New Curb Ramps	6	EA	\$2,800.00	\$16,800
New Landscaped Curb Extensions	2,650	SF	\$7.00	\$18,550
Proposed Striping	150	LF	\$2.00	\$301
Demo Existing Curb and Gutter	530	LF	\$5.00	\$2,650
Demo Existing Sidewalks	3,080	SF	\$2.00	\$6,160
Storm Drain Improvements (Goldsmith)	1	EA	\$30,000.00	\$30,000
Storm Drain Improvements (Elliot & Ibsen)	2	EA	\$100,000	\$200,000
Sawcut	1,140	LF	\$5.00	\$5,700
Fire Hydrant Relocation	2	EA	\$3,200.00	\$6,400
Subtotal				\$328,141



LEGEND

	EXISTING TRANSIT STOP
	EXISTING TRANSIT STOP TO BE RELOCATED
	NEW TRANSIT STOP
	REMOVE EXISTING TRANSIT STOP
	NEW CURB RAMP
	NEW SIDEWALK OR CURB EXTENSION
	NEW CURB
	RAISED LANDSCAPED MEDIAN
	CURB EXTENSIONS (W/OR W/O LANDSCAPE)
	RAISED MEDIAN (HARDSCAPE)
	PROPOSED SIGNAL
	PROPOSED STRIPING
	EXISTING PARKING TO BE REMOVED
	OVERHEAD SIGN
	FLASHING BEACON WITH CURVE AHEAD SIGN
	HIGHLY REFLECTIVE RPMs
	LIGHTED SIDEWALK
	ROW
	PROPERTY LINES



ROSECRANS CORRIDOR
MOBILITY STUDY



IMPROVEMENT I:
SIDE STREET CURB EXT.





J. CONSOLIDATION AND RELOCATION OF TRANSIT STOPS

- Consolidate underutilized transit stops.
- Relocate transit stops from mid-block locations to signalized intersections adjacent to a crosswalk to encourage appropriate street crossing.
- Improvements include relocating the sign, trash receptacle, shelter or other amenities that exist at the existing transit stop. Sidewalk improvements and modifications to landscape may be necessary to provide adequate loading/unloading area at the new transit stop location.
- Improvements include removal of the existing concrete bus pad and construction of a new bus pad at the proposed location.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement J: Consolidation and Relocation of Transit Stops				
New or Relocated Transit Stop	3	EA	\$8,500.00	\$25,500
Demo & Repair Existing Transit Stop	3	EA	\$1,500.00	\$4,500
			Subtotal	\$30,000

LEGEND	
	EXISTING TRANSIT STOP
	EXISTING TRANSIT STOP TO BE RELOCATED
	NEW TRANSIT STOP
	REMOVE EXISTING TRANSIT STOP
	NEW CURB RAMP
	NEW SIDEWALK OR CURB EXTENSION
	NEW CURB
	RAISED LANDSCAPED MEDIAN
	CURB EXTENSIONS (#/OR NO LANDSCAPE)
	RAISED MEDIAN (HARDSCAPE)
	PROPOSED SIGNAL
	PROPOSED STRIPING
	EXISTING PARKING TO BE REMOVED
	OVERHEAD SIGN
	FLASHING BEACON WITH CURVE AHEAD SIGN
	HIGHLY REFLECTIVE RPMs
	LIGHTED SIDEWALK
	ROW
	PROPERTY LINES



ROSECRANS CORRIDOR
MOBILITY STUDY

IMPROVEMENT J:
CONSOLIDATION OF TRANSIT STOPS

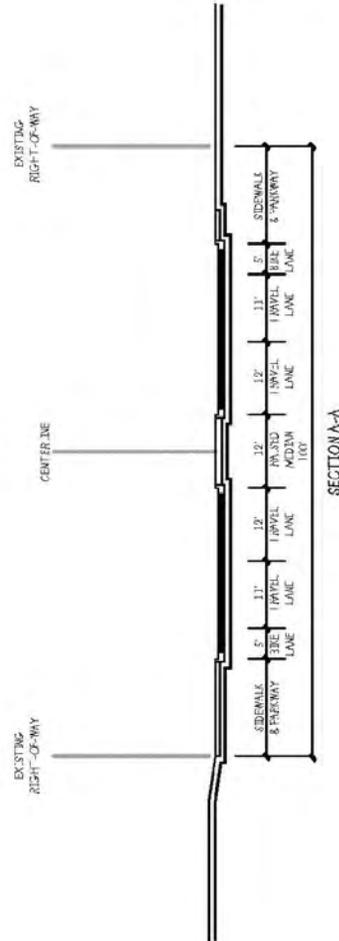




K. RE-STRIPE TO ADD SIX-FOOT BICYCLE LANES

- Re-stripe roadway within existing right-of-way to provide six foot (6') bicycle lanes
- Median nose removed at some locations to accommodate the wider bicycle lanes.
- Modifications at signals to modify loops for new/wider bicycle lanes. New loops for bicycles in lanes shall be installed if bicycle loops are either missing or not functional.
- Minor sidewalk improvements included to remove sidewalk obstructions.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement K: Re-Stripe To Add Six-Foot Bicycle Lanes				
Proposed Striping	12,940	LF	\$2.00	\$25,880
New Pavement Markings	6	EA	\$100.00	\$600
New or Reconstructed Sidewalk	560	SF	\$8.00	\$4,480
Demo Existing Median	85	SF	\$8.00	\$680
Demo Existing Sidewalk	560	SF	\$2.00	\$1,120
Demo Existing Striping	7,170	LF	\$3.00	\$21,510
Demo Existing Pavement Markings	2	EA	\$25.00	\$50
Sawcut	75	LF	\$5.00	\$375
AC Paving	85	SF	\$10.00	\$850
Traffic Signal Modification (5 Intersections)	5	EA	\$10,000.00	\$50,000
Subtotal				\$105,545



LEGEND

- EXISTING TRANSIT STOP
- EXISTING TRANSIT STOP TO BE RELOCATED
- NEW TRANSIT STOP
- REMOVE EXISTING TRANSIT STOP
- NEW CURB RAMP
- NEW SIDEWALK OR CURB EXTENSION
- NEW CURB
- RAISED LANDSCAPED MEDIAN
- CURB EXTENSIONS (#/OR NO LANDSCAPE)
- RAISED MEDIAN (HARDSCAPE)
- PROPOSED SIGNAL
- PROPOSED STRIPING
- EXISTING PARKING TO BE REMOVED
- OVERHEAD SIGN
- FLASHING BEACON WITH CURVE AHEAD SIGN
- HIGHLY REFLECTIVE RPMs
- LIGHTED SIDEWALK
- ROW
- PROPERTY LINES



**IMPROVEMENT K:
WIDEN BIKE LANES**

**ROSECRANS CORRIDOR
MOBILITY STUDY**





L. LANDSCAPED MEDIANS AND LEFT TURN POCKETS AT INTERSECTIONS

- Construct raised, landscaped medians through intersections.
- Maintain “left turn in” access at selected intersections.
- Restrict all “left turn out” access
- Landscape medians to improve the aesthetic quality of the corridor.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement L: Landscaped Medians and Left-Turn Pockets at Intersections				
New Concrete Raised Median	1,430	SF	\$15.00	\$21,449
New Landscaped Raised Median	11,764	SF	\$7.00	\$82,345
New Curb and Gutter	5,867	LF	\$22.00	\$129,074
Proposed Striping	445	LF	\$2.00	\$889
New Pavement Markings	7	EA	\$100.00	\$700
Demo Existing Median	1,785	SF	\$8.00	\$14,283
Demo Existing Striping	1,324	LF	\$3.00	\$3,971
Demo Existing Pavement Markings	9	EA	\$25.00	\$225
Sawcut	4,766	LF	\$5.00	\$23,831
			Subtotal	\$276,767



LEGEND	
	EXISTING TRANSIT STOP
	EXISTING TRANSIT STOP TO BE RELOCATED
	NEW TRANSIT STOP
	REMOVE EXISTING TRANSIT STOP
	NEW CURB RAMP
	NEW SIDEWALK OR CURB EXTENSION
	NEW CURB
	RAISED LANDSCAPED MEDIAN
	CURB EXTENSIONS (W/ OR W/O LANDSCAPE)
	RAISED MEDIAN (HARDSCAPE)
	PROPOSED SIGNAL
	PROPOSED STRIPING
	EXISTING PARKING TO BE REMOVED
	OVERHEAD SIGN
	FLASHING BEACON WITH CURVE AHEAD SIGN
	HIGHLY REFLECTIVE RPM
	LIGHTED SIDEWALK
	ROW
	PROPERTY LINES

ROSECRANS CORRIDOR MOBILITY STUDY



**IMPROVEMENT L:
LANDSCAPE MEDIANS AND
LEFT TURN POCKETS**



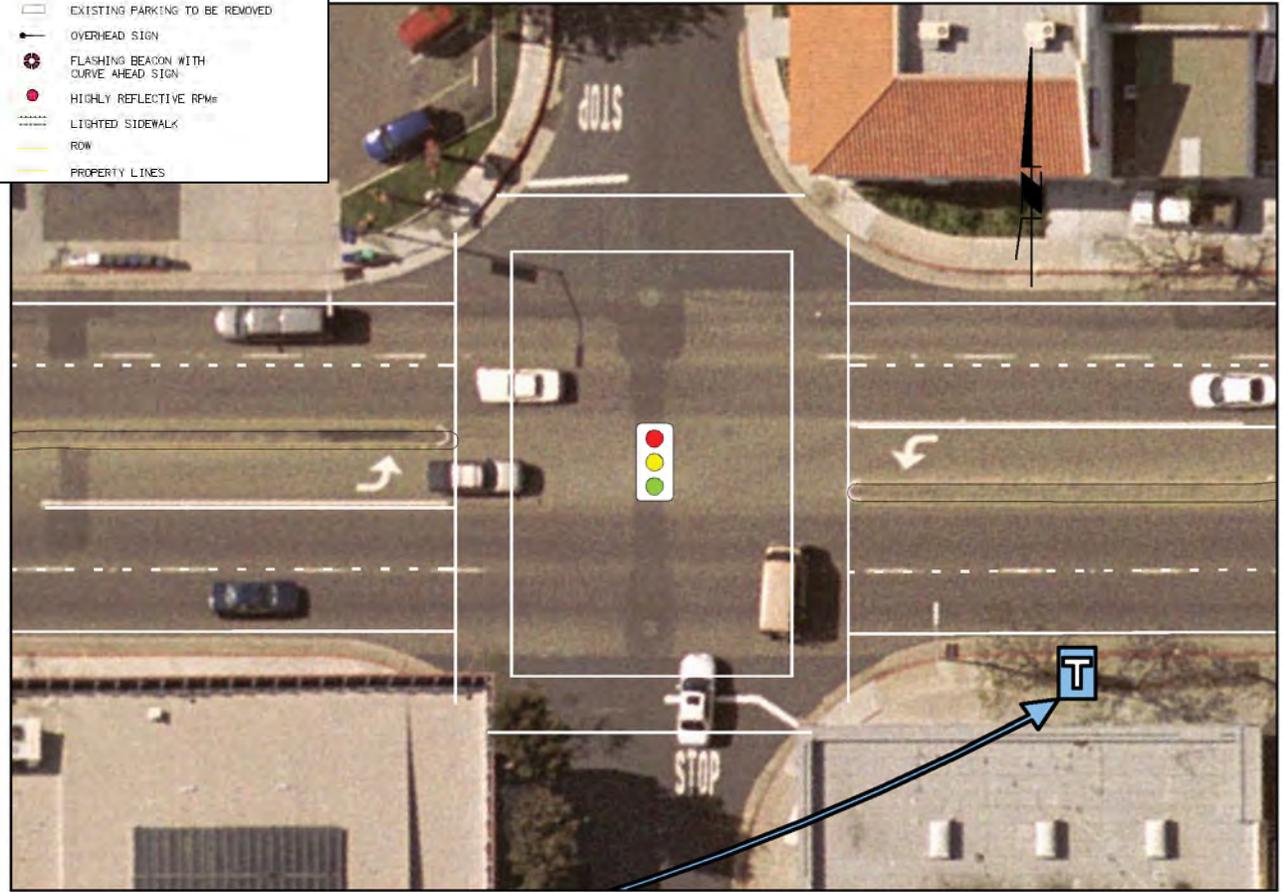


M. NEW TRAFFIC SIGNAL AT EMERSON

- Install a traffic signal at Rosecrans and Emerson.
- Stripe crosswalks on all legs of intersection
- Install new, ADA compliant pedestrian ramps on all approaches
- Install audible push buttons and count down timers on all approaches

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement M: New Traffic Signal at Emerson				
New Traffic Signal	1	LS	\$200,000.00	\$200,000
Proposed Striping	530	LF	\$2.00	\$1,059
Demo Existing Striping	45	LF	\$3.00	\$136
			Subtotal	\$201,196

- LEGEND**
-  EXISTING TRANSIT STOP
 -  EXISTING TRANSIT STOP TO BE RELOCATED
 -  NEW TRANSIT STOP
 -  REMOVE EXISTING TRANSIT STOP
 -  NEW CURB RAMP
 -  NEW SIDEWALK OR CURB EXTENSION
 -  NEW CURB
 -  RAISED LANDSCAPED MEDIAN
 -  CURB EXTENSIONS (W/OR W/O LANDSCAPE)
 -  RAISED MEDIAN (HARDSCAPE)
 -  PROPOSED SIGNAL
 -  PROPOSED STRIPING
 -  EXISTING PARKING TO BE REMOVED
 -  OVERHEAD SIGN
 -  FLASHING BEACON WITH CURVE AHEAD SIGN
 -  HIGHLY REFLECTIVE RPMS
 -  LIGHTED SIDEWALK
 -  ROW
 -  PROPERTY LINES



**ROSECRANS CORRIDOR
MOBILITY STUDY**



**IMPROVEMENT M:
NEW SIGNAL @ EMERSON**





N. SIDE STREET CURB EXTENSIONS TO REDUCE CROSSING DISTANCE

- This improvement includes the construction of curb extensions at the following two locations:
 - Rosecrans & Dickens
 - Rosecrans & Fenelon
- It is feasible to consider other locations for curb extensions. Costs associated with these improvements would be applicable to other locations
- The locations selected for this improvement relate to the location of the proposed raised median and left turn access points. When considering other locations for curb extensions through Area 3, these other improvements should also be taken into consideration for overall compatibility.
- Construct curb extensions on side streets
- Modify drainage to minimize ponding adjacent to curb extensions.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement N: Side Street Curb Extensions to Reduce Crossing Distance				
New Curb and Gutter	1,280	LF	\$22.00	\$28,153
New or Reconstructed Sidewalks	4,857	SF	\$8.00	\$38,853
New Landscaped Curb Extensions	2,959	SF	\$7.00	\$20,715
New Curb Ramps	8	EA	\$2,800.00	\$22,400
Proposed Striping	930	LF	\$2.00	\$1,860
Demo Existing Curb and Gutter	1,120	LF	\$5.00	\$5,600
Demo Existing Sidewalks	5,600	SF	\$2.00	\$11,200
Drainage Improvements	4	EA	\$30,000	\$60,000
Fire Hydrant Relocation	2	EA	\$3,200.00	\$6,400
Sawcut	2,400	LF	\$5.00	\$12,000
Subtotal				\$207,181

LEGEND

-  EXISTING TRANSIT STOP
-  EXISTING TRANSIT STOP TO BE RELOCATED
-  NEW TRANSIT STOP
-  REMOVE EXISTING TRANSIT STOP
-  NEW CURB RAMP
-  NEW SIDEWALK OR CURB EXTENSION
-  NEW CURB
-  RAISED LANDSCAPED MEDIAN
-  CURB EXTENSIONS (W/OR W/O LANDSCAPE)
-  RAISED MEDIAN (HARDSCAPE)
-  PROPOSED SIGNAL
-  PROPOSED STRIPING
-  EXISTING PARKING TO BE REMOVED
-  OVERHEAD SIGN
-  FLASHING BEACON WITH CURVE AHEAD SIGN
-  HIGHLY REFLECTIVE RPMs
-  LIGHTED SIDEWALK
-  ROW
-  PROPERTY LINES



**ROSECRANS CORRIDOR
MOBILITY STUDY**



**IMPROVEMENT N:
SIDE STREET CURB EXT.**





O. RELOCATION OF TRANSIT STOPS TO SIGNALIZED INTERSECTIONS

- Consolidate underutilized transit stops.
- Relocate transit stops from mid-block locations to signalized intersections adjacent to a crosswalk to encourage appropriate street crossing.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement O: Relocation of Transit Stops to Signalized Intersections				
New or Relocated Transit Stop	3	EA	\$8,500.00	\$25,500
Demo Existing Transit Stop	5	EA	\$1,500.00	\$7,500
			Subtotal	\$33,000

LEGEND

-  EXISTING TRANSIT STOP
-  EXISTING TRANSIT STOP TO BE RELOCATED
-  NEW TRANSIT STOP
-  REMOVE EXISTING TRANSIT STOP
-  NEW CURB RAMP
-  NEW SIDEWALK OR CURB EXTENSION
-  NEW CURB
-  RAISED LANDSCAPED MEDIAN
-  CURB EXTENSIONS (W/OR W/O LANDSCAPE)
-  RAISED MEDIAN (HARDSCAPE)
-  PROPOSED SIGNAL
-  PROPOSED STRIPING
-  EXISTING PARKING TO BE REMOVED
-  OVERHEAD SIGN
-  FLASHING BEACON WITH CURVE AHEAD SIGN
-  HIGHLY REFLECTIVE RFLM
-  LIGHTED SIDEWALK
-  ROW
-  PROPERTY LINES



**IMPROVEMENT O:
RELOCATE TRANSIT STOPS**

**ROSECRANS CORRIDOR
MOBILITY STUDY**





P. RE-STRIPE INTERSECTION OF ROSECRANS AND TALBOT

- Restripe the northbound approach to include a dedicated left-turn lane and shared through-right turn lane on Rosecrans.
- Restripe the southbound approach to include a southbound left-turn lane and shared through-right turn on Rosecrans.
- Re-stripe the existing crosswalks to match the proposed lane configurations.
- Modify traffic signal for new loop locations for bicycles and vehicles.
- Install audible pedestrian push buttons and count down timers on all approaches.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement P: Re-Stripe Intersection of Rosecrans and Talbot				
Proposed Striping	2,300	LF	\$2.00	\$4,600
New Pavement Markings	2	EA	\$100.00	\$200
Demo Existing Striping	1,375	LF	\$3.00	\$4,124
Traffic Signal Modification (Loops/Bike Loops/Audible Push Buttons & Countdown Timers)	1	LS	\$60,000	\$60,000
			Subtotal	\$68,924

- LEGEND**
-  EXISTING TRANSIT STOP
 -  EXISTING TRANSIT STOP TO BE RELOCATED
 -  NEW TRANSIT STOP
 -  REMOVE EXISTING TRANSIT STOP
 -  NEW CURB RAMP
 -  NEW SIDEWALK OR CURB EXTENSION
 -  NEW CURB
 -  RAISED LANDSCAPED MEDIAN
 -  CURB EXTENSIONS (W/OR W/O LANDSCAPE)
 -  RAISED MEDIAN (HARDSCAPE)
 -  PROPOSED SIGNAL
 -  PROPOSED STRIPING
 -  EXISTING PARKING TO BE REMOVED
 -  OVERHEAD SIGN
 -  FLASHING BEACON WITH CURVE AHEAD SIGN
 -  HIGHLY REFLECTIVE RPMs
 -  LIGHTED SIDEWALK
 -  ROW
 -  PROPERTY LINES



ROSECRANS CORRIDOR
MOBILITY STUDY

IMPROVEMENT P:
RESTRIPE ROSECRANS AND TALBOT

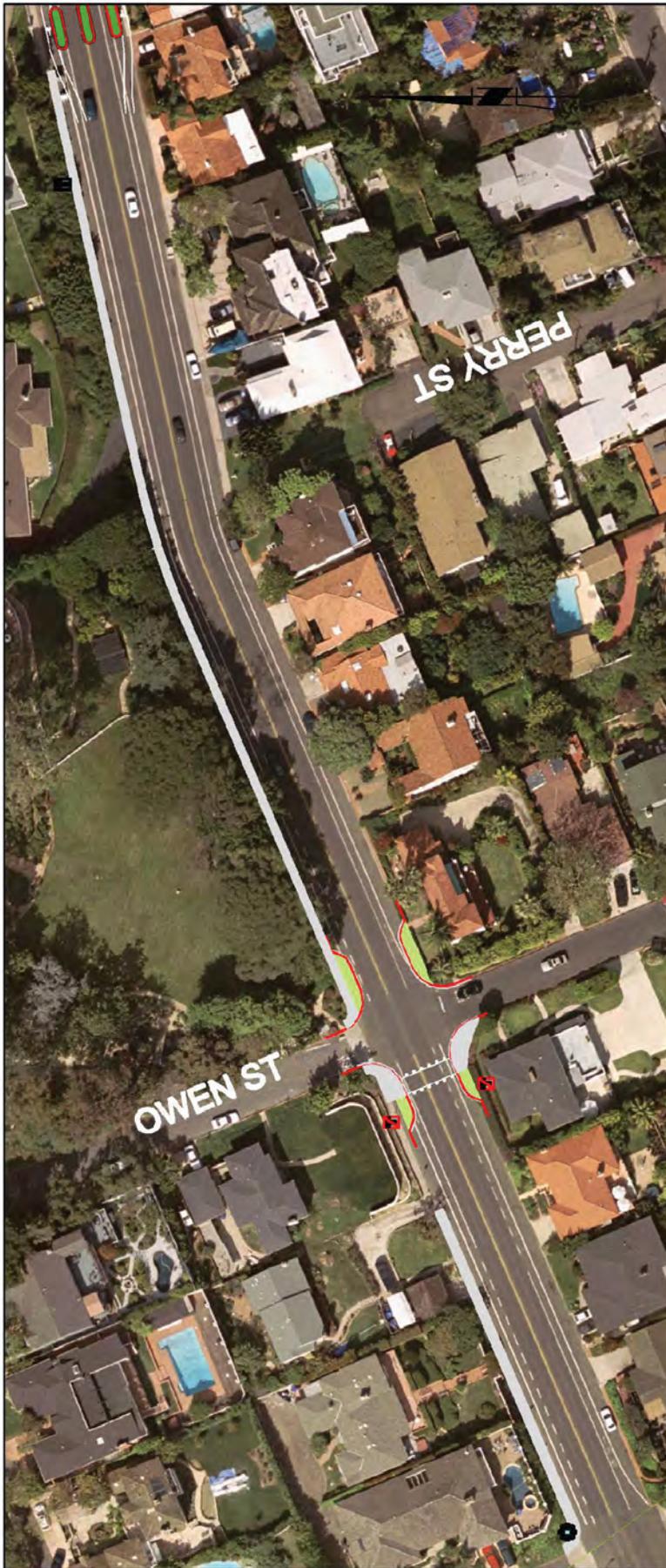




Q. COMPLETE SIDEWALKS ON WEST SIDE OF STREET

- Construct sidewalks on the west side of the street in sections where sidewalks are currently missing or in a state of disrepair.
- Install new curb ramps at intersections where existing ramps do not meet current ADA standards. Anticipated locations include:
 - Rosecrans / Kellogg (4 corners)
 - Rosecrans/Nichols (2 corners)
 - Rosecrans/Owens (may be modified with curb extensions) (2 corners)
 - Rosecrans/Upshur (4 corners)
- Construct gravity or retaining wall (3 feet or less) along fronting properties due to change in elevation
- It may be necessary to acquire limited amounts of right-of-way to construct sidewalk. Right-of-way costs are not included in this assessment as actual quantities are unknown at this time
- Existing driveways may need to be modified with the construction of the sidewalk
- Existing utilities may need to be relocated or modified

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement Q: Complete Sidewalks on West Side of Street				
Demo Existing Curb	1,100	LF	\$5.00	\$5,500
New or Reconstructed Sidewalks	6,050	SF	\$8.00	\$48,402
New Retaining Wall (3 feet)	1,050	SF	\$15.00	\$15,750
New Gravity Wall (1 foot)	215	LF	\$8.00	\$1,720
New Curb & Gutter	1,100	LF	\$22.00	\$24,200
Modify Existing Driveways	2	EA	\$2,500.00	\$5,000
New Curb Ramps	12	EA	\$2,800.00	\$33,600
Sawcut	1,100	LF	\$5.00	\$5,500
Utility Relocation	1	EA	\$1,500.00	\$1,500
Dry Utility Relocation	4	EA	\$2,500.00	\$10,000
			Subtotal	\$120,372



LEGEND	
	EXISTING TRANSIT STOP
	EXISTING TRANSIT STOP TO BE RELOCATED
	NEW TRANSIT STOP
	REMOVE EXISTING TRANSIT STOP
	NEW CURB RAMP
	NEW SIDEWALK OR CURB EXTENSION
	NEW CURB
	RAISED LANDSCAPED MEDIAN
	CURB EXTENSIONS (W/ OR W/O LANDSCAPE)
	RAISED MEDIAN (HARDSCAPE)
	PROPOSED SIGNAL
	PROPOSED STRIPING
	EXISTING PARKING TO BE REMOVED
	OVERHEAD SIGN
	FLASHING BEACON WITH CURVE AHEAD SIGN
	HIGHLY REFLECTIVE RTMs
	LIGHTED SIDEWALK
	ROW
	PROPERTY LINES



**IMPROVEMENT Q:
COMPLETE SIDEWALK**

**ROSECRANS CORRIDOR
MOBILITY STUDY**





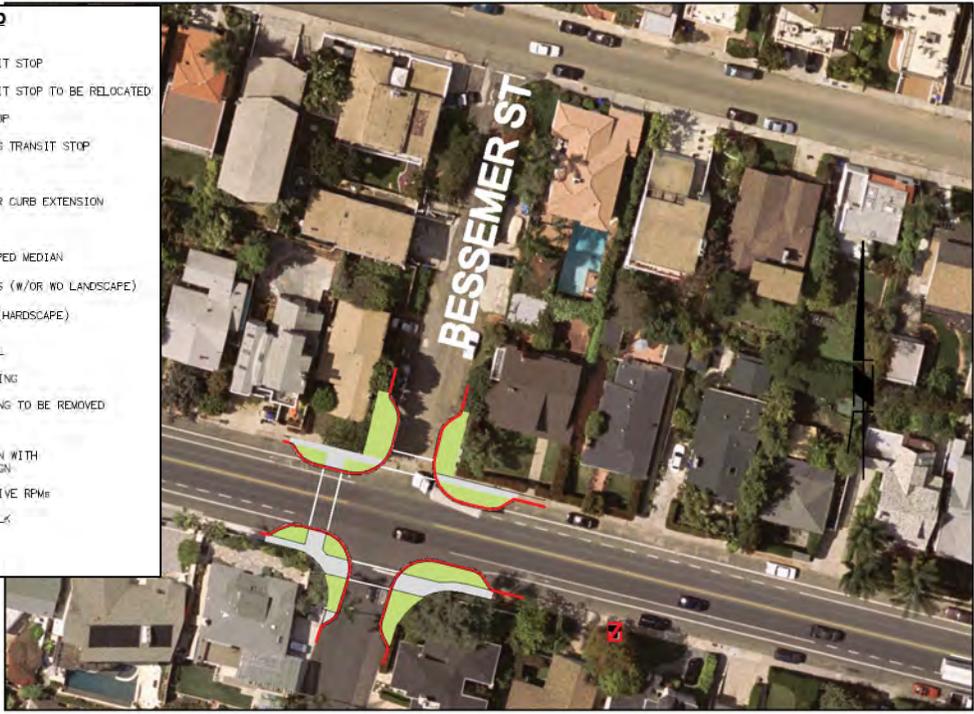
R. CURB EXTENSIONS AT OWEN AND BESSEMER

- Construct curb extensions at Owen and Bessemer
- Includes construction of new curb ramps at both intersections (also included in Improvement Q)
- Stripe crosswalks on the south leg and along the stop controlled side streets.
- Use highly reflective paint and/or pavement markings to improve the visibility of the pedestrian crossing to the motorist.
- May require drainage improvements to minimize potential for ponding at intersections

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement R: Curb Extensions at Bessemer and Owen				
Rosecrans/Bessemer				
New Curb and Gutter	470	LF	\$22.00	\$10,340
New or Reconstructed Sidewalks	1,180	SF	\$8.00	\$9,440
New Landscaped Curb Extensions	2,210	SF	\$7.00	\$15,470
New Curb Ramps	6	EA	\$2,800.00	\$16,800
Proposed Striping - Highly Reflective Paint	160	LF	\$3.00	\$480
Demo Existing Curb and Gutter	380	LF	\$5.00	\$1,900
Demo Existing Sidewalks	1,040	SF	\$2.00	\$2,080
Demo Existing Striping	60	LF	\$3.00	\$180
Drainage Improvements (per corner)	4	EA	\$7,500.00	\$30,000
Sawcut	850	LF	\$5.00	\$4,250
Subtotal Rosecrans/Bessemer				\$90,940
Rosecrans/Owen				
New Curb and Gutter	320	LF	\$22.00	\$7,040
New or Reconstructed Sidewalks	1,040	SF	\$8.00	\$8,320
New Landscaped Curb Extensions	650	SF	\$7.00	\$4,550
New Curb Ramps	4	EA	\$2,800.00	\$11,200
Proposed Striping - Highly Reflective Paint	160	LF	\$3.00	\$480
Lighted Crosswalk	1	LS	\$15,000.00	\$15,000
Demo Existing Curb and Gutter	295	LF	\$5.00	\$1,476
Demo Existing Sidewalks	40	SF	\$2.00	\$80
Demo Existing Striping	115	LF	\$3.00	\$345
Drainage Improvements	1	LS	\$25,000	\$25,000
Sawcut	615	LF	\$5.00	\$3,076
Subtotal Rosecrans/Owen				\$76,576
Subtotal of Both Intersections				\$167,507

LEGEND

	EXISTING TRANSIT STOP
	EXISTING TRANSIT STOP TO BE RELOCATED
	NEW TRANSIT STOP
	REMOVE EXISTING TRANSIT STOP
	NEW CURB RAMP
	NEW SIDEWALK OR CURB EXTENSION
	NEW CURB
	RAISED LANDSCAPED MEDIAN
	CURB EXTENSIONS (W/OR W/O LANDSCAPE)
	RAISED MEDIAN (HARDSCAPE)
	PROPOSED SIGNAL
	PROPOSED STRIPING
	EXISTING PARKING TO BE REMOVED
	OVERHEAD SIGN
	FLASHING BEACON WITH CURVE AHEAD SIGN
	HIGHLY REFLECTIVE RPMs
	LIGHTED SIDEWALK
	ROW
	PROPERTY LINES



**ROSECRANS CORRIDOR
MOBILITY STUDY**

**IMPROVEMENT R:
CURB EXTENSION @ OWENS &
BESSEMER**





S. MEDIAN ISLANDS AT ARMADA

- Construct medians in the center of the road at Armada Place.
- Install curb extensions on the north leg of Kona Way to buffer existing parking along Rosecrans south of the curve.
- Restripe through curve with highly reflective paint and appropriate raised pavement markers
- Install appropriate signage in advance of curve including a flashing beacon and/or V-Calming sign.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement S: Median Islands at Armada				
New Curb and Gutter	370	LF	\$22.00	\$8,140
New Landscaped Median Islands	505	SF	\$7.00	\$3,536
New Landscaped Curb Extensions	600	SF	\$7.00	\$4,200
New or Reconstructed Sidewalks	420	SF	\$8.00	\$3,363
Proposed Striping - Highly Reflective Paint	1,550	LF	\$3.00	\$4,650
Highly Reflective RPMs	14	EA	\$7.00	\$98
Flashing Beacon with Curb Ahead Sign	1	EA	\$5,000.00	\$5,000
Demo Existing Curb and Gutter	175	LF	\$5.00	\$876
Demo Existing AC Paving	200	SF	\$4.00	\$800
Demo Existing Striping	1,060	LF	\$3.00	\$3,180
Sawcut	545	LF	\$5.00	\$2,726
			Subtotal	\$36,570

- LEGEND**
-  EXISTING TRANSIT STOP
 -  EXISTING TRANSIT STOP TO BE RELOCATED
 -  NEW TRANSIT STOP
 -  REMOVE EXISTING TRANSIT STOP
 -  NEW CURB RAMP
 -  NEW SIDEWALK OR CURB EXTENSION
 -  NEW CURB
 -  RAISED LANDSCAPED MEDIAN
 -  CURB EXTENSIONS (W/OR W/O LANDSCAPE)
 -  RAISED MEDIAN (HARDSCAPE)
 -  PROPOSED SIGNAL
 -  PROPOSED STRIPING
 -  EXISTING PARKING TO BE REMOVED
 -  OVERHEAD SIGN
 -  FLASHING BEACON WITH CURVE AHEAD SIGN
 -  HIGHLY REFLECTIVE RPMs
 -  LIGHTED SIDEWALK
 -  ROW
 -  PROPERTY LINES



**ROSECRANS CORRIDOR
MOBILITY STUDY**

**IMPROVEMENT S:
MEDIANS ISLANDS @ ARMADA**





T. CHOKERS NEAR QUALTROUGH AND NEAR KONA

- Construct outside islands (6' wide) adjacent to the outside lane near both Qualtrough and Kona (2 locations)
- Re-route bicycles to the outside of the curb extensions. Provide minimum 5 foot bicycle lanes.
- Construct center island (6' wide) between curb extensions.
- Restripe through the choker with highlight reflective paint and associated raised pavement marking. Maintain a minimum 14' lane through the choker.
- Drainage improvements may be necessary to avoid ponding in bicycle lane or through lane.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement T: Chokers Near Qualtrough and Kona				
New Curb and Gutter	430	LF	\$22.00	\$9,460
New Sidewalk	2,150	SF	\$8.00	\$17,200
New Landscaped Chokers	910	SF	\$7.00	\$6,370
Proposed Striping	870	LF	\$2.00	\$1,740
New Pavement Markings	4	EA	\$50.00	\$200
Demo Existing Striping	980	LF	\$3.00	\$2,940
Drainage Improvements (per location)	2	EA	\$7,500	\$15,000
Sawcut	430	LF	\$5.00	\$2,150
Utility Modification	1	EA	\$1,500.00	\$1,500
			Subtotal	\$56,560



LEGEND	
	EXISTING TRANSIT STOP
	EXISTING TRANSIT STOP TO BE RELOCATED
	REMOVE EXISTING TRANSIT STOP
	NEW CURB RAMP
	NEW SIDEWALK OR CURB EXTENSION
	NEW CURB
	RAISED LANDSCAPED MEDIAN
	CURB EXTENSIONS (W/O OR NO LANDSCAPE)
	RAISED MEDIAN (HARDSCAPE)
	PROPOSED SIGNAL
	PROPOSED STRIPING
	EXISTING PARKING TO BE REMOVED
	OVERHEAD SIGN
	FLASHING BEACON WITH CURVE AHEAD SIGN
	HIGHLY REFLECTIVE RPMs
	LIGHTED SIDEWALK
	ROW
	PROPERTY LINES



**IMPROVEMENT T:
CHOKERS NEAR QUALTHROUGH
& KONA**

**ROSECRANS CORRIDOR
MOBILITY STUDY**





U. MINI ROUNDABOUT AT MCCALL

- Construct a mini roundabout at McCall and Rosecrans
- Restripe in advance of the mini-roundabout with highly reflective paint and provide the appropriate signage
- Stripe crosswalks on all legs of the intersection with highlight reflective paint.
- Install ADA compliant directional curb ramps on all legs of the intersection.
- Modify drainage on all corners to minimize ponding.
- Provide highly reflective signage and advance pavement markings to alert driver of roundabout.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement U: Mini Roundabout at McCall				
Roundabout	1	LS	\$250,000	\$250,000
			Subtotal	\$250,000



ROSECRANS CORRIDOR
MOBILITY STUDY



IMPROVEMENT U:
ROUNDBOUT @ MCCALL





V. CONSOLIDATION OF TRANSIT STOPS

- Consolidate underutilized transit stops.
- Remove existing concrete bus pads at existing transit stops.
- Construct new concrete bus pads at new transit stops.
- Relocate all existing transit stop amenities to new location.
- As necessary, modify the sidewalk and existing landscape to accommodate passenger loading and unloading.

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Improvement V: Consolidation of Transit Stops				
New or Relocated Transit Stop	2	EA	\$8,500.00	\$17,000
Demo Existing Transit Stop	7	EA	\$1,500.00	\$10,500
			Subtotal	\$27,500



LEGEND

-  EXISTING TRANSIT STOP
-  EXISTING TRANSIT STOP TO BE RELOCATED
-  NEW TRANSIT STOP
-  REMOVE EXISTING TRANSIT STOP
-  NEW CURB RAMP
-  NEW SIDEWALK OR CURB EXTENSION
-  NEW CURB
-  RAISED LANDSCAPED MEDIAN
-  CURB EXTENSIONS (W/O LANDSCAPE)
-  RAISED MEDIAN (HARDSCAPE)
-  PROPOSED SIGNAL
-  PROPOSED STRIPING
-  EXISTING PARKING TO BE REMOVED
-  OVERHEAD SIGN
-  FLASHING BEACON WITH CURVE AHEAD SIGN
-  HIGHLY REFLECTIVE RFM
-  LIGHTED SIDEWALK
-  ROW
-  PROPERTY LINES

**ROSECRANS CORRIDOR
MOBILITY STUDY**

**IMPROVEMENT V:
CONSOLIDATION OF TRANSIT STOPS**





Cost Estimates and Conceptual Design

9.7 Summary

A total of 22 improvements were identified for the Rosecrans Corridor Mobility Study. The improvements ranged from minor restriping and signal modifications to reconstruction of major intersections. Overall, the cost of the improvements exceeds over \$6.3 million. Of the projects identified, nearly \$1.4 million in construction costs relate to pedestrian improvements and \$over \$300,000 relate to bicycle improvements. Transit improvements focused primarily on transit stop location and accessibility. But improvements to the existing transit only lane (Rosecrans/Taylor) and the proposed queue jump/right turn lane at Rosecrans/Midway are also included in the Recommended Concept Plan. Overall, transit improvements account for approximately \$160,000 of the total construction costs calculated for the study corridor.

Vehicular flow improvements, which include both capacity enhancements in Area 1 and traffic calming features in Area 4, consume the greatest portion of the calculated construction costs with over \$3.4 million in construction costs identified for the corridor. Vehicle improvements account for all improvements within the curb-to-curb distance of the road (ie, medians, traffic signal, drainage, striping, etc). Many of the improvements identified as vehicle or traffic improvements also include improvements that will improve pedestrian and bicycle access, such as new traffic signals, median islands that provide pedestrian refuge islands, and traffic calming to reduce traffic speed in the residential portion of the corridor.

Although the construction costs estimated exceed \$10 million, the overall to complete the design, environmental and administrative costs will result in nearly doubling the cost of the improvements for the corridor. City of San Diego has standard cost estimating percentages that were applied that result in an increase over the construction cost of nearly 98%. As a result, the total estimated construction, design and administrative cost for the improvements for the corridor exceed \$12 million.

Many of the improvements identified will require some level of environmental review or documentation, which affects both the cost of the project as well as the time needed to complete the improvement. The implementation plan in the following chapter ranks the projects by short, medium and long term projects and identifies potential funding sources for the projects.



Chapter 10: Implementation Plan

Implementation of elements of the Rosecrans Corridor Mobility Study will be a multi-step process. Each community will be able to take elements of this plan and integrate into their individual Community Plans or take the elements of the plan and work through implementation as independent projects. Dependant upon the element of the project, environmental clearance under the California Environmental Quality Act (CEQA) may be required. The initial study conducted for this study determined the potential level of environmental clearance necessary for each element of the plan.

It is possible that some of the improvements identified in this plan would qualify for various levels of local, regional or federal grant funding. If such funding were granted, additional environmental studies under National Environmental Protection Act (NEPA) may also be required. Therefore, moving forward with design and implementation of the changes proposed as part of the Refined Concept Plan would not occur for several years.

This chapter focuses on the establishing the next phase of the Rosecrans Corridor Mobility Study, implementation planning for the changes proposed and identification of potential funding sources.

10.1 NEXT STEPS AFTER MOBILITY STUDY

The future of this project will be dependant upon the several factors including community support for design and construction, and redevelopment efforts in the study area. All elements of the Mobility Study will need to go through the following steps before implementation can occur:

City Approval Process

This step will occur as part of the individual Community Plan updates. Integration of the elements of the Mobility Study into the appropriate Community Plan also would trigger an addition of the project elements into the City's Capital Improvement Program (CIP). This is essential for projects to receive City funding.

Project Funding

Following City Council approval of the Community Plan Update, certification of the appropriate associated environmental document, and integration of projects into the CIP, the staff would ask the City Council to authorize applications for any grant funding relating to final design and construction.

To complete this process, the City will need to allocate staff and financial resources. This process will include a fully-funded plan for maintenance of all special features including medians, landscaping, signage, and similar items. Once financial resources are allocated to implementing this project, the environmental documentation and Community Plan Update process probably will take two to three years to complete.



Final Design

The concepts presented in this report must be reviewed by the City's Engineering and Capital Projects Department, Fire and Rescue Department and others for feasibility prior to implementation and formal recommendation from the community groups. After this initial review, the City would prepare final design plans.

If all the project impacts cannot be identified during the Community Plan Update or if a significant amount of time elapses between the Update and final design, it may be necessary for the City to prepare a second environmental document in conjunction with the final design work.

Construction

Implementation would start with basic striping improvements or improvements that can be completed with the existing right-of-way. Larger, more costly and more controversial improvements have been slated in the medium to long-term.

10.2 IMPLEMENTATION PLAN

The implementation plan phases the construction of the elements of the Mobility Study into short-term, medium-term and long-term improvements. Some improvements have identified as longer than 20 years and others as "Not Supported". All improvements identified in the Final Concept Plan are included in one of these categories of the Implementation Plan.

Short-term improvements focus on improvements that received community and/or Project Working Group Support. These improvements are low cost improvements and typically involve signing and striping. Some elements of the Short-term improvements may be easier and less expensive to implement than others. Those improvements that can be coordinated with planned CIP projects (street improvement and/or drainage projects) should be considered as a higher priority as funding may be more readily available.

Medium-term improvements focus on improvement that can be accomplished within the next 10 years. Design and construction of these larger projects may require environmental clearance that would be initiated during the Short-term. Long-term improvements extend out to the year 2030 and may include some improvements that receive moderate support at both the PWG and community input levels.

Estimated time lines for Short-term, Medium-term and Long-term are based on the level of support from the community, anticipated level of environmental clearance needed, cost and feasibility. Coordinating improvements identified in this document with other planned projects will aid in meeting the timelines established for the elements of the plan. However, it is possible for Medium- and Long-term improvements to be implemented in a short time frame if community support, political support or funding sources become available. Likewise, Short-term improvements could take years before implementation can occur if the community support does not exist or funding sources are not identified. Table 10-1 summarizes the implementation plan for the proposed elements of the Mobility Study as well as long-term improvements identified by the City of San Diego and Caltrans.



ROSECRANS CORRIDOR MOBILITY STUDY

Table 10.1
Implementation Plan

Improvement	Estimated Cost by Project (Construction Cost Only)				
	Short-Term (0-5 years)	Medium-Term (5-10 years)	Long-Term (10-20 years)	Beyond 20 Years	Uncertain
Elements of Mobility Study					
Area 1					
A. Moore Street Median	\$334,225				
B. Bicycle Lanes & Sidewalk Improvements	\$520,788				
C. Extension of Sports Arena					
- Intersection Improvements		\$739,491			
- New Street Connections			\$810,800		
D. Rosecrans & Midway Intersection Improvements					
- Full Improvement		\$539,405			
- Transit Priority Treatments			\$55,725		
E. Remove Parking & Stripe Bike Lanes on Rosecrans (Midway to Nimitz)	\$131,765				
Area 2					
F. Modify Signals					
- Roosevelt	\$176,815				
- Womble	\$71,071				
G. Intermittent Medians and Northbound Left Turn Lanes		\$125,112			
H. Widen Bicycle Lanes through Area 2 (in conjunction with Improvement G)		\$47,040			
I. Side Street Curb Extensions			\$328,141**		
J. Consolidation of Transit Stop	\$30,000				
Area 3					
K. Stripe Bicycle Lanes	\$105,545				
L. Landscape Medians and Left Turn Pockets		\$276,767			
M. New Signal at Emerson	\$201,196				
N. Side Street Curb Extensions			\$207,181		
O. Relocation of Transit Stops	\$33,000				

Implementation Plan



Table 10.1 (Continued)
Implementation Plan

Improvement	Estimated Cost by Project (Construction Cost Only)				
	Short-Term (0-5 years)	Medium-Term (5-10 years)	Long-Term (10-20 years)	Beyond 20 Years	Uncertain
Area 4					
P. Restripe Rosecrans & Talbot	\$68,924				
Q. Complete Sidewalks on West Side of Rosecrans		\$151,172			
R. Curb Extensions at Owens Bessemer					\$167,507
S. Median Islands at Armada					\$36,570
T. Chokers at Qualthrough & Kona					\$56,560
U. Mini-Roundabout at McCall					\$250,000
V. Consolidation of Transit Stops	\$27,500				
TOTAL ESTIMATED CONSTRUCTION COST BY PHASE	\$1,700,829	\$1,878,987	\$1,401,847	\$0	\$510,637

Implementation Plan



ROSECRANS CORRIDOR MOBILITY STUDY

Table 10.2
Other Programmed Projects in the Study Area

Improvement	Short-Term (0-5 years)	Medium-Term (5-10 years)	Long-Term (10-20 years)	Beyond 20 Years	Uncertain
City and Regional Improvement Projects					
1. Construct I-8/Midway-W. Mission Bay Drive Intersection Improvements (Caltrans)	X				
2. Update Traffic Signal Timing on Rosecrans (City)	X				
3. Westbound I-8 to Northbound I-5 Connector (Caltrans)					
- <i>PA/ED Phase Completed</i>	X				
- <i>Design & Construction Completed</i>		X			
4. I-5 Sea World Drive Interchange Improvements (City of San Diego)			X		
5. I-5 to I-8 Missing Move Improvements				X	
6. SANDAG Intermodal Center				X	
7. I-5 Airport Direct Connection Ramps				X	

Note: ** Schedule for implementation of side street curb extensions will be dependant upon requests for such improvements from the community. Locations of such improvements will be evaluated on a case-by-case basis. If community does not support implementation of such devices, it is feasible that such elements of the plan may not be implemented.

Implementation Plan



Short Term: (0-5 years)

Improvements included in the Short Term received community and Project Working Group Support and can be reasonably implemented within the next five years. They are consistent with the Community Plan and would require minimal environmental evaluation to be implemented. Funding for the short term projects would either be provided through additional grant funds, developer funded improvements or through future Capital Improvement Program (CIP) funds.

Area 1:

- Update traffic signal timing along Rosecrans Street. New traffic flow data was collected for this project. City of San Diego is evaluating the traffic data and evaluating the potential for updating the signal timing along the corridor accordingly.
- Roscrans / Midway Intersection Improvements. City of San Diego will reconstruct portions of the median and restripe Rosecrans Street at Midway to lengthen the existing northbound and southbound left turn pockets. On the northbound approach, the restriping will include adding a second northbound left turn lane. Construction of this improvement is anticipated to be completed in mid to late 2010.
- Improvement A: Design & construction of Moore Street median on Camino Del Rio. Improvement includes the installation of a left turn pocket at Hancock Street and modifications to the traffic signal and striping to accommodate the recirculation of traffic. Improvements will be completed within the existing right-of-way.
- Improvement B: Sidewalk improvements and bicycle lane striping on Rosecrans to Transit Center. This improvement includes the installation of a new traffic signal at the intersection of Rosecrans and Hancock Street. In the near term, a single eastbound left turn pocket should be provided from Rosecrans to Hancock Street. As part of the design of this improvement further investigation into existing property lines will need to be investigated. Access to some properties may be affected. The impacts to right-of-way with this improvement are not fully known.
- Improvement C: Conduct further study including preliminary engineering and operational analysis for the extension of Sports Arena Boulevard at Camino del Rio.
- Improvement E: Remove parking on Rosecrans from Midway to Lytton Street and stripe Class II bicycle lanes. This improvement requires minimal right-of-way acquisition on the northwest corner of Rosecrans Street and Nimitz Street.

Area 2:

- Improvement F: Modify traffic signal at Roosevelt Street and Womble Road to accommodate left turn access from the west side of Rosecrans Street. These improvements include improving the



ROSECRANS CORRIDOR MOBILITY STUDY

existing curb ramps at the intersection, restriping and modifications to medians. No right-of-way is anticipated to be required as part of this improvement.

- Improvement J: Consolidation of transit stops in Area 2. This improvement will require coordination with SANDAG/MTS and proper noticing to the community. No impacts to right-of-way will occur with this improvement.

Area 3:

- Improvement K: Stripe bicycle lanes through Area 3 and further study of alternative bicycle treatments. Restriping Rosecrans through Area 3 can be completed within the existing right-of-way. Further study of the parallel routes to provide alternative treatments was recommended by the community and should be considered with future projects in the area.
- Improvement M: Install traffic signal at Emerson. This improvement will be completed within the existing right-of-way. Included with the traffic signal are improvements to the existing curb ramps and restriping of the intersection to accommodate pedestrians.
- Improvement O: Relocate transit stops in Area 3. This improvement will require coordination with SANDAG/MTS and proper noticing to the community. No impacts to right-of-way will occur with this improvement.

Area 4:

- Improvement P: Restripe Rosecrans & Talbot Street to provided dedicated left turn lanes at the intersection. This improvement can be completed within the existing right-of-way. Existing signal operations should be maintained.
- Improvement V: Consolidation of transit stops in Area 4. This improvement will require coordination with SANDAG/MTS and proper noticing to the community. No impacts to right-of-way will occur with this improvement.

Medium Term (5-10 years)

Medium Term improvements will require additional environmental clearance or are more costly than the Short Term Improvements. Although consistent with the Community Plan, these improvements may affect drainage, right-of-way or existing infrastructure. As these improvements are more costly than the Short Term Improvements, multiple funding sources are likely going to be necessary to fully fund these projects. Some projects may be funded through grants and City funds where others may require contributions by future redevelopment efforts and City funds.



Regional Improvement

- Westbound I-8 to northbound I-5 connector. (Caltrans Project) When constructed, this improvement will widen the existing connector and will construct northbound auxiliary lanes from I-5/I-8 junction to 1 mile north of Sea World Drive. The Project Authorization/Environmental Document phase of the project is expected to be completed in April 2010 with design and construction of the project completed in by 2018.

Area 1:

- Improvement C: Design and construct extension of Sports Arena. The details of this improvement will be determined during the Preliminary Engineering analysis. However, it is anticipated that this improvement will also include extensive improvements to pedestrian and bicycle access through the intersection, curb and sidewalk improvements to the north of Rosecrans on Camino del Rio and a new connection between Sports Arena and Hancock (west of Camino del Rio) and/or a new connection between Midway and Sports Arena (east of Rosecrans).
- Improvement D: Rosecrans and Midway improvements. In conjunction with improvements at Sports Arena and Rosecrans, the intersection of Midway and Rosecrans should be fully improved to include bicycle lanes and dedicated right turn lanes. This will require the reconstruction of the center median and acquisition of right-of-way on the southwest corner in order to widen Rosecrans Street southbound.

Area 2:

- Improvement G: Intermittent medians and striping of left turn pockets along Rosecrans Street. This improvement can be constructed within the existing right-of-way. The locations of the median breaks included in this plan are based on existing and forecast traffic volumes and circulation patterns. The final location of the median breaks should be determined during the design phase and coordinated with the community.
- Improvement H: Restripe Rosecrans Street to provide wider bicycle lanes on the southbound (west) side of the street. This improvement should be completed in conjunction with Improvement G. The center median can be narrowed to allocate up to four additional feet to the southbound bicycle lane.
- Improvement K: Implementation of Alternative Bicycle Treatments in Areas 2 and 3. Pending the results of alternative bicycle treatments, such improvements should be designed and constructed in the medium (10-20 year) planning horizon. The details of the alternative bicycle treatments will be determined on an independent planning study.



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Area 3:

- Improvement L: Design and construct landscaped medians and stripe left turn pockets in Area 3. This improvement can be accommodated within the existing right-of-way.

Area 4:

- Improvement Q: Design and Construct sidewalk on west side of Rosecrans Street through Area 4. Preliminary engineering of this improvement will determine the need for right-of-way acquisition and environmental documentation. Pending the resolution of any environmental or right-of-way issues, the missing or damaged segments of sidewalks, missing or damaged curb ramps and appropriate drainage improvements should be designed and constructed.

Long Term (10 to 20 years)

Improvements identified for the long term will require significant modifications to the existing conditions. Improvements in the long term may have impacts to existing land uses in the community and are therefore dependant upon redevelopment to be realized. Other improvements in the long-term will require amendments to the Community Plan and may require additional outreach efforts in the community to be realized. Funding sources for the Long Term improvements are unknown at this time.

Regional Improvement

- I-5/Sea World Drive Interchange. (City of San Diego Project) As of early 2010, the project was in the Project Authorization/Environmental Document phase, which is scheduled to be completed by 2015. Design and construction of this project is anticipated to be completed by 2023.

Area 1:

- Improvement B: Sidewalk improvements and bicycle lane striping on Rosecrans to Transit Center. This improvement includes the installation of a new traffic signal at the intersection of Rosecrans and Hancock Street. In the near term, a single eastbound left turn pocket should be provided from Rosecrans to Hancock Street. As part of the design of this improvement further investigation into existing property lines will need to be investigated. Access to some properties may be affected. The impacts to right-of-way with this improvement are not fully known
- Improvement D: Transit priority treatments in Area 1 (Rosecrans/Sports Arena and Rosecrans/Midway). Based on analysis conducted in this study, queues along the corridor may have an impact on the ability for transit to maintain existing schedules and on-time performance due to increase forecast delays along the corridor. Therefore, it is recommended that transit priority



treatments be considered such as queue jump or transit signal priority to address transit on-time performance by the year 2030.

Area 2:

- Improvement I: Side-street curb extensions in Area 2. The side-street curb extensions should be considered on a case-by-case basis through Area 2. The implementation of curb extensions should be initiated by the community and evaluated as part of the traffic calming program. Funding for these could be provided through a number of grant sources, city CIP program or other private sources.

Area 3:

- Improvement N: Side-street curb extensions in Area 3. Much like Improvement I, the curb extensions through Area 3 should be addressed on a case-by-case basis. The curb extensions would be most beneficial as part of the overall streetscape program or Village revitalization plan. However, requests by property owners for consideration of the curb extensions could be addressed through the traffic calming program and may be funded by a number of sources. Grant funding, city CIP funding and private sources are examples of potential funding sources for curb extension projects.

More than 20 year Improvements

Caltrans identified a number of highway improvements that will be occurring in the Long Term. The improvements identified are either funded through TransNet funds or local funds. However, the region has a number of projects identified beyond the year 2030 that are currently unfunded. Projects along the I-8 and I-5 corridors that fall into the Long Term unfunded category are as follows:

- I-5 to I-8 "Missing Move" Connectors. SANDAG's 2007 RTP lists the freeway connectors from I-8 eastbound to I-5 northbound and from I-5 southbound to I-8 westbound in the Unconstrained Needs Network. These connectors are not funded and would not likely be built until after 2030 should funding become available.
- Additional Studies. Over the next 20 years SANDAG and Caltrans will be conducting a number of studies determine the potential for the following improvements in the long range future according to Caltrans (October 2009):
 - 2050 RTP Potential improvements to Interstate 5.
 - I-5 Airport Direct Connectors
 - SANDAG Airport Intermodal Center
 - Provide HOV/Dedicated Bus Lanes on Pacific Highway
 - Provide new Rosecrans Street off-ramp from I-5/I-8 Interchange to Jefferson St.



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Improvements Not Included in Implementation Plan

A number of improvements were identified along the corridor that address concerns raised by the community during the initial phases of the project. However, when improvements to address those concerns were presented to the community, there was a lack of support from both the Project Working Group and the participants in the second and third workshops. Therefore, those improvements have not been included in the Implementation Plan:

Area 4:

- Improvement R: Curb Extensions at Owens and Bessemer
- Improvement S: Median Islands at Armada
- Improvement T: Chokers at Qualthrough
- Improvement U: Mini Roundabout at McCall

10.3 PRIORITIZATION OF PROJECTS

City of San Diego Council Policy 800-14 outlines the City's criteria for prioritizing projects. Although the policy applies to all potential CIP projects, there are specific guidelines relating to Transportation Related Projects. A copy of CP-800-14 is provided in Appendix 10-A.

As stated in the Council Policy:

"The purpose of this policy is to establish an objective process for ranking CIP projects to allow decision-makers to have a basis for choosing the most compelling projects for implementation. This prioritization process will allow for the analytical comparison of the costs and benefits of individual projects, as well as an opportunity to evaluate projects against one another on their relative merits. Ideally, it will provide a citywide perspective, explore various financing options, and facilitate project coordination. All projects being considered for funding will be prioritized in accordance with the guidelines of this policy. It is proposed that this single CIP prioritization policy address all funding sources and asset classes, including enterprise funded projects (golf, water, sewer, airport facilities, undergrounding and landfill) and transportation and drainage projects. The goal of this policy is to establish a capital-planning process that ultimately leads to policy decisions that optimize the use of available resources, resulting in the maximum benefit from the projects delivered."

The general guidelines for prioritization outlined in the Council Policy were used in this document to prioritize the projects identified in the Recommended Concept Plan and Implementation Plan. The general guidelines used to prioritize the transportation projects are consistent with the Measures of Effectiveness used in identifying projects for the corridor and include:



- Health & Safety: This criterion shall include an assessment of the degree to which the project improves the safety of the public using the facility. This criterion also includes an assessment of the degree that a project is under a regulatory order or other legal mandates relating to public safety. For example, projects that result in reduction in traffic accidents, improved seismic safety rating of a bridge, upgrade of an undersized storm drain to address flooding problems, and reduction of response times by emergency vehicles would score higher. The evaluation of this criterion will constitute twenty-five percent (25%) of the project's total score.

Point Values:

- Reduces Accident Potential – 10 points
- Improves Emergency Response Time – 10 points
- Improves Drainage – 5 points

- Capacity & Service (Mobility): This criterion shall include an assessment of the degree to which the project improves the ability of the transportation system to move people under all modes of travel including vehicle, transit, bicycle, and pedestrian usage. This criterion will also include an assessment of the degree to which the project improves the overall connectivity and reliability of the City's transportation system. For example, projects that reconfigure intersections to reduce delays, improve a parallel road to bypass a congested intersection, and interconnect traffic signals to reduce travel time along a congested corridor would score higher. The evaluation results of this criterion shall constitute twenty percent (20%) of a project's total score.

Point Values:

- Improves intersection level of service – 3 points
- Improves roadway segment operations – 2 points
- Adds signal interconnect or improves signal timing – 2 points
- Improves transit on-time performance or reduces transit travel time – 3 points
- Improves pedestrian access to transit – 2 points
- Completes pedestrian linkage (sidewalks) – 3 points
- Completes or improves bicycle access/connectivity – 3 points
- Improves mobility for more than one mode – 2 points

- Project Cost and Grant Funding Opportunity: This criterion shall include an assessment of the amount of funding needed to complete the current project phase and the entire project, and also include assessment of the amount of City funding in the project compared to the amount of funding provided by grant funds from outside agencies. For example, a project that would bring grant funds from an outside agency into the City would score higher, while a project that relies only on City funds would score lower. The evaluation of this criterion shall constitute twenty percent (20%) of the project's total score.

Point Values:

- Project construction cost (maximum 10 points)
 - < \$150,000 – 10 points



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- 150,000 to \$500,000 – 5 points
 - \$500,000 to \$1,000,000 – 2 points
 - > \$1,000,000 – 0 points
- Potential for Grant Funding – 10 points

- Revitalization, Community Support & Community Plan Compliance: This criterion shall include an assessment of the degree to which the project is in compliance with the General Plan, Community Plan, Regional Transportation Plan, or an approved City-wide master plan. This criterion shall also include an assessment of the degree to which the project is officially supported by the Community Planning Group(s), the Councilmember(s), or a Regional Agency (such as SANDAG). This criterion shall also include an assessment of the degree to which the project contributes towards economic development and revitalization efforts. For example, projects that benefits a pilot village in the City of Villages strategy or furthers smart growth, implements a portion of the City-wide master plan or corridor study, has overwhelming and documented support from the community, implements a portion of an approved Redevelopment Area infrastructure plan, and provides transportation facilities for a Community Development Block Grant eligible area would score higher. The evaluation results of this criterion shall constitute fifteen percent (15%) of a project's total score.

Point Values:

- Revitalizes/Beautification of Community – 5 points
 - Community/PWG Support – 5 points
 - Compliant with Community Plan – 5 points
-
- Multiple Category Benefit: This criterion shall include an assessment of the degree to which the project provides highly rated facilities for multiple project categories (see Section B for project categories). For example, a roadway project that also provides for the replacement of a deteriorated storm drain, a streetscape project that also provides street lighting at critical intersections, and a bikeway project that provides slope stabilization at an area of known erosion problems would score higher. The evaluation of this criterion shall constitute ten percent (10%) of the project's total score.

Point Values:

- 5 points per category benefited (aside from transportation) – maximum 10 points
-
- Annual recurring cost or increased longevity of the capital asset: This criterion shall include an assessment of the degree to which the project reduces operations and maintenance expenditures by the City. For example, a roadway widening project that replaces an area of pavement in poor condition or that installs a highly rated traffic signal would score higher, while a project with equipment that requires frequent maintenance would score lower. The evaluation results of this criterion shall constitute five percent (5%) of a project's total score.

Point Values:

- Increases Annual Maintenance – 0 points



- Reduces City Maintenance – 5 points
- Project Readiness: This criterion shall include an assessment of the time required for a project to complete its current project phase (i.e., planning, design or construction). For example, a project with a completed environmental document or community outreach would score higher, while a highly complex project requiring longer design time or significant environmental mitigation would score lower. The evaluation results of this criterion shall constitute five percent (5%) of a project's total score.

Point Values:

- Completed Community Outreach – 1 points
- No Additional Environmental Documentation – 2 points
- Mitigated Negative Declaration/EIR Needed – 1 point
- No coordination with outside jurisdiction needed – 1 point

A ranking worksheet was prepared for this project based on the point values identified above. Each of the improvements included in the Recommended Concept Plan were evaluated based on these criteria. The results of the ranking analysis and prioritization of projects is provided by phase (short term, medium term and long term projects) in Tables 10.3 through 10.6.

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Table 10.3
Short Term Project Ranking and Prioritization

Improvement Elements of Mobility Plan	Health & Safety (25%)	Mobility (20%)	Cost & Grant Funding Opportunity (20%)	Revitalization, Compliance & Support (15%)	Multiple Category Benefit (10%)	Cost & Longevity of Assets (5%)	Project Readiness (5%)	Score	Rank
A. Moore Street Median	10	9	12	9	5	5	1	51	4
B. Bicycle Lanes & Sidewalk Improvements	0	20	12	4	0	5	1	42	5
E. Remove Parking & Stripe Bike Lanes on Rosecrans	20	3	20	8	0	2	4	57	2
F. Modify Signals - Roosevelt & Womble	10	3	10	10	0	5	4	42	6
J. Consolidation of Transit Stop (Area 2)	0	7	10	10	0	2	2	31	8
K. Stripe Bicycle Lanes	20	3	20	8	0	5	3	59	1
M. New Signal at Emerson	0	17	5	10	0	0	4	36	7
O. Relocation of Transit Stops	0	7	10	10	0	2	2	31	9
P. Restripe Rosecrans & Talbot	10	13	10	10	0	5	4	52	3
V. Consolidation of Transit Stops (Area 4)	0	5	10	5	0	5	2	27	10



Table 10.4
Medium Term Project Ranking and Prioritization

	Health & Safety (25%)	Mobility (20%)	Cost & Grant Funding Opportunity (20%)	Revitalization, Compliance & Support (15%)	Multiple Category Benefit (10%)	Cost & Longevity of Assets (5%)	Project Readiness (5%)	Score	Rank
Elements of Mobility Plan									
C.	0	15	0	9	5	5	2	36	5
G.	10	3	20	13	0	0	3	49	3
H.	20	3	20	8	0	5	4	60	1
L.	10	6	15	13	0	0	2	46	4
Q.	15	6	15	8	10	3	2	59	2

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Table 10.5
Long Term Project Ranking and Prioritization

Improvement	Ranking Criteria									Rank
	Health & Safety (25%)	Mobility (20%)	Cost & Grant Funding Opportunity (20%)	Revitalization, Compliance & Support (15%)	Multiple Category Benefit (10%)	Cost & Longevity of Assets (5%)	Project Readiness (5%)	Score		
Elements of Mobility Plan										
D. Rosecrans & Midway Intersection Improvements	10	17	12	10	0	5	2	56	2	
I. Side Street Curb Extensions	15	3	15	8	5	3	2	51	3	
N. Side Street Curb Extensions	15	3	15	13	10	3	2	61	1	



Table 10.6
Undetermined Implementation Phase – Project Ranking & Prioritization

Improvement Elements of Mobility Plan	Ranking Criteria										Score	Rank
	Health & Safety (25%)	Mobility (20%)	Cost & Grant Funding Opportunity (20%)	Revitalization, Compliance & Support (15%)	Multiple Category Benefit (10%)	Cost & Longevity of Assets (5%)	Project Readiness (5%)					
R. Curb Extensions at Owens Bessemer	10	3	15	5	5	3	2	43	1			
S. Median Islands at Armada	10	0	10	8	0	3	3	34	4			
T. Chokers at Qualthrough & Kona	15	0	20	5	0	0	3	43	2			
U. Mini-Roundabout at McCall	10	9	15	5	0	0	2	41	3			

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10.4 AVAILABLE FUNDING SOURCES

Potential funding sources for projects include, but may not be limited to:

- Capital Improvement Program / General Fund
- Community Development Block Grants
- Developer Impact Fees
- Enterprise Funds (Airport, Environmental Services, Golf, Utilities Undergrounding, Metropolitan Wastewater, and Water)
- Facilities Benefit Assessments
- Other Transportation or Land Use Based Grants
- State and Federal Funds
- TransNet Funds

A complete summary of available funding sources is provided in Table 10-7.

10.5 SUMMARY

The implementation plan identified in this chapter includes both the categorization of projects into short, medium and long term projects as well as a ranking of projects within their respective implementation time-frames. The time-frames identified in this document are based on the feasibility of implementation, potential available funding and community support for projects. It is possible that the implementation time-frames could be delayed or accelerated based on factors such as redevelopment, other CIP projects and/or community support/council support. The future of the projects identified in this plan will be dependant upon the integration of the projects into the Community Plan (where appropriate) and/or into the City's CIP. Without the support of these documents, the improvements will not effectively be realized.

Therefore, the essential next steps in this project include presentation of the plan to the community groups and City Council. Chapter 11 of this document summarizes the support received from the Community Groups pertaining to the elements of the Rosecrans Corridor Mobility Plan.

It is feasible to assume that many of the projects in this report will qualify for some level of grant funding. Community Block Grants, Smart Growth Grants, and Safe Routes to Schools Grants are three specific grants which projects along this corridor would qualify for. This document should be used as the stepping stone for applying for future grant funds for both the environmental evaluation as well as the construction of the plan.



Table 10-7.

Potential Financing Mechanisms

Federal (F)

1. Federal Economic Development Administration (EDA)

The Federal Economic Development Administration (EDA) is a potential source of grant money for the Rosecrans Corridor Mobility Study. Funds from the EDA can be used to finance construction and rehabilitation of infrastructure and facilities that are necessary to achieve long-term growth and dynamic local economies. Grants to communities for site preparation and construction of water and sewer facilities, access roads, etc.

2. Department of Housing and Urban Development (HUD): Community Development Block Grants (CDBG)

Provides partial funding for public infrastructure to support industrial and business expansion. Also downtown revitalization projects, low-income housing, physical infrastructure, low-income jobs, and reduction of blight. Projects must benefit low and moderate income households.

3. U.S. Federal Highway Administration (FHWA) Transportation & Community and System Preservation Pilot Program (TCSP)

Comprehensive initiative of research and grants to investigate the relationships between transportation and community and system preservation and private sector-based initiatives. States, local governments, and metropolitan planning organizations are eligible for these discretionary grants. Grants to plan and implement strategies that improve the efficiency of the transportation system; reduce environmental impacts of transportation; reduce the need for costly future public infrastructure investments; ensure efficient access to jobs, services, and centers of trade; and examine private sector development patterns and investments that support these goals.

4. Federal Highway Administration Department of Transportation (DOT)

Provides funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses.

5. The Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA)

SAFETEA is the third iteration of the transportation vision established by Congress in 1991 with the Inter-modal Surface Transportation Efficiency Act (ISTEA) and renewed in 1998 through the Transportation Equity Act for the 21st Century (TEA-21). Also known as the Federal Transportation bill, the \$286.5 million SAFETEA bill was passed in 2005.

SAFETEA funding will be administered through the state (Caltrans or Resources Agency) and regional planning agencies (SANDAG). Most, but not

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Table 10-7.

Potential Financing Mechanisms

<p>all, of the funding programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Funding criteria often includes completion and adoption of a bicycle master plan, quantification of the costs and benefits of the system (such as saved vehicle trips and reduced air pollution), proof of public involvement and support, CEQA compliance, and commitment of some local resources. In most cases, SAFETEA provides matching grants of 80 to 90 percent--but prefers to leverage other monies at a lower rate.</p>
<p>6. Transportation Efficiency Act for the 21st Century (H.R. 2400)</p> <p>TEA-21 gives local government unprecedented flexibility in developing a mix of highway corridor enhancements, with funds for such projects as public transit, bikeways, highway enhancements, recreation, historic preservation, scenic byways, and other alternatives to address transportation and community needs. Contact source for funding amounts. States and localities are permitted to use federal dollars (provided primarily from the gas tax) for more flexibly to meet their transportation needs. More comprehensive planning, taking into account such factors as desired land use patterns and environmental effects, is required as a prerequisite to federal funding.</p>
<p>7. FTA Metropolitan Planning Program</p> <p>Operated by the Federal Transit Administration (FTA), this program provides financial assistance, through the states, to Metropolitan Planning Organizations (MPO) to support the costs of preparing long-range transportation plans required as a condition of obtaining Federal Capital Program and Urbanized Area Formula Program grants for transit projects. Funds can be used for technical studies relating to management, operations, capital requirements, innovative financing opportunities, and economic feasibility; evaluation of previously assisted projects; and other similar or related activities preliminary to and in preparation for the construction, acquisition or improved operation of transportation systems, facilities and equipment including the planning for "livability" features such as improved pedestrian and bicycle access to the station and shops and community services in the station area, incorporating arts and artistic design in stations and surrounding areas, and other improvements that enhance the usability and community-friendliness of the transit system environment. Up to a maximum of 20 percent of the preliminary engineering and design costs for a transportation facility.</p> <p>NOTE: This is a Planning program, not for construction</p>
<p>8. Congestion Mitigation and Air Quality Improvement Program</p> <p>Congestion Mitigation and Air Quality Improvement funds are programmed by the Federal transportation bill for projects that are likely to contribute to the attainment of a national ambient air quality standard, and congestion mitigation. These funds can be used for a broad variety of bicycle and pedestrian projects, particularly those that are developed primarily for transportation purposes. The funds can be used either for construction of bicycle transportation facilities and pedestrian walkways or for non-construction projects related to safe bicycle and pedestrian use (maps, brochures, etc.). The projects must be tied to a plan adopted by the State and SANDAG.</p>



Table 10-7.

Potential Financing Mechanisms

State (S)

1. Infrastructure State Revolving Fund Program of the California Infrastructure and Economic Development Bank (CIEDP)

This is a loan program that provides low-cost financing to public agencies for a variety of infrastructure programs, including: streets, bridges, drainage, water supply, flood control, environmental mitigation measures, sewage collection and treatment, solid waste collection and disposal, water treatment and distribution, educational facilities and parks and recreational facilities. Funding assistance ranges from \$250,000 to \$10,000,000. The application process is complicated and slow. There must be a dedicated source for debt service of the loan. Tax increment flowing from redevelopment projects is often favored as a funding source for retiring this debt because it flows for a long time and is steady. The term of the loan can be as long twenty years.

2. California Infrastructure and Economic Development Bank (CIEDB)

The CIEDB was created in 1994 to promote economic revitalization, enable future development, and encourage a healthy climate for jobs in California. The CIEDB has broad authority to issue tax-exempt and taxable revenue bonds, provide financing to public agencies, provide credit enhancements, acquire or lease facilities, and leverage State and Federal funds. The Infrastructure Bank's current programs include the Infrastructure State Revolving Fund (ISRF) Program and the Conduit Revenue Bond Program.

3. California Pollution Control Financing Authority Sustainable Communities Loan and Grant Program

The SCGL program has been designed to be flexible and encourage creativity. Funding will be awarded to communities that wish to implement policies, programs and projects using sustainable development principles. All Projects must encompass sustainable development principles to be eligible for funding. Examples of eligible Projects include: 1) Specific plans, or portions of specific plans that direct the nature of development and revitalization within the boundaries of a required general plan consistent with sustainable development principles. 2) Alternative transportation studies, urban design studies, finance plans, redevelopment plans and engineering studies that facilitate sustainable development. 3) Projects such as a community center, park enhancements, or infrastructure improvements that are key elements of a comprehensive community or neighborhood sustainable development plan. 4) Funding for local communities to hire individuals at various stages of planning depending on the needs of the community. An example would be hiring a new staff member or consultant to assist an individual community with the design and/or implementation of a particular plan for development or revitalization using sustainable development principles. 5) Funding for communities to hire technical experts to identify, assess, and complete applications for state, federal and private economic assistance programs that fund sustainable development and sound environmental policies and programs.

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<p>Table 10-7. Potential Financing Mechanisms</p>	<p>4. Bicycle Transportation Account The State Bicycle Transportation Account (BTA) is an annual statewide discretionary program that is available through the Caltrans Bicycle Facilities Unit for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects that benefit bicycling for commuting purposes. The local match must be a minimum of 10% of the total project cost. This program funding is allocated through SANDAG.</p>
<p>5. Environmental Enhancement and Mitigation Program Environmental Enhancement and Mitigation Program Funds are allocated to projects that offset environmental impacts of modified or new public transportation facilities. Bicycle paths, bicycle lanes, and other facilities that encourage alternative transportation are eligible. State gasoline tax monies fund this program.</p>	<p>6. Safe Routes to School (SR2S) The Safe Routes to School program is a state program using funds from the Hazard Elimination Safety program. This program is meant to improve school commute routes by eliminating barriers to bicycle and pedestrian travel through rehabilitation, new projects, and traffic calming. This program requires a 10% local match.</p>
<p>Local and Regional (L)</p>	<p>1. General Fund The City's General Fund is used to support ongoing City operations and services, including general government operations, development services, public safety and community services. Primary revenue sources for the General Fund include property taxes, sales taxes and intergovernmental revenues. It is not uncommon for cities that are seeking to improve their community to commit a certain amount of the General Fund to the effort over a period of years. Improvements and ongoing projects or programs should have general community-wide benefits.</p>
<p>2. General Obligation Bonds (G.O. Bonds) General Obligation bonds may be used to acquire, construct and improve public capital facilities and real property. However, they may not be used to finance equipment purchases, or pay for operations and maintenance. G.O. Bonds must be approved by two-thirds of the voters throughout the Issuer's jurisdiction in advance of their issuance and typically require the issuing jurisdiction to levy a uniform ad valorem (property value) property tax on all taxable properties to repay the annual debt service.</p>	<p>3. Revenue Bonds</p>



Table 10-7.

Potential Financing Mechanisms

Debt undertaken wherein payback is tied to specific revenue streams. This form of debt does not require a public vote. Common uses for funds include housing and social services.

4. Development Incentive Programs

Incentives encourage the private sector to provide the desired public improvement.

5. Business Improvement District (BID) or Business Improvement Areas (BIA)

Self-taxing business districts. BIAs include Business Improvement Districts (BIDs), Local Improvement Districts (LIDs) and other such financial districts. Business and property owners pay for capital improvements, maintenance, marketing, parking, and other items as jointly agreed to through systematic, periodic self-assessment. Currently, there are no BID or BIA's in the Peninsula or North Bay Planning Areas.

Districts can undertake a wide variety of programs, including but not limited to the following:

- Fountains, benches and trash receptacles and integrated signing
- Street lighting
- Security services that are supplemental to those normally provided by the municipality
- Special cleaning operations, graffiti removal, and waste management
- Decorations and public art
- Promotions of public events benefiting area
- Furnishing music to any public place in the area
- Promotion of tourism within the area (only businesses benefiting from tourist visits can be assessed for this type of benefit)
- Any other activities which benefit businesses located in the area

6. Landscape and Lighting Maintenance District (LMDs)

The Landscaping and Lighting Act of 1972 enables assessments to be imposed in order to finance the maintenance and servicing of landscaping, street lighting facilities, ornamental structures and park and recreational improvements.

7. Special Benefit Assessments

ROSECRANS CORRIDOR MOBILITY STUDY

Table 10-7.

Potential Financing Mechanisms

Special Benefit Assessment Districts (AD) are formed for the purpose of financing specific improvements for the benefit of a specific area by levying an annual assessment on all property owners in the district. Each parcel of property within an AD is assessed a portion of the costs of the public improvements to be financed by the AD, based on the proportion of benefit received by that parcel. The amount of the assessment is strictly limited to an amount that recovers the cost of the “special benefit” provided to the property. Traditionally, improvements to be financed using an AD include, but are not limited to, streets and roads, water, sewer, flood control facilities, utility lines and landscaping. A detailed report prepared by a qualified engineer is required and must demonstrate that the assessment amount is of special benefit to the parcel upon which the assessment is levied. Prior to creating an assessment district, the City, county or special district must have a public hearing and receive approval from a majority of the affected property owners casting a ballot. Ballots are weighted according to the proportional financial obligation of the affected property. There are many assessment acts that govern the formation of assessment districts, such as the Improvement Act of 1911, Municipal Improvement Act of 1913, Improvement Bond Act of 1915 and the Benefit Assessment Act of 1982, as well as other specific facility improvement acts.

8. Development Impact Fees

Dedications of land and impact fees are exactions that lessen the impacts of new development or redevelopment resulting from increased population or demand on services.

9. SANDAG Smart Growth Funding Program

Private/Non-Profit (P)

1. Private Donations

Private donations for a variety of different types of projects are generally available from foundations, institutions and corporations that have major interests in these areas.

2. Donor Programs

Some of the proposed improvements may lend themselves to a public campaign for donor gifts. Donor programs have been used very successfully in many cities in the United States for providing funds for streetscape and community design elements. Such programs can be tailored to solicit contributions from individuals, corporations, local businesses and community and business associations. Many improvements could be funded by donor gifts for items such as: benches, trash receptacles, street trees, street tree grates, public art elements and information kiosks. Donors could be acknowledged with a plaque on the element itself or other prominent display, such as a “wall of fame” with donor names.



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CHAPTER 11. SUMMARY OF COMMUNITY MEETINGS

At the conclusion of the Rosecrans Corridor Mobility Study, the Technical Project Team presented the findings of the study to the community groups represented on the Project Working Group. Working with the Project Working Group members, the Technical Team requested that the community groups provide feedback on the 22 improvements identified in the study area. Each group was asked to prepare a letter of acknowledgement to the City regarding the project and summarize their support or concerns in that letter.

When the project concluded in February 2010, the actions had been taken by the community groups:

- Old Town Chamber of Commerce – Voted unanimously in January to provide a letter to the City of San Diego in support of the project.
- Old Town Community Planning Committee – Presentation was made in January. In February, the Planning Committee voted unanimously to provide letter of support to the City of San Diego.
- North Bay Community Planning Group – Presentation was made in January. At that time the Planning Group voted to provide a letter to City of San Diego identifying their concerns about the findings of the study. The Planning Group had previously taken action in November 2009 on this item when they voted on the following items:
 - Overemphasis on bicycle lanes in the study
 - There is a need for improved lighting under the I-5 freeway
 - Opposed to the removal of left turn pocket on northbound Rosecrans at Sports Arena
 - Opposed to removal of parking on Rosecrans Street
 - Opposed to new traffic signal at Rosecrans Street / Hancock Street
- Peninsula Community Planning Board – Presentation was made in January and in February. Board decided to wait until complete study was available for review to provide comments on the 22 improvements presented. Vote anticipated by the Board in April 2010.
- Point Loma Association – Presentation made in January 2010. No action was taken by the Board to provide letter to City.
- La Playa Heritage – Presentation made in February 2010. No action was taken by the members in attendance at the meeting.

Letters received by the City of San Diego are to be inserted into this chapter once received from the various organizations.



CHAPTER 12. SUMMARY AND CONCLUSION

Over a nine month period, the Technical Project Team worked closely with the community in developing mobility solutions for the Rosecrans Corridor. The improvements identified in this study respond to mobility issues identified through the technical analysis and through input from the community during both workshops and Project Working Group meeting. By coordinating with the community on a monthly basis, the Technical Project Team was provided regular feedback on the analysis and recommendations prepared for the corridor. As a result, the majority of the improvements identified in this study were supported by the Project Working Group.

In all, the Recommended Concept Plan developed for the Rosecrans Corridor identified 22 improvements ranging from new sidewalks and bicycle lanes to reconstructed intersections. In identifying improvements for the corridor, the Technical Project Team focused on changes within the existing right-of-way whenever possible in order to minimize impacts to the community and local businesses. Significant improvements that would affect existing structures or surrounding land uses should be addressed in long-range plans, such as the Community Plan. This study focused on identifying short to medium term improvements that would address existing or near term mobility issues.

Traffic Flow Improvements

Overall, the Recommended Concept Plan improves traffic flow by improving intersection operating conditions. Comparing the 2030 No Build conditions to the 2030 with Recommended Concept Plan conditions, the following improvements are made to deficient levels of service:

- Camino del Rio West / Moore St. – Improvement A (median closure): LOS F to LOS E
- Rosecrans St. / Pacific Highway – Improvement B (signal timing improvement): LOS E to LOS D
- Rosecrans St. / Sports Arena Blvd. – Improvement C (geometric improvements): LOS E to LOS C
- Rosecrans St. / Midway Dr. – Improvement D (geometric improvements): LOS E to LOS D
- Rosecrans St. / Garrison St. – Improvements L and M (landscape medians and traffic signal at Emerson): LOS F to LOS B
- Rosecrans St. / Carleton St. – Improvements L and M (landscape medians and traffic signal at Emerson): LOS F to LOS B

Although a number of intersections will benefit from the improvements identified in the Recommended Concept Plan, some intersections will continue to operate at LOS E or F by year 2030. In all cases, significant widening would be needed, which includes acquisition of residential and commercial right-of-way in highly constrained areas. Improvements that would significantly impact right-of-way in residential areas or would affect existing structures were not considered as feasible improvements within the timeframe associated with this Mobility Study. Long term improvements should continue to be considered in the Community Plan and be considered with land use changes or redevelopment along the corridor.

The benefits associated with the intersection improvements are further demonstrated in the travel time operational analysis. The improvements associated with the Recommended Concept Plan are forecast to result in a decrease in travel time along the corridor by as much as three minutes from Lytton Street to Taylor Street. This is primarily due



to improved signal timing between intersections to reflect the year 2030 traffic volumes and the reduction in weaving between the intersections of Rosecrans/Sports Arena and Rosecrans/Kurtz. Between Lytton Street and I-8 freeway connectors, travel time is reduced by nearly four (4) minutes in the northbound direction. This is due to improved signal timing along the corridor and geometric improvements between Midway and Rosecrans. Overall, the improvements included in the Recommended Concept Plan are forecast to improve the travel times to near existing conditions travel times.

Because the improvements along the corridor focused on improving the capacity at key signalized intersections, the benefits of the improvements are not directly reflected in the roadway segment operational analysis. Several segments of Rosecrans Street are forecast to operate at LOS E or F with the Recommended Concept Plan. Analysis is conducted based on a ratio of volume to capacity, not on traffic operational characteristics. Field investigations showed that the source of congestion along the corridor is both due to volume of traffic through the intersections and the signal timing. If key improvements are made along the corridor to improve traffic flow (Midway/Rosecrans and Sports Arena/Rosecrans), the capacity of the existing roadway would significantly improve and improve the operations of the roadway segments. The benefits of these operational improvements are demonstrated in the travel time assessment. Long term improvements to widen Rosecrans Street are included in the Community Plan for North Bay and should be considered if redevelopment occurs along the Rosecrans Corridor or if regional improvements to offset the traffic impacts for the corridor are not constructed.

To help reduce the overall traffic flow along the corridor, the Project Working Group recommended that an "off-site" parking structure be considered for the Rosecrans Corridor Study Area. Combining this off-site parking lot with a Transportation Demand Strategy that integrates carpooling/vanpooling and shuttles to major traffic generators in the study area would help to reduce the overall traffic volume in the area. Coupling this type of improvement with improved access to transit and improved transit service and improved bicycle and pedestrian facilities will help to reduce the reliability on the passenger vehicle and reduce the overall traffic flow along the corridor.

In addition, major infrastructure will be needed to better distribute the traffic throughout the area. Caltrans has identified a number of long term improvements that will improve access to Lindberg Field, access to major transit facilities and freeway connection improvements. All these improvements will aid in reducing the passenger vehicle demand along the Rosecrans Corridor. However, the future of these improvements is uncertain as funding was unknown at the time this report was prepared. Therefore, the improvements suggested by Caltrans for the Horizon Year were not included in this analysis unless specifically in the Regional Transportation Plan.

In 2010, SANDAG will be revisiting the Regional Transportation Plan and identify projects through the year 2050. It is recommended that the City and Community work closely with SANDAG in this effort to identify these future deficiencies in the study area. Regional improvements to the I-5/I-8 interchange, connections to the freeway from Jefferson and connections to the I-8 from Kurtz will all provide congestion relief to Rosecrans Street.

Without this traffic relief, the operations along the corridor will continue to operate at LOS E/F conditions. The North Bay/Midway Community Plan should look closely at these segments and discuss the need to maintain the plan for eight lanes on Rosecrans Street. Long term redevelopment plans should consider the long term benefits of mix-use development in the area to address the traffic related issues.

Pedestrian and bicycle activity along the Rosecrans Corridor varies. In Area 1, high volume of pedestrian and bicycle traffic is directly related to the proximity to the Old Town Transit Center. In Area 2, there is a high volume of pedestrian activity near the Rock Church and High Tech High, both located with Liberty Station. Through the Village (Area 3), the potential for pedestrian traffic is high, but lack of connections between the east and west side of Rosecrans Street affects the level of pedestrian activity through this area. In Area 4, most pedestrian activity is recreational. Regardless of the source of pedestrian or bicycle activity, there are people out and about along the corridor on a daily basis. Many of the participants of the walk audits and community workshops stated that they felt it is unsafe to walk or bicycle along Rosecrans Street. Some stated that they would consider walking if the environment for walking was improved.

The mobility study looked at existing conditions along the corridor and identified projects that would improve the overall pedestrian and bicycling environment.

Pedestrian Improvements

Based on 2009 pedestrian data, approximately 1,525 pedestrian crossings occur during the a.m. peak period (7:00 to 9:00 a.m.) and 2,105 occur during the p.m. peak period along the Rosecrans Corridor. By the year 2030, pedestrian activity is forecast to increase to 2,311 pedestrian crossings in the a.m. peak and 2,808 in the p.m. peak periods. The increase in pedestrian activity warranted evaluation of the existing pedestrian facilities to ensure that pedestrian capacity on sidewalks is being met.

Analysis of the corridor showed that there are numerous gaps and multiple obstructions along the corridor. In addition, curb ramps at intersections did not meet the current ADA requirements. Therefore, the Rosecrans Corridor Mobility Study looked to improve accessibility for pedestrians by completing the sidewalks, providing curb extensions and removing obstructions where feasible. Approximately 30,800 linear feet of sidewalks are currently provided along the entire study corridor, which includes both Rosecrans Street and Camino Del Rio. The Recommended Concept Plan proposes to provide an additional 2,100 linear feet of new sidewalks in locations with currently discontinuous sidewalks, which does not include the sidewalks that will need to be reconstructed or replaced. The Recommended Concept Plan will increase the total linear feet of sidewalks along the corridor to approximately 32,900 feet. Other pedestrian improvements proposed with the Recommended Concept Plan include 71 new curb ramps and 39 new crosswalks along the corridor.



Bicycles Improvements

Based on 2009 bicycle data, approximately 476 bicyclists were observed during the a.m. peak period (7:00 to 9:00 a.m.) and 687 were observed during the p.m. peak period along the Rosecrans Corridor. By the year 2030, bicycle activity is forecast to increase to 788 bicycle trips along the corridor in the a.m. peak and 1,091 in the p.m. peak periods.

It should be noted that the highest bicycle activity along the corridor occurs in Area 1 along Rosecrans Street between the Old Town Transit Center and Sports Arena Boulevard. Through this section, there are currently no bicycle lanes and many of the sidewalks are discontinuous.

Community members shared their concerns about mixing bicycle traffic and passenger vehicle traffic along Rosecrans Street. To address this concern, multiple alternatives were considered to provide Class I bicycle facilities (bicycle paths) along Rosecrans Street as part of this study and presented to both the project technical team and the Project Working Group. Results of this analysis showed that right-of-way constraints, existing curb cuts/driveways and the spacing between major intersections resulted in unfavorable conditions for providing such a facility. Therefore, this study recommends maintaining the Class II bicycle facilities and completing the network by adding new facilities in Areas 1 and 3.

The Rosecrans Corridor Mobility Study aimed to complete the bicycle network along the corridor by completing the gaps in the Class II bicycle lanes that occur in Area 1 and in Area 3. The study corridor currently includes approximately 21,000 feet of Class II bicycle lanes. The Recommended Concept Plan proposes to provide an additional 20,000 feet of Class Two bike lanes, which increases the total length of bike lanes along the study corridor to approximately 41,000 feet. The Recommended Concept Plan also includes recommendations for future consideration of Bicycle Boulevards parallel to Rosecrans Street to provide recreational cyclists an alternate, slower speed route through the study area.

Transit Operational Improvements

Intersection improvements planned for the intersections of Rosecrans St. /Sports Arena Blvd. and Rosecrans St. / Midway Dr. improve the traffic operating conditions to LOS D or better. By reducing the delay and queue length, transit operating conditions through the intersection. According to the travel time analysis conducted, the Recommended Concept Plan is likely to reduce transit travel time by as much as three minutes through Area 1. Additional improvements such as signal priority and queue jump lanes would further improve the operating conditions for transit vehicles.

Queue jump lanes are included in the Recommended Concept Plan at two locations. At the Rosecrans St. /Midway Dr. intersection, a new queue jump lane is planned that will reduce the transit wait time at the intersection. This will allow transit vehicles to bypass queues along the right shoulder in order to reach the proposed transit stop on the far

side of the intersection on the southbound approach. Due to right-of-way constraints, this improvement is included in the long-term improvements for the intersection.

The existing queue jump lane at Rosecrans/Pacific Highway is also proposed to be extended to improve the transit vehicle access approaching the Old Town Transit Center (Improvement B). The extension of this queue jump lane can be accomplished through a re-stripe of Rosecrans Street, but may result in a restriction in left turn access at Jefferson Street.

Transit Stop Modifications

There are 42 transit stops currently provided along the Rosecrans Corridor. To improve transit operations and pedestrian access to the stops, spacing between stops and daily riderships at each stop was evaluated. The plan includes the removal of eight existing transit stops. These stops are either located close to an existing stop or have very low (less than 10 boardings and alightings per day). In addition, seven transit stops are proposed to be relocated to near signalized intersections and other locations with safer pedestrian access, and one new transit stop is proposed to be added to the study corridor. The Recommended Concept Plan proposes a total of 35 transit stops to be provided on the Rosecrans corridor.

Cost and Implementation

In total, the project is estimated to cost over \$13.3 million (in 2010 dollars). Additional costs that should be anticipated, but not included in this estimate include right-of-way and utility relocation. Several projects identified for the Long Term or Beyond 20 year horizon do not include cost estimates. For example, the Project Working Group recommended further investigation of a parking structure to help offset the traffic impacts along the corridor. The location of the off-site lot will impact the cost associated with potential property acquisition and construction costs. Such long-term improvements will need to be re-evaluated for both cost and feasibility when the City determines such opportunities are available or if a funding source to conduct further evaluation becomes available.

With over \$13.3 million in improvements, the elements of the project will need to be implemented in a series of phases. Projects that require minimal right-of-way, have little to no environmental or community outreach needed and could be funded through available city or grant funds were identified as short-term (0-5 year) improvements. Projects that require environmental documentation, are more costly and/or need further input from the community were identified as medium (5-10 year) improvements. Higher cost projects that will require additional design, extensive environmental analysis or require substantial right-of-way acquisition were identified for the long term (10-20 years). Project receiving lower community and/or Project Working Group support and require additional community outreach were identified as beyond 20 years.

Using the general categories listed above, the projects were identified as short, medium and long term projects. However, with community support and available funding, medium and/or long term projects could be considered in an earlier phase. Likewise, lack of funding or additional constraints that could arise during final engineering could result in short term projects occurring in the medium or long term. The purpose of the project phasing plan is to distribute



the projects over several years and provide the City with guidance in allocating funds for future improvements along the corridor.

To further assist the City in identifying priorities in the study area, each of the projects identified were ranked in accordance with the criteria established in Council Policy 800-14. The 22 elements of the Recommended Concept Plan were allocated points based on Health and Safety (25%), Capacity and Mobility (20%), Cost and Potential for Funding (20%), Revitalization and Community Support (15%), Multiple Category Benefits (10%), Project Recurring Cost (5%) and Project Readiness (5%). Details of this ranking process and implementation plan are summarized in Chapter 10.

Projects that serve multiple modes, qualified for potential grant funding programs and required minimal environmental analysis naturally ranked higher than projects that were higher in cost, required additional environmental clearance and served only a single mode. Bicycle lanes and pedestrian improvements were amongst the highest ranking projects based on the scoring criteria established in Council Policy 800-14 and the elements of the project identified in the Mobility Study.

Next Steps

There are many steps that will need to occur before any of the improvements identified in this study can be constructed. This study should be used as the guiding document for improvements with the study area and will be helpful in completing future environmental assessment, grant funding applications and gathering community support for improvements.

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 respective North Bay/Pacific Highway, Old Town and Peninsula Community Plans. 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 Documentation: Traffic operational analysis conducted for this report is consistent with the traffic study requirements established for the City of San Diego. Therefore operational analysis of the key intersection can be used in the development of environmental documents to support elements of the project. Traffic signal warrants can also be used to justify the implementation of new traffic signals.

Grant Application Materials: Conceptual design plans and cost estimates are effective tools that the City can use to pursue grant funding opportunities that will 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 can utilize the analysis prepared as part of this project. Community members will also find elements of this project useful. Community planning groups can also use this information to identify high-priority projects and work with the local government in seeking funding to complete those elements that will resolve current mobility issues. The project team presented the results of this report to the community groups. Letters of support and the results of this outreach opportunity are provided in Chapter 11 of this report.

Conclusion

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 meeting 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 Rosecrans Corridor. Many of the elements that received mixed community opinions will require additional community outreach before a final resolution may be met. The concepts identified in this study area are a starting point and can be used to attract both potential funding sources as well as community support for much needed mobility improvements along the corridor.