Traffic Analysis

Environmental Assessment for the Miramar Pipeline Repair and Relocation
San Diego, CA

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1 INTRODUCTION

This document serves to analyze the traffic and circulation impacts resulting from the construction activities associated with the Repair of the Miramar Pipeline between Naval Base Point Loma (NBPL) and Marine Corps Air Station (MCAS) Miramar. The project will not result in long-term traffic and circulation impacts, as the project will be restoring street geometry to existing conditions following its conclusion. However, construction of the project will require disturbance of existing roadways. It will result in lane closures and access modification during construction activities. This analysis documents the effects of those construction activities on traffic and circulation.

The traffic analysis contained in this report is a precursor to a traffic control plan for the project. The traffic control plan will include detailed routing, lane closure, and warning signage placement information. This traffic analysis provides recommendations on roadway geometric modifications during construction that will be incorporated into the traffic control plan. This document establishes ways to segment the construction activities to minimize traffic flow disruption while not impeding on construction feasibility, and provides detour routes for vehicles and pedestrians when appropriate. This document also identifies potential temporary effects on traffic and circulation associated with project construction and temporary roadway geometric modification. The traffic control plan will develop further detail on roadway configuration and operations during construction. The more detailed analysis and design could potentially lead to a reduction in the magnitude of construction effects compared to the findings of this analysis. The goals of the traffic control plan/traffic analysis effort are to reduce impacts to the local community, businesses, churches, and schools in the area, especially along Rosecrans Street, while maintaining standard traffic control geometries and operations during construction.

1.1 PROJECT LOCATION

The project area is located between NBPL Defense Fuel Support Point (DFSP) in the Naval Base Point Loma Complex (south end of the pipeline) and the first five miles of pipeline extending out into the City of San Diego. The sections of fuel pipeline that will be addressed in this project cross the Peninsula and Midway-Pacific Highway communities within the City of San Diego. NBPL is located on the west side of San Diego Bay, near the mouth of the bay directly opposite Naval Base Coronado, as shown in **Figure 1-1**. NBPL is bordered to the north by the communities of La Playa and Sunset Cliffs; to the east by the San Diego Bay; to the west by the Pacific Ocean; and to the south by Cabrillo National Monument and the Pacific Ocean.

1.2 PURPOSE OF AND NEED FOR THE PROJECT

The purpose of the project is to remedy the acute challenges to the long-term viability of the Miramar Pipeline which equates to making the necessary changes and repairs associated with: 1) pipeline anomalies (e.g., dents, corrosion, and metal loss); and 2) seismic geohazards (e.g., liquefaction/lateral spread, active fault crossing), to ensure the safe and long-term use of the pipeline. Based on recent inspections, portions of the existing pipeline must be relocated, repaired, upgraded, or replaced to remove dents, corrosion, and metal loss to minimize potential future leaks and enhance its overall safety, reliability, and integrity.

Source: Cardno TEC, 2014

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FIGURE 1-1
Project Vicinity Map

The project is critically needed to address the current pipeline anomalies and geohazards to support the Navy's and Department of Homeland Security's existing and future fueling needs and service operations, while allowing the Navy to maintain readiness. Implementation of this project would help to ensure that NBPL Fuel Pier 180 continues to serve as a fuel depot for loading and unloading tankers. The NBPL Fuel Pier 180 is the primary fueling station for Navy and other federal agency ships in the vicinity, and foreign Navy vessels, as well as transferring fuel to the local replenishment vessels and other small craft operating in San Diego Bay. Fuel Pier 180 at NBPL DFSP is critical to the mission of the Navy and is the largest active Navy fueling facility in the vicinity. More than 11 million gallons of fuel are issued and received every month to an average of 43 ships from the Military Sealift Command, Expeditionary Warfare Training Groups, three carrier strike groups, National Oceanic and Atmospheric Administration, Department of Homeland Security, and other nations. In addition, the fuel pipeline provides jet fuel to aircraft at MCAS Miramar and Naval Base Coronado/Naval Air Station North Island. These installations rely on fuel from the pipeline to ensure their operations are carried out successfully.

1.3 REASONABLE ALTERNATIVES SCREENING FACTORS

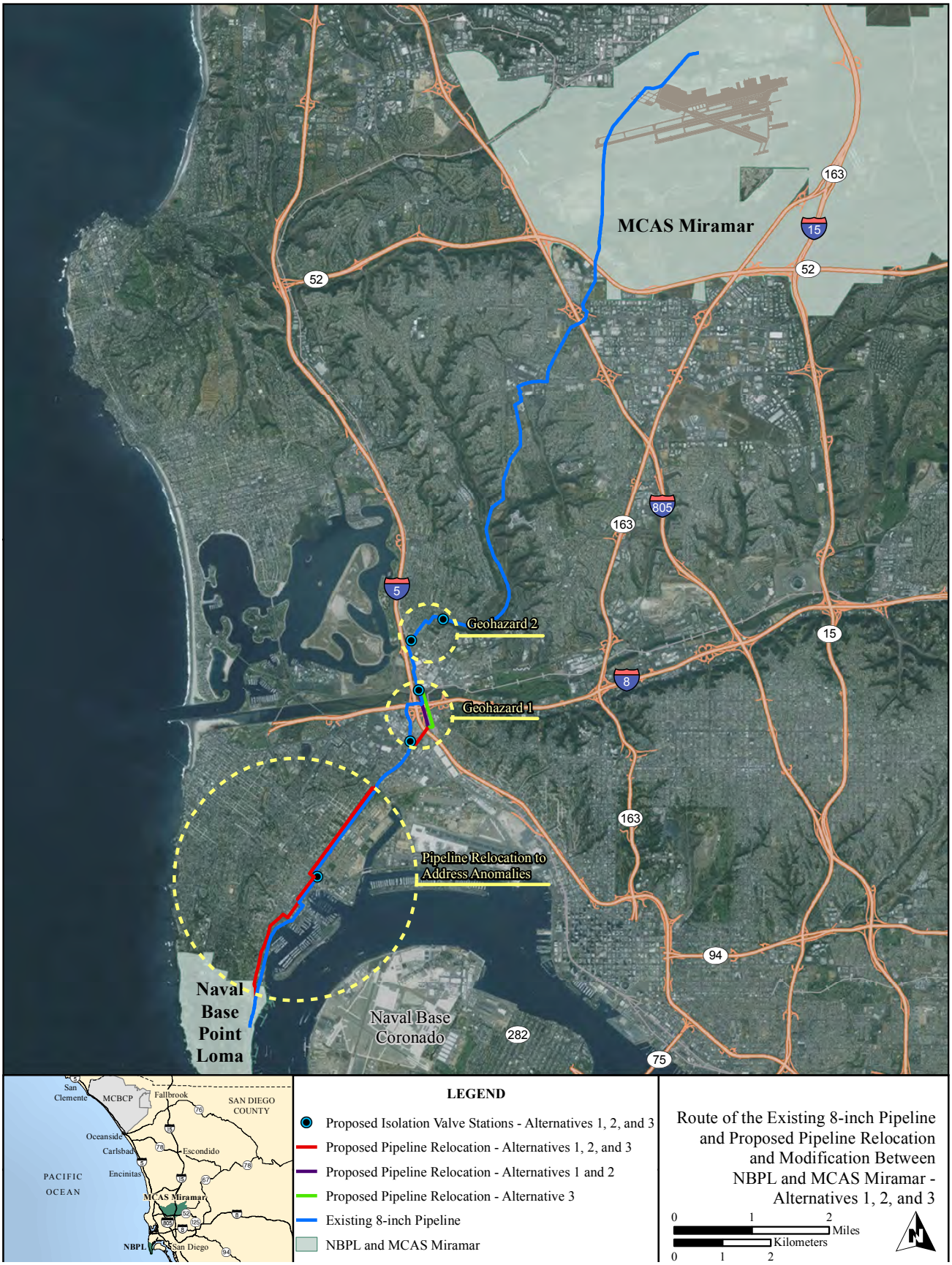
The project screening factors that would allow Navy mission, operational, and support functions to be fulfilled include:

- Fuel product transfer between NBPL to MCAS Miramar or from MCAS Miramar to NBPL must be retained;
- Any new pipeline constructed would be fully compliant with all applicable 49 CFR 195 pipeline construction codes during the removal and pipeline construction phases; and
- NBPL and MCAS Miramar must be able to continue normal operations and not be severely impacted during pipeline repair and relocation activities. Short-term disruptions in use of the pipeline would be acceptable, provided that military installation operations are not impacted.

Based on the screening factors outlined, three action alternatives have been identified that meet the purpose of and need for the project. The No-Action Alternative has also been carried forward for detailed analysis in the EA.

1.3.1 Proposed Action/ Alternative 1

The Proposed Action (herein referred to as Alternative 1) is the continued use of the existing 8-inch fuel pipeline from NBPL to MCAS Miramar as a Government Owned Government Operated system and would implement the pipeline relocation within a modified easement that incorporates changes necessary to address pipeline anomalies and geohazards (**Figure 1-2**). Pipeline relocation would be coordinated with the City of San Diego, Port of San Diego, U.S. Army Corps of Engineers, the San Diego Metropolitan Transit System (MTS), and Caltrans, as necessary.



Source: Cardno TEC, 2014

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FIGURE 1-2
Pipeline Alignment

Under Alternative 1, the pipeline relocation and valve station installation activities discussed in the subsections below would collectively occur approximately between the Fall of 2015 and the Fall of 2017.

Relocation of NBPL to Lytton Street Pipeline Segment to Rosecrans Street to Address Pipeline Anomalies

To provide a long-term solution to address the majority of anomalies that have been found during past inspections and erosion problems along the La Playa waterfront area, the pipeline from NBPL to Lytton Street would be relocated outside the La Playa waterfront area to within the Rosecrans Street right-of-way. Under Alternative 1, the existing pipeline in the La Playa area would be closed in place after defueling, cleaning, disposing of waste, and filling the pipe with concrete, in accordance with regulatory requirements. As per the project design specifications, the new pipe would consist of new 8-inch carbon steel and would be delivered to the site in 40-foot sections that would be pre-coated and welded on-site, above or in the pipeline trenches. The joints of the new pipe sections would be coated with field-applied fusion-epoxy coating. Some belowground welding in the trenches would be needed to join the existing and new sections of the pipe together. These joints would also be coated with field-applied fusion-epoxy coating.

The overall length of new pipeline installation to address pipeline anomalies from NBPL to Lytton Street (La Playa waterfront area) is approximately 3.5 miles, as shown in **Figure 1-3**. The proposed pipeline relocation would be expected to take between 6 and 12 months to complete, including start-up and demobilization. It is estimated that approximately 10-15 workers would be on site during construction. Heavy equipment and vehicles would be used on site for excavation and trenching activities. Typical equipment needed may include excavators, loaders, compactors, multiple heavy-duty trucks, paving equipment, concrete trucks, water trucks, dump trucks, welding truck, excavation shoring equipment, air compressors, and other typical construction tools. The equipment would generally be stationed on site during construction and at an approved staging area when not in use. Construction would be limited to Monday through Friday during non-peak traffic flow times to the extent feasible.

Pipeline Relocation and Valve Station Installation to Address Geohazard 1 (San Diego River Crossing)

As previously discussed in Section 1.3, geohazards applicable to the project area include the high seismic risk potential associated with active fault zones and liquefaction, and lateral spreading that could occur as a result of seismic activity.

To alleviate the geohazard concern identified along the 1,000-foot section of the pipeline that crosses the San Diego River, approximately 1.5 miles of the pipeline would be relocated as shown in **Figure 1-4**. Under Alternative 1, where the existing pipeline crosses beneath the San Diego River, it would be suspended from the Pacific Highway Bridge over the river and continue along Pacific Highway to Rosecrans Street, connecting to the existing pipeline via Kurtz Street. A remotely activated isolation valve station would be installed on the north side of the San Diego River crossing. In addition, a valve station would be installed near the Kurtz Street and Camino Del Rio intersection. The length of the pipeline between the valve stations would be approximately 4,600 feet. The existing pipeline that would no longer be in service would be closed in place after defueling, cleaning, disposing of waste, and filling the pipe with concrete. All regulatory

Source: Cardno TEC, 2014

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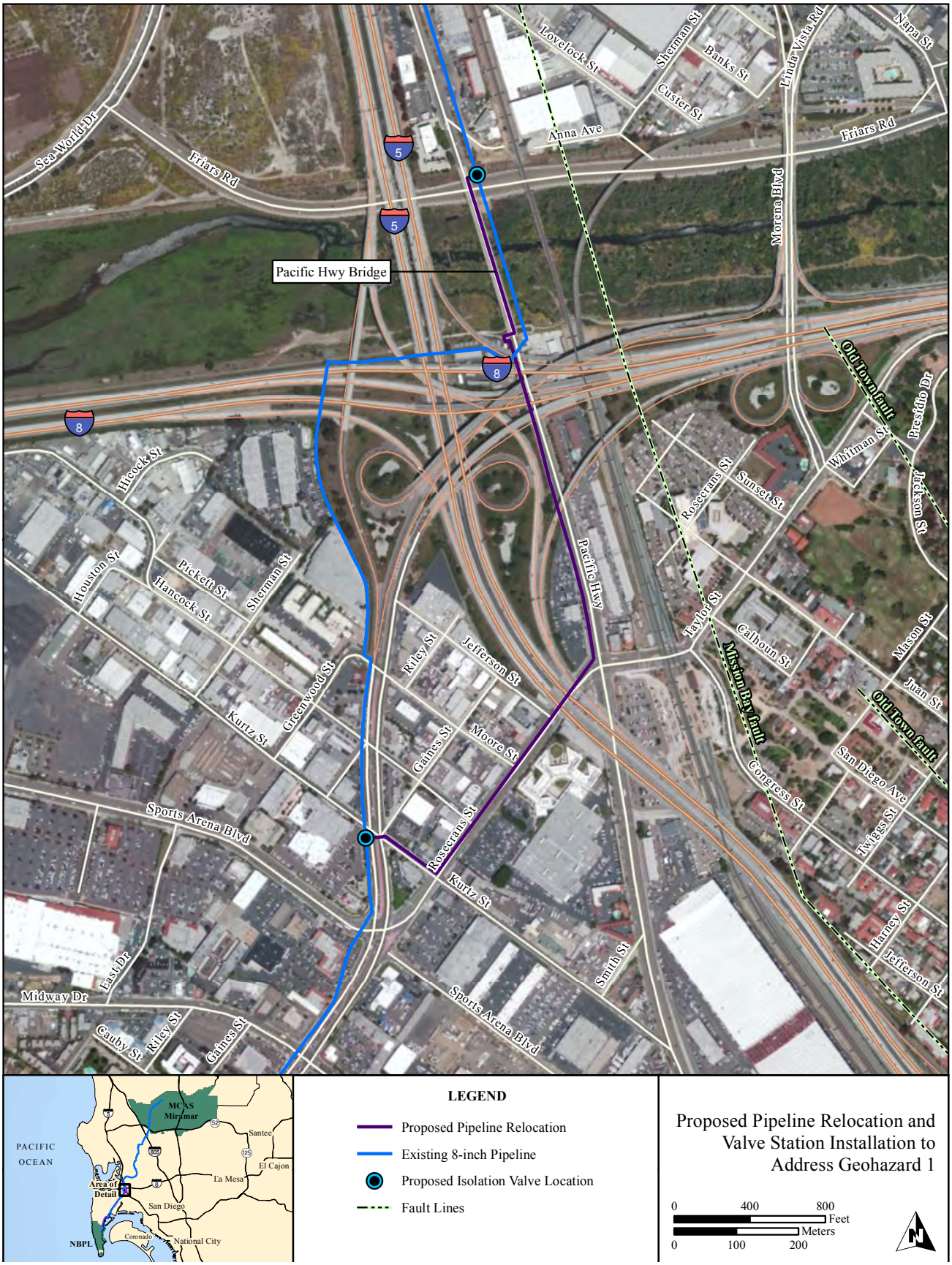
FIGURE 1-3

Pipeline Alignment within La Playa Waterfront Area



Source: Cardno TEC, 2014

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FIGURE 1-4

Pipeline Alignment within San Diego River Area

guidelines and permitting requirements would be followed to ensure safe closure of the pipeline.

Proposed pipeline relocation and valve station installation within the San Diego River area would be expected to take between 6 and 12 months to complete, including start up and demobilization. It is estimated that approximately 10-15 workers would be on site during construction. Heavy equipment and vehicles would be used on site for excavation and trenching activities. All construction activities would occur outside of the river. Typical equipment needed may include scaffolding, excavators, loaders, compactors, multiple heavy-duty trucks, paving equipment, concrete trucks, water trucks, dump trucks, welding truck, excavation shoring equipment, air compressors, and other typical construction tools. The equipment would generally be stationed on site during construction and at an approved staging area when not in use.

Valve Station Installation to Address Geohazard 2 (Area East of Mission Bay)

To alleviate the geohazard concern identified along the existing pipeline that crosses the Rose Canyon Fault Zone east of Mission Bay, two remotely activated isolation stations would be installed to limit the amount of potential product spilled in the event that a major earthquake would severely damage the pipeline. One valve station would be installed along Tecolote Road and the other near the base of Tecolote Canyon (at the end of Knoxville Street, within the cul-de-sac). This work would not carry any notable traffic effects.

1.3.2 Alternative 2

Alternative 2 would consist of the same project components as described under Alternative 1 (see Figures 1-2, 1-3, and 1-4), except that portions of the existing pipeline along the La Playa waterfront area from McCall Street to Talbot Street would be removed instead of closed in place after relocating the pipeline to Rosecrans Street.

Under Alternative 2, portions of the existing pipeline within the La Playa Bayside Trail (where the pipeline is currently exposed due to surface erosion) would be removed after the existing pipe is drained of fuel and cleaned, prior to disposing of the pipe. The portions of existing pipeline along the La Playa waterfront that are under paved streets or under structures that have been placed over the top of the pipe would not be removed, but would be closed in place by filling the pipe with concrete. Therefore, there would not be any traffic impacts associated with Alternative 2 that are not also noted in this report for Alternative 1.

1.3.3 Alternative 3

Alternative 3 would consist of the same project components as described under Alternative 1 (see Figure 1-2, 1-3, 1-4), with the exception that to address Geohazard 1, where the existing pipeline crosses beneath the San Diego River, the pipeline would be suspended from the Santa Fe Railroad Bridge over the river under Alternative 3. Proposed pipeline relocation construction duration and procedures, and valve station installation locations for Alternative 3 would be similar to those described under Alternative 1. Therefore, there would not be any traffic impacts associated with Alternative 3 that are not also noted in this report for Alternative 1.

1.3.4 No-Action Alternative

Under the No-Action Alternative, the Naval Supply Systems Command Fleet Logistics Center San Diego would not implement the pipeline changes necessary to address pipeline anomalies and geohazards. The existing locations where the pipeline anomalies and geohazards have been identified during past inspections would remain. The No-Action Alternative provides a measure of the baseline conditions, against which the potential impacts of the action alternatives can be compared. As such, the No-Action Alternative is carried forward for analysis.

2 ANALYSIS METHODOLOGY

This traffic analysis document examines the impacts associated with construction of the project. This document relies upon the project definition as contained in the 95 percent design submittal. Those plans were used to define the alignment and work area for the project (Enterprise Engineering, Inc., July 2014).

The project will adhere to City of San Diego standards for public works construction. Standards and regulations governing the implementation of the project include the City of San Diego Municipal Code, Land Development Code, and Standard Specifications and Drawings for Public Works Construction, and the California Manual on Uniform Traffic Control Devices. The City of San Diego Traffic Impact Study Manual (July 1998) was referenced when completing the traffic analysis for this project. However, the nature of the project is unique. The project will not result in additional trips on the roadway network, nor modify the permanent geometry of the roadway. All impacts associated with the project will be temporary. Since there are no permanent or long-term impacts and the project does not generate any new trips, the City of San Diego's standard thresholds for significance for transportation, circulation and parking do not apply. The Traffic Impact Study Manual was therefore utilized for roadway capacity thresholds only.

The project will temporarily affect local access, circulation and parking. This document seeks to determine the temporary effects associated with construction and recommend construction practices to limit those effects. Methods to limit the effects associated with the project include specifying segments of construction, specifying hours of construction, temporary modifications to roadway geometrics, and detour routes.

The project will adhere to City standards that restrict the linear extent of open trench to no more than 500 feet in length. Thus, the project will need to be constructed in 500 foot or less segments. By identifying optimal segment breaks, the circulation detriments associated with open trenching can be reduced. Spans across larger roadways can be split into multiple segments to maintain limited access across those roadways. The effects on parcels with multiple access driveways can be lessened by closing one driveway at a time. Additionally, the segments can be broken up between street blocks to reduce the length of detours.

In order to reduce the effects on traffic congestion, the project will not result in open trenches during peak traffic congestion periods unless unavoidable design circumstances apply. This study will recommend periods of construction where appropriate to reduce the number of vehicles impact and the resulting congestion. In order to educate this effort, hourly traffic volumes for a 24-hour period were collected at 43 locations on or near the project alignment. The City's roadway capacity thresholds were compared to the hourly volumes on the roadway to assist in determining appropriate time and segment restrictions. These traffic counts were conducted in May 2014. The raw count data is provided in **Appendix A**. At the beginning and end of each construction period, the open trench will be covered with metal plates and the roadway geometry restored to existing conditions. This will serve to limit effects to circulation, access and congestion during evening and peak-commute periods. Where trenchless construction is required, closing of the jack and bore pits is not feasible; the open trench will be

protected by temporary railings and the construction activity will maximize available work hours to complete the stage of construction in as short of duration as feasible.

Trenching for the project will require a four-foot wide open trench. The City of San Diego requires roadway resurfacing that extends beyond the excavated area. This roadway resurfacing footprint defines the anticipated width of the construction zone. **Table 1** below indicates the construction width outside of the trench area, which is two feet on either side of the pipe centerline.

Table 1 – Roadway Work Zone Areas

Street Classification	Width Beyond Excavated Area (ft.)
Arterial Streets	62 inches
Major Streets	71 inches
Collector Streets	82 inches
Residential Streets	74 inches

As shown in the above table, the work zone will extend anywhere from 7 feet 2 inches (2 foot trench plus 5 foot 2 inch resurfacing area) on arterial streets to 8 feet 10 inches (2 foot trench plus 6 foot 10 inch resurfacing area) on collector streets from the pipe centerline. Thus, the project construction will affect at least one lane of traffic and in locations where the pipe centerline is not closely located to the curb, two lanes of traffic. Much of the project corridor is comprised of two-lane streets. The streets that the pipeline is running along are generally Major Streets, with few alternative routes available. Therefore, the closure of the street to traffic would cause major access challenges. However, by shifting the traffic lanes, reducing lane widths, and temporarily removing parking or turn lanes, roadway access and connectivity can be maintained.

The width of the construction zone and its effect on traffic lanes was analyzed in conjunction with existing roadway volumes, and an optimal roadway configuration to minimize reduction in circulation and connectivity was developed for the extent of the roadways where the pipeline will necessitate lane closure. These proposed roadway geometrics will be further developed and defined in the Traffic Control Plans.

The roadway geometric modifications in some cases do have secondary effects to on-street parking, street access and bicycle facilities. In some cases, capacity is reduced for the opposing direction of travel in order to maintain two-way connectivity. Secondary effects of modified roadway geometry are noted in this report.

Detour routes are recommended where necessitated through reductions in roadway capacity or roadway closures. These detour routes are identified to shift circulation patterns to roadways with sufficient additional capacity and to avoid residential neighborhoods. Signage for the detour routes will be identified in the Traffic Control Plans.

3 EXISTING CONDITIONS

The project is planned to result in construction along Rosecrans Street, Talbot Street, Scott Street, Keats Street, Kurtz Street, and Pacific Highway. Descriptions of current conditions along those roadways are discussed below. Field conditions, including driveway locations, were observed on a site visit in May 2014. Street classifications were obtained from the City of San Diego General Plan Circulation Element (2008) and input from City staff.

3.1 ROSECRANS STREET

3.1.1 Strothe Road to Talbot Street

Rosecrans Street between Strothe Road and Talbot Street functions as a two lane Collector. This segment of Rosecrans Street is fronted on both sides by single and multi-family residential land uses and has a speed limit of 30 miles per hour. Bicycle lanes are provided on both sides of the street for the extent of the segment. Sidewalks are present on either side of the road for the majority of the segment with a gap in the sidewalk network between Owen Street and Qualtrough Street on the west side of the road.

3.1.2 Keats Street to Roosevelt Road

Rosecrans Street between Keats Street and Roosevelt Road functions as a four lane Collector. A speed limit of 35 miles per hour is enforced along this segment of Rosecrans Street which is fronted by commercial and retail land uses on either side. No bicycle facilities are present on the southern portion of the segment from Keats Street to Poe Street. From Poe Street to Roosevelt Road, Class II bicycle lanes are provided on both sides of the street. Sidewalks are provided on both sides of the street for the entirety of this segment.

3.1.3 Roosevelt Road to Lytton Street

Between Roosevelt Road and Lytton Street, Rosecrans Street becomes a five lane Major Arterial with a speed limit of 40 miles per hour. The land uses on either side of this segment of Rosecrans Street consist primarily of residential and civic uses. Class II bicycle lanes and sidewalks are provided on both sides of the street for the extent of the segment.

3.1.4 Lytton Street to Sports Arena Boulevard

The segment of Rosecrans Street between Lytton Street and Sports Arena Boulevard is classified as a Major Arterial. This six lane segment has a speed limit of 40 miles per hour and runs through an area made up primarily of commercial, retail, and office land uses. Sidewalks are provided on both sides of the road for the entirety of the segment but no bicycle facilities are provided along this segment.

3.1.5 Sports Arena Boulevard to Pacific Highway

Rosecrans Street between Sports Arena Boulevard and Pacific Highway is a Major Arterial and returns to a four lane roadway. This portion of Rosecrans Street runs through an area where the land uses are made up primarily of commercial, retail and office uses and has a posted speed limit of 35 miles per hour. Sidewalks are provided on both sides of the road for the entirety of the segment but no bicycle facilities are provided in this area.

3.2 TALBOT STREET

Talbot Street between Rosecrans Street and Scott Street functions as a two lane Collector. This segment of Talbot Street has a speed limit of 25 miles per hour and is fronted on both sides by residential land uses. Sidewalks are provided on both sides of the road along this segment. No bicycle facilities are present along this segment but it is identified as a suggested route in the 2014 San Diego Regional Bike Map.

3.3 KEATS STREET

Keats Street between Scott Street and Rosecrans Street is classified as a Local Street. This two lane road provides access to a variety of land uses including residential, commercial and office uses and has a posted speed limit of 25 miles per hour. Sidewalks are provided on both sides of the street for the entirety of the segment but no bicycle facilities are provided along this segment.

3.4 SCOTT STREET

3.4.1 Talbot Street to Garrison Street

Scott Street between Talbot Street and Garrison Street functions as a Collector and has a posted speed limit of 25 miles per hour. This two lane segment of Scott Street provides access to a limited number of residential land uses on the southern portion of the segment and a variety of commercial land uses along the remainder of the segment. No bicycle facilities exist along this segment from Talbot Street to Shelter Island Drive, but it is classified as a suggested route by the 2014 San Diego Regional Bike Map. From Shelter Island Drive to Garrison Street the roadway is designated as a bicycle route. Sidewalks are provided on both sides of the road.

3.4.2 Garrison Street to Keats Street

Scott Street between Garrison Street and Keats Street is classified as a Local Street and has a posted speed limit of 25 miles per hour. This two lane segment of Scott Street provides access primarily to commercial land uses. For the extent of the segment the road is classified as a Class III bicycle route and sidewalks are provided on both sides of the road.

3.5 PACIFIC HIGHWAY

3.5.1 Rosecrans Street to San Diego River Bridge

North of Rosecrans Street to the San Diego River Bridge, Pacific Highway is classified as a Collector. This two lane segment of Pacific Highway provides access to commercial and industrial land uses on either side and has a posted speed limit of 45 miles per hour. Class II bicycle lanes and sidewalks are provided on both sides of this segment of road.

3.6 TRANSIT

MTS operates the following bus routes along the project alignment (information from MTS website, current as of June 2014):

- Route 84 operates along Rosecrans Street between Naval Base Point Loma and Shelter Island Drive and along Scott Street between Shelter Island Drive and Cañon Street;

- Route 28 operates along Rosecrans Street between Cañon Street and Old Town Transit Center;
- Route 35 operates along Rosecrans Street between Midway Drive and Old Town Transit Center; and
- Routes 8 and 9 operate along Rosecrans Street between Sports Arena Boulevard and Old Town Transit Center.

MTS also operates Route 923 along North Harbor Drive, which crosses the project alignment at Scott Street.

4 DISCUSSION OF EFFECTS

4.1 ALTERNATIVE 1

The new Miramar Pipeline is planned to primarily travel within the traveled way of several roadways in the Peninsula, Midway-Pacific Highway, and Old Town San Diego Community areas. In order to construct the new pipeline, the existing road surface will need to be demolished, and a trench dug to place the pipeline. The trench will need to be filled and the roadway resurfaced. While the trench can be covered with plates during portions of the work period, the excavation of the trench and pavement reconstruction will necessitate the temporary closure of travel lanes and preclude access to adjacent driveways during construction activities.

The work area will be limited to the envelope of the trench area and the influence area needed for staging and required for resurfacing. Given the location of the pipeline within the road bed, this will affect the existing location of one or two lanes of vehicular travel, bicycle facilities, and parking lanes.

The closure of a lane or lanes of vehicular travel reduces the capacity of the roadway. In order to minimize the extent of effects on travel, the cross-section of the roadway will be modified through the use of traffic control. Lanes will be shifted where feasible to limit the amount of roadway capacity reduced. In some cases, the pipeline is located in such an area within the road bed that the shifting of lanes is not feasible and an entire direction of travel will need to be closed to traffic during the excavation and resurfacing period. During these times, vehicles will be detoured to alternate routes.

The pipeline generally runs near the curb line of the roadways it is within. Therefore, during construction of the pipeline, adjacent driveway access to the roadway will be temporarily precluded. The use of the driveways will not be feasible until the trench can be covered or resurfacing is complete. Access to properties with adjacent driveways will be affected while the trench is dug and open. During these times, vehicles will need to park in an alternate location or remain within the property through the duration of the active construction period.

Once construction of each segment of pipeline is complete, the construction area will be resurfaced and the geometry will be restored to existing conditions, with portions of the roadway resurfaced. Thus, the long-term effects of the project will be positive in nature, as the roadway surface within the influence area of the trench will be reconstructed. During construction, effects of the project will be short-term in nature and limited to the duration of the construction activities, which are anticipated to be a matter of a few, possibly non-consecutive, days.

Due to the extremely temporary and short-term nature of the effects, project impacts are considered not significant. To further reduce the effects of the project, special conservation measures (SCMs) have been identified. These SCMs will be implemented to reduce the severity of the short-term impacts and reduce, but not eliminate, the resulting inconvenience to adjacent residents, businesses and affected commute trips.

Construction of the pipeline will result in a number of temporary traffic effects, as discussed in the following sections, including:

- Inhibiting access to properties by precluding driveway access;
- Inhibiting access to roadways, requiring detours to nearby streets or inhibiting access to properties;
- Reduction in roadway capacity, increasing traffic delays and resulting in detours;
- Reduction in on-street parking;
- Reduction or modification to on-street bicycle facilities; and
- Modifications to transit stop locations and route alignments.

Construction activity is planned to occur during daytime hours, except during peak hours of traffic, to the extent feasible. Following completion of the work activity for the day, the trench will be plated, and traffic control removed. This will restore access to blocked driveways and will restore roadway capacity. Where trenchless construction is required, closing of the jack and bore pits is not feasible; the open trench will be protected by temporary railings and the construction activity will maximize available work hours to complete the stage of construction in as short of duration as feasible. Therefore, impacts will be primarily confined to non-peak, daytime hours.

Effects on the transportation network resulting from construction of the new pipeline were examined and separated into two categories. The first category examines driveway and roadway access. The second category includes impacts to circulation, congestion, bicycle facilities, and parking facilities.

4.1.1 Reductions in Access

Appendix B contains graphics that depict the driveway and roadway access impacts associated with construction of the new pipeline.

With the City of San Diego restriction on the consecutive linear feet of roadway that can be excavated at any one time, the number of driveways and on-street parking spaces affected at any one time will be limited.

The southern portion of the La Playa Waterfront alignment, along Rosecrans Street from Strothe Road to Talbot Street, is generally associated with fronting single-family residential driveways. During the active construction period, on-street parking and vehicle access to driveways will be precluded. To minimize the effect construction of the pipeline will have on access to these driveways, the following SCMs are proposed:

SCM 1. Notify residents and businesses of upcoming road work and preclusion of access to their driveways.

SCM 2. Minimize the duration which access is precluded by adhering to the City-standard maximum open trench length of 500 feet.

At two locations, Nichols Street (east leg) and Qualtrough Street (east leg), pipeline construction may preclude access to minor residential streets with no secondary access. In addition to the SCMs 1 and 2 identified above, the following SCM should be considered at these two locations:

SCM 3. Construct in a manner, through phasing and construction techniques, to minimize the duration of closure of Nichols Street (east leg) and Qualtrough Street (east leg) to the extent feasible.

Portions of Rosecrans Street along the southern La Playa Waterfront segment are paralleled by residential streets, including San Antonio Avenue. To reduce the effects on access for properties in this area, implement the following SCM:

SCM 4. Strategically phase construction to limit the number of cross-streets that will be closed and detour traffic traveling to/from or along side streets blocked by the construction trench to the next available side street.

The middle portion of the La Playa Waterfront alignment, generally along Scott Street from Talbot Street to Keats Street, consists of both commercial and residential uses. For commercial uses, access to business may be limited during construction. Many businesses have secondary driveways on roadways not affected by the pipeline and will maintain some measure of access. However, the site design of some properties adjacent to the construction area requires a one-way circulation pattern between driveways or only one driveway is provided. The magnitude of impact to these businesses during construction will be greater. Businesses primarily populated in the evening or during commute hours will experience less of an impact as the result of the construction activity only occurring during off-peak daytime periods. SCMs 1, 2 and 4 should be considered for each of the construction phases in this area to minimize the effect of construction.

The northern portion of the La Playa Waterfront alignment, generally along Rosecrans Street between Keats Street and Lytton Street, is associated with only a handful of fronting properties, and is primarily a five-lane, higher-speed roadway. While there are fewer driveways affected, the capacity of southbound Rosecrans Street will be reduced, resulting in temporary circulation impacts to the community. To minimize effects on fronting properties, SCM 1 is recommended. SCM 4 is recommended to limit the effects on access to properties located in neighborhoods accessed via Rosecrans Street. At a handful of locations, pipeline construction will preclude access to small streets with no secondary access. At these locations, residential vehicular access will be precluded during construction periods. These streets include:

- Tennyson Street;
- Udall Street;
- Voltaire Street;
- Whittier Street; and
- Yonge Street.

In addition to the SCMs 1 and 2 identified above, the following SCM should be considered to address these specific locations:

SCM 5. Construct in a manner, through phasing and construction techniques, to minimize the duration of closure of Tennyson Street, Udall Street, Voltaire Street, Whittier Street, and Yonge Street to the extent feasible.

The San Diego River Crossing alignment is associated with primarily industrial uses along high-volume, higher-speed roadways. There are a limited number of driveways along these

segments that would be affected by construction. SCMs 1 and 2 should be considered for locations where driveway access is adjacent to pipeline construction to minimize construction effects.

4.1.2 Recommended Construction Phasing and Modifications to Geometry

Proposed construction phases and roadway geometrics were developed based on the location of the new pipeline, the required work area, existing roadway geometrics, and existing roadway volumes. The recommended geometrics attempt to limit the magnitude of congestion and access impacts, given the required parameters of the pipeline construction. These geometrics are encompassed in a SCM that serves to reduce the magnitude of effect on vehicle and bicycle circulation:

SCM 6. Through the use of traffic control, modify existing roadway geometrics to best maintain vehicular and bicycle access and provide capacity during the construction period within the available roadway right-of-way.

The proposed traffic handling during the construction of each segment is illustrated in the exhibits in **Appendix C**. These exhibits provide recommendations on the extents of the construction segments in order to limit effects on access and circulation. These exhibits will be considered as a basis of design for preparing traffic control plans and for use by the contractor during construction. In addition to modifying roadway geometrics to best serve traffic during construction, recommendations are provided for time spans of active construction, where necessary, to reduce or eliminate resulting congestion. These recommendations on work hours are associated with the following SCM:

SCM 7. For roadways that will experience congestion due to reduced capacity during construction, limit the hours of construction (and corresponding effects on capacity) to avoid peak periods of traffic on that roadway.

As discussed previously, the main technique of construction will be to construct a trench to install the new pipeline. The trench will preclude access across the trench during construction and roadway reconstruction. At certain locations within the project limits, there is a high volume of crossing traffic that currently crosses the project alignment. In order to reduce the effects of construction on these high-volume and regionally significant crossing roadways, the following SCM will be implemented:

SCM 8. Where the project crosses regionally significant, high volume roadways, use trenchless construction techniques to reduce or eliminate effects to the crossing roadway.

Six locations have been identified for implementation of trenchless construction. The following roadways that cross the project alignment have been identified for trenchless construction:

- North Harbor Drive (along Scott Street);
- Rosecrans Street (at Keats Street);
- Nimitz Boulevard (along Rosecrans Street)
- Lytton Street (along Rosecrans Street);
- Camino del Rio (at Kurtz Street); and

- Pacific Highway and Taylor Street/Rosecrans Street intersection.

Recommendations on roadway geometrics, requirements for lane or roadway closures, recommendations on locations for trenchless construction, and restrictions on hours of work are summarized below. Note that recommendations and identified geometry modifications assume that roadways are not under moratorium at the time of construction. For further discussion of the effects of the moratorium, see Section 4.1.4.

Rosecrans Street

- Strothe Road to Talbot Street (Figures C-1 through C-8):
    - Remove northbound and southbound parking lanes and southbound bicycle lane. Shift northbound and southbound travel lanes to the west and continue to provide one travel lane in each direction.
    - An approximately 240 foot stretch of the roadway segment between Owen Street and Qualtrough Street has a narrower cross-section. In this segment, in order to maintain two lanes in each direction at all times, the contractor may be required to phase the roadway resurfacing effort.
    - In order to avoid a utility conflict north of Qualtrough Street (Figure C-5), the pipeline will need to deviate to the west side of the roadway. The contractor should stage construction of this alignment deviation so that both directions of travel along Rosecrans Street can be maintained at all times, possibly with the assistance of flaggers.
    - Existing capacity is maintained, so no restriction on work hours due to traffic volumes is necessary.
    - Maintain access to the Scripps Institution of Oceanography Nimitz Marine Facility driveway during construction
    - Since no secondary access is available to the following streets, limit duration of closure associated with work at the following locations to the extent feasible:
        - Nichols Street
        - Qualtrough Street

- Keats Street to Nimitz Boulevard (Figures C-17 and C-18):
    - Utilize trenchless construction from Keats Street across northbound Rosecrans Street and along Rosecrans Street across Nimitz Boulevard. Utilize smaller trenchless receiving pits on Rosecrans Street south of Nimitz Boulevard to minimize vehicle impacts.
    - Construction and use of the trenchless construction pit in the southbound lanes of Rosecrans Street at Keats Street and at Nimitz Boulevard requires closure of one or both lanes of southbound Rosecrans Street south of Nimitz Boulevard. If closure of both lanes on southbound Rosecrans Street is required during construction, route detour traffic to Nimitz Boulevard and North Harbor Drive. Alternatively, temporarily remove median on Rosecrans Street between Keats

Street and Macaulay Street and maintain one lane of southbound Rosecrans Street.

- For the segment between the trenchless construction pits at Keats Street and Nimitz Boulevard, provide two different phases of traffic control:
  - Trenching phase: close outside southbound lane and maintain inside southbound lane during the trenching and pipeline installation component of construction.
  - Roadway reconstruction phase: close roadway west of median along Rosecrans Street. Detour southbound Rosecrans Street traffic to Nimitz Boulevard and North Harbor Drive.
- Restrict lane or road closure on Rosecrans Street between 6:00 a.m. and 1:00 p.m., except for trenchless construction activity which requires 24-hour lane closure.

- Nimitz Boulevard to Sterne Street (Figures C-18 through C-22):
  - Close outside southbound lane on Rosecrans Street. Shift inside southbound lane to the east and remove northbound left-turn lanes to Newell Street, Oliphant Street, Poe Street, Quimby Street and Russell Street.
  - Restrict lane closures between 6:00 – 9:00 a.m. and 3:00 – 6:00 p.m.
- Sterne Street to Freeman Street (Figures C-23 through C-30):
  - Provide two different phases of traffic control:
    - Trenching phase: maintain outside southbound lane during the trenching and pipeline installation component of construction.
    - Roadway reconstruction phase: close roadway west of median along Rosecrans Street. Shift southbound traffic east of the median to occupy one of the three northbound lanes. Provide one southbound lane and two northbound lanes.
      - Note that for construction of the segments immediately north of the Laning Road, Farragut Road, Womble Road, and Roosevelt Road intersections, southbound traffic will be shifted to the existing southbound left-turn lane locations and no reduction in capacity will occur for northbound Rosecrans Street.
  - Turns to/from streets west of Rosecrans Street may be precluded. Since no secondary access is available to the following streets, limit duration of closure associated with work across the following roadways to the extent feasible:
    - Tennyson Street;
    - Udall Street;
    - Voltaire Street;
    - Whittier Street; and

        - Yonge Street.

    - Restrict lane closures between 6:00 – 9:00 a.m. and 3:00 – 6:00 p.m.

- Freeman Street to Kingsley Street (Figures C-31 through C-34):

    - Close outside southbound lane on Rosecrans Street. Shift inside southbound lane to the east and remove two-way left-turn lane. Preclude northbound left-turn movements to Goldsmith Street, Homer Street, Ibsen Street, James Street, and Kingsley Street.

    - Restrict lane closures between 6:00 – 9:00 a.m. and 3:00 – 6:00 p.m.

- Kingsley Street to Lytton Street (Figure C-34):

    - Utilize trenchless construction between Kingsley Street and Lytton Street. The trenchless construction pits will require closure of the outside southbound through lane on Rosecrans Street between the southbound approach to Lytton Street and Kingsley Street. One southbound through lane will be maintained. Northbound left-turn movements to Kingsley Street and turning movements from Kingsley Street may be precluded during periods of construction.

    - Immediately north of Lytton Street, to tie into existing pipeline location, close outside southbound through lane and southbound right-turn lane. Allow right-turn movements from the remaining inside southbound through lane. Maintain a path for bicycles along the west curb.

    - Restrict lane or road closures between 6:00 – 9:00 a.m. and 3:00 – 6:00 p.m., except for trenchless construction activity which requires 24-hour lane closure.

- Kurtz Street to Hancock Street (Figure C-35):

    - Close southbound Rosecrans Street except to local traffic and preclude northbound left-turn to Hancock Street. Route southbound detour traffic to Hancock Street and Camino del Rio.

    - Restrict closure between 11:00 a.m. and 1:00 p.m.

- Hancock Street to Moore Street (Figure C-36):

    - Close inside lane on southbound Rosecrans Street and two-way left-turn lane. Preclude northbound left-turns to Hancock Street and Moore Street.

    - No restriction on work hours from a traffic standpoint; volumes are low enough to maintain flow during peak hours with the proposed number of lanes.

- Moore Street to Jefferson Street (Figure C-37):

    - For construction of segment between Moore Street and just south of Jefferson Street, close inside lane on northbound Rosecrans Street and northbound left-turn lane to Jefferson Street.

    - At Jefferson Street, the alignment shifts from the median of Rosecrans Street to the rightmost northbound lane. To facilitate this shift in alignment, shift northbound through traffic to the east and reduce to a single lane. Start the northbound right-turn pocket to Pacific Highway closer to the intersection.
    - No restriction on work hours from a traffic standpoint; volumes are low enough to maintain flow during peak hours with the proposed number of lanes.
- Jefferson Street to Pacific Highway (Figure C-38):
    - Trenchless construction will be utilized to route the pipeline beneath Interstate 5 and across the Pacific Highway and Taylor Street/Rosecrans Street intersection. During use of the trenchless construction pits along Rosecrans Street, close the northbound right-turn lane and bus-only lane to Pacific Highway. Shift right-turn and bus movements to occur as shared movements in existing through lanes. In the vicinity of the trenchless construction pit just south of the Interstate 5 overpass, also close the outside northbound through lane on Rosecrans Street.
    - Restrict lane closures after 3:00 p.m., except for trenchless construction activity which requires 24-hour lane closure.

Talbot Street

- Rosecrans Street to Scott Street (Figures C-8 and C-9):
    - Close roadway to through traffic to construct trench across Talbot Street at Rosecrans Street. Local access would be maintained via Scott Street.
    - No restriction on work hours from a traffic standpoint; volumes are low enough such that detour to Scott Street, Upshur Street, and Cañon Street is not anticipated to result in congestion.

Scott Street

- Talbot Street to Shelter Island Drive (Figures C-9 through C-11):
    - Eliminate parking on southbound Scott Street and shift southbound traffic lane over to maintain one travel lane in each direction.
    - To avoid a utility conflict between Cañon Street and Upshur Street, the alignment will deviate from the southbound curb line to the middle of Scott Street. The contractor should stage construction of this alignment deviation so that both directions of travel along Scott Street can be maintained at all times.
    - Existing capacity is maintained, so no restriction on work hours due to traffic volumes.
- Shelter Island Drive to Carleton Street (Figure C-11):
    - Close one southbound lane. Roadway will have one southbound lane and two northbound lanes.

    - No restriction on work hours from a traffic standpoint; volumes are low enough to maintain flow during peak hours with the proposed number of lanes.

- Carleton Street to Garrison Street (Figures C-12 through C-14):
    - Close both southbound lanes and convert one of two northbound lanes to southbound traffic.
    - No restriction on work hours from a traffic standpoint; volumes are low enough to maintain flow during peak hours with the proposed number of lanes.

- Garrison Street to North Harbor Drive (Figures C-14 and C-15):
    - Close one southbound lane. Roadway will have one southbound lane and two northbound lanes.
    - No restriction on work hours from a traffic standpoint; volumes are low enough to maintain flow during peak hours with the proposed number of lanes.

- North Harbor Drive to Ingelow Street (Figure C-15):
    - South of North Harbor Drive, close one southbound lane on Scott Street to provide staging area for trenchless construction work. Roadway will have one southbound lane and two northbound lanes.
        - No restriction on work hours from a traffic standpoint; volumes are low enough to maintain flow during peak hours with the proposed number of lanes south of North Harbor Drive.
    - North of North Harbor Drive, close southbound Scott Street and adjacent parking lane. Route detour traffic to Rosecrans Street, North Harbor Drive and Nimitz Boulevard.
        - No restriction on work hours from a traffic standpoint; proposed shift from Scott Street north of North Harbor Drive to Rosecrans Street, North Harbor Drive, and Nimitz Boulevard is not anticipated to result in congestion.

- North Harbor Drive to Keats Street (Figures C-15 through C-17):
    - Close southbound Scott Street and adjacent parking lane. Route detour traffic to Rosecrans Street, North Harbor Drive and Nimitz Boulevard.
    - No restriction on work hours from a traffic standpoint; volumes are low enough such that shift to Rosecrans Street, North Harbor Drive, and Nimitz Boulevard is not anticipated to result in congestion.

Keats Street

- Scott Street to Rosecrans Street (Figure C-17):

- Eliminate on-street parking on both sides of the street. Maintain both directions of travel.
- Existing capacity is maintained, so no restriction on work hours due to traffic volumes.

Kurtz Street

- Camino del Rio to Rosecrans Street (Figure C-35):
  - With the use of a receiving pit along Kurtz Street east of Camino del Rio, the southbound left-turn and eastbound through movements to the southern eastbound receiving lane on Kurtz Street will be maintained during construction. The northern receiving lane will be closed for the trenchless construction pit.
    - Existing capacity is maintained, so no restriction on work hours due to traffic volumes.
  - For trench construction along Kurtz Street, eliminate on-street parking on north side of the street.
    - No restriction on work hours from a traffic standpoint; traffic lanes are maintained.

Pacific Highway

- Rosecrans Street to overflow parking lot (Figure C-39):
  - Trenchless construction will be utilized to route the pipeline across the Pacific Highway and Taylor Street/Rosecrans Street intersection. The trenchless construction pit on the north leg of the intersection will require closure of the southbound left-turn lane and one northbound through lane. Convert the inside southbound through lane to a southbound left-turn lane. The remaining northbound receiving lane would be shifted to the east.
    - Restrict lane or road closures after 3:00 p.m., except for trenchless construction activity which requires 24-hour lane closure.
  - During construction of the pipeline along the Pacific Highway southbound left-turn pocket, convert the existing inside southbound through lane to the southbound left-turn lane.
    - Restrict lane or road closures after 3:00 p.m.
  - North of the southbound left-turn pocket the pipeline shifts alignments. Through this section, shift southbound lane to the west and remove southbound parking and bike lane.
    - No restriction on work hours from a traffic standpoint; traffic lanes are maintained.

- Overflow parking lot to San Diego River Bridge (Figures C-39 through C-41):
    - Shift southbound lane to the east and remove the two-way left-turn lane. Shift bike lane to the curb and remove southbound parking lane.
    - No restriction on work hours from a traffic standpoint; traffic lanes are maintained.
- San Diego River Bridge (Figures C-41 and C-42):
    - Along the southern portion of the bridge, shift southbound vehicle and bike lanes to the east and remove the two-way left-turn lane. Along the northern portion of the bridge, shift northbound vehicle and bike lanes to the west and remove the two-way left-turn lane.
    - No restriction on work hours from a traffic standpoint; traffic lanes are maintained.

Roadway Closures

At nearly all cross-streets, construction of the pipeline will result in temporary loss of access to the cross-street. In some locations where the cross-street is a major roadway, the pipeline will be constructed using trenchless construction to minimize traffic impacts at the intersection and to the cross-street. At some additional locations, the construction of the pipeline across the cross-street will be broken into two phases to maintain access to the cross-street at all times. However, some locations will experience a temporary closure of the cross-street that will redirect traffic to an adjacent street. At a few other locations, the location of the pipeline within the roadway and the required construction work area or resurfacing area necessitates the closure of one direction of a roadway for one or multiple blocks, resulting in the need to detour traffic. Roadways under moratorium during the time of construction, and for which a waiver is obtained, will require full repaving from curb line to curb line, or curb line to raised median if a raised median exists. These roadways may require temporary full closure, or partial closure (if a multi-lane facility) beyond those identified below. Roadways under moratorium will have to be identified at the time of construction.

Roadways or traffic movements that will require temporary closure during the construction period will be detoured to alternate routes. Detour routes will be selected in a manner to keep traffic on arterial and collector streets where feasible. In order to limit the effects of the detoured traffic on the community, the following SCM will be implemented:

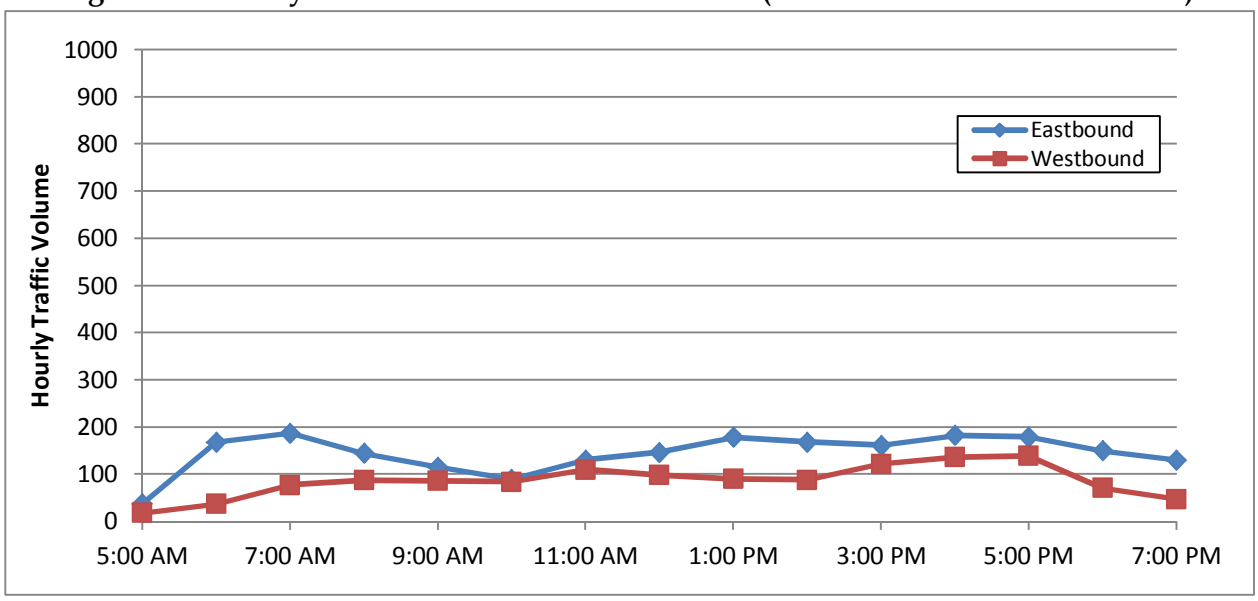
SCM 9. For locations with temporary roadway closures or limitations on allowed turning movements during construction, sign detour routes to direct detoured traffic to arterial or collector streets in order to discourage cut-through traffic on residential streets.

Locations where closure of one direction of a major roadway or closure of a major cross-street is necessitated are noted below, with supporting detours and discussion of secondary effects associated with the detours.

- *Talbot Street at Rosecrans Street (Figure C-8)*: The volume for this segment is shown in **Figure 4-1**. Volumes are very low on Talbot Street and are primarily associated with

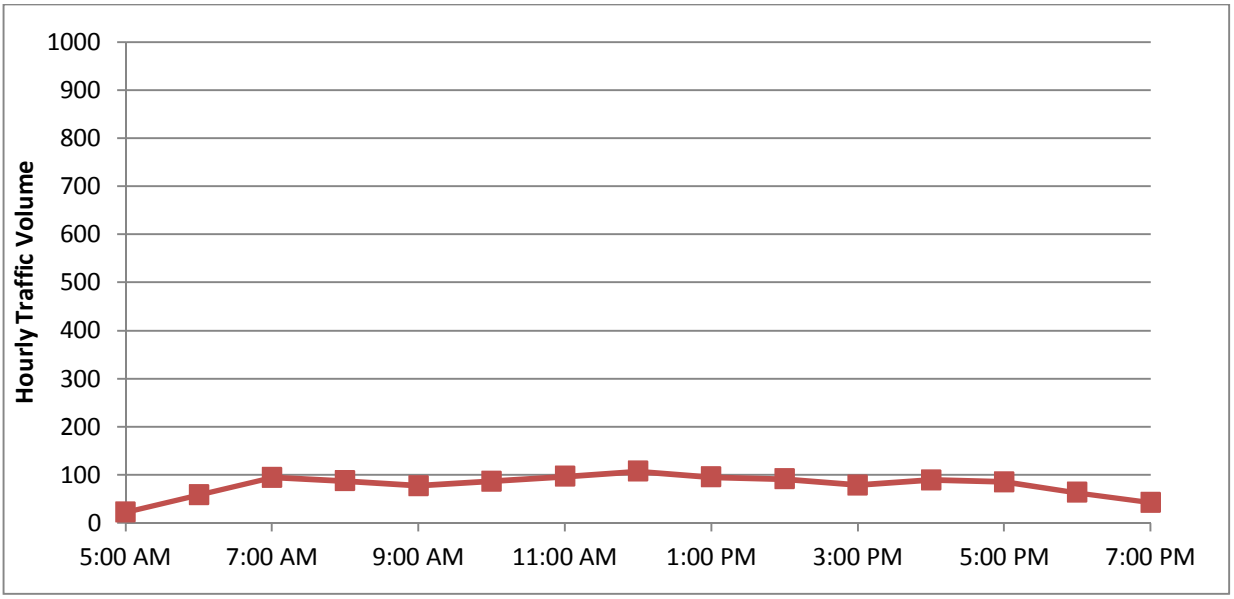
local access. Access will be maintained to businesses on the south side of Talbot Street via Scott Street. Through traffic will be detoured to Upshur Street. Traffic volumes do not necessitate any limitations on the hours of construction.

Figure 4-1: Hourly Traffic Volumes on Talbot Street (Rosecrans Street to Scott Street)



- *Cañon Street at Scott Street (Figure C-10)*: Detour westbound traffic back to Shelter Island Drive or Talbot Street. Detour eastbound traffic at Rosecrans Street. Out-of-direction travel and resulting traffic congestion would not be significant.
- *Shelter Island Drive at Scott Street (Figure C-11):* Detour westbound traffic to Cañon Street at Scott Street. Detour eastbound traffic at Rosecrans Street. Out-of-direction travel and resulting traffic congestion would not be significant.
- *Southbound Scott Street between Keats Street and North Harbor Drive (Figures C-15 through C-17)*: The volumes for this segment of Scott Street are shown in **Figure 4-2**. These traffic volumes will be detoured to Rosecrans Street to the west. The volumes are not high enough to cause a significant impact on Rosecrans Street. Traffic volumes do not necessitate any limitations on the hours of construction.

Figure 4-2: Hourly Traffic Volumes on Southbound Scott Street (Keats Street to North Harbor Drive)



- *Southbound Rosecrans Street between Nimitz Boulevard and Keats Street (Figures C-17 and C-18)*: Closure of this segment may be required during construction and use of the trenchless construction pits and during roadway resurfacing. During construction of the open trench, one southbound lane will be maintained. The volumes for this segment are shown in **Figure 4-3**. As shown in the figure, the volumes are high for this section of Rosecrans Street to be temporarily closed. These traffic volumes will be detoured to Nimitz Boulevard and North Harbor Drive. The detour route is shown in **Figure 4-4**. It is expected that a detour would result in temporary impacts along the detour route roadways and at the Nimitz Boulevard/Rosecrans Street and Rosecrans Street/North Harbor Drive intersections. The detour route is relatively lengthy and shorter cut-through routes through neighborhoods are available. By posting a signed detour route along major streets, cut-through traffic can be reduced, but it is anticipated that cut-through traffic along Scott Street, Locust Street, Keats Street, Jarvis Street, and Ingelow Street may cause a temporary impact to the residential streets. It is recommended to not begin construction until after 1 p.m. in order to reduce the magnitude of effect. To avoid the need for this detour, the median along Rosecrans Street could be temporarily removed for the pipeline construction and then replaced in kind.

Figure 4-3: Hourly Traffic Volumes on Southbound Rosecrans Street (Nimitz Boulevard to Keats Street)

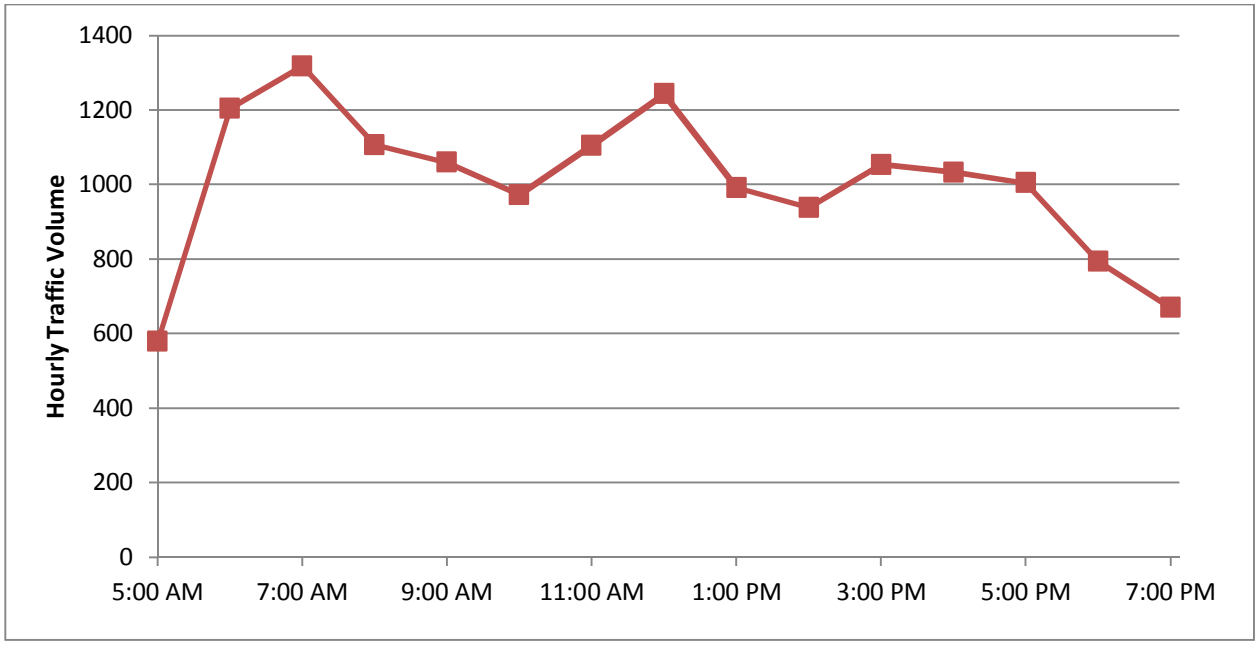


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FIGURE 4-4

Detour Route for Closure of Southbound Rosecrans Street between Nimitz Bouelvard and Keats Street

- *Southbound Rosecrans Street between Hancock Street and Kurtz Street (Figure C-35)*: The volume for this segment is shown in **Figure 4-5** below. These traffic volumes can be detoured along Hancock Street to Camino del Rio, as shown in **Figure 4-6**. This detour route will result in minimal out of direction travel. Traffic volumes will increase on Hancock Street to Camino del Rio and may result in increased congestion at the intersections of Hancock Street/Camino del Rio and Kurtz Street/Camino del Rio. In order to reduce the magnitude of effect, it is recommended to avoid lane or road closures between 11:00 a.m. and 1:00 p.m.

Figure 4-5: Hourly Traffic Volumes on Southbound Rosecrans Street (Hancock Street to Kurtz Street)

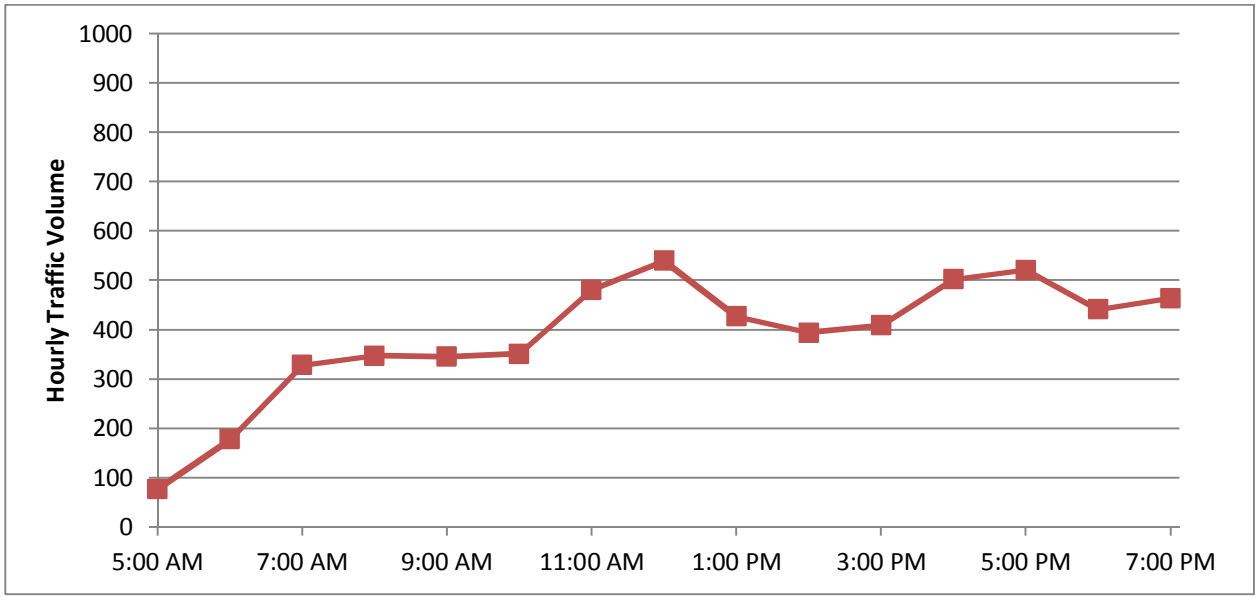

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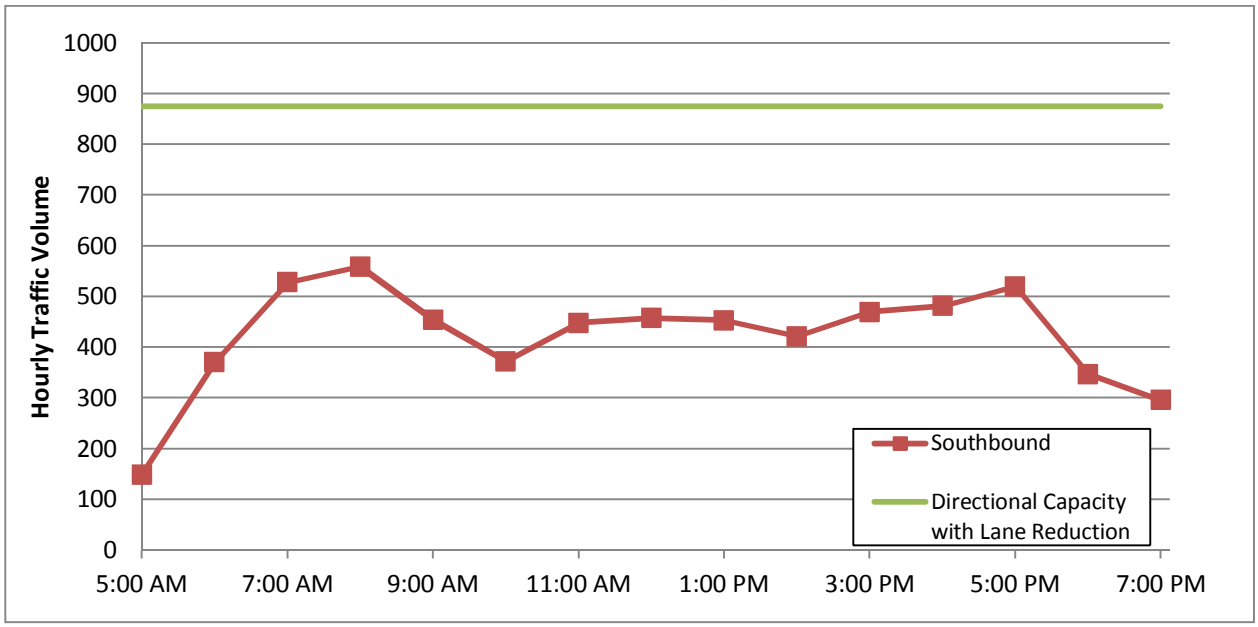
FIGURE 4-6

Detour Route for Closure of Southbound Rosecrans Street Between Hancock Street and Kurtz Street

Reductions in Roadway Capacity

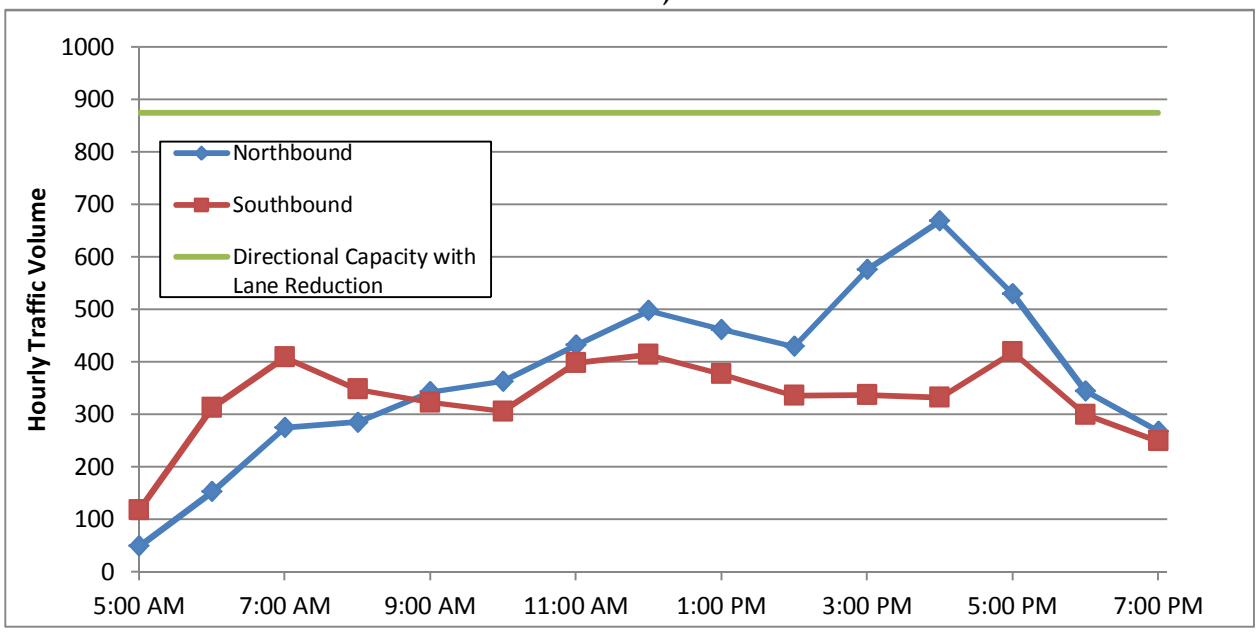
- *Scott Street between Shelter Island Drive and Carleton Street (Figures C-11 and C-12)*: Reduction in capacity for the southbound direction from two lanes to one lane. Traffic volumes for this segment are shown in **Figure 4-7** below. As shown in the figure, one travel lane is sufficient to handle the traffic volumes experienced on this segment. No congestion impact resulting from the lane closure is anticipated. Traffic volumes do not necessitate any limitations on the hours of construction.

Figure 4-7: Hourly Traffic Volumes on Southbound Scott Street (Shelter Island Drive to Dickens Street)



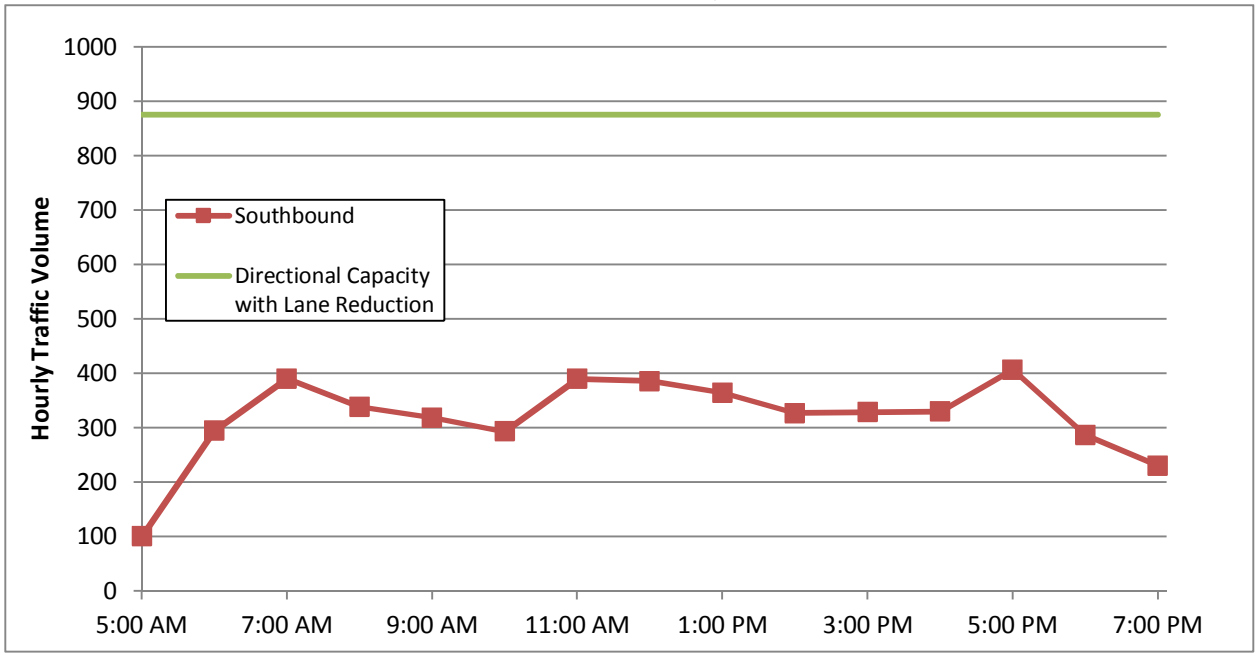
- *Scott Street between Carleton Street and Garrison Street (Figures C-13 and C-14)*: Reduction in capacity for both northbound and southbound direction from two lanes to one lane. Traffic volumes for this segment are shown in **Figure 4-8**. As shown in the figure, one travel lane is sufficient to handle the traffic volumes experienced on this segment. No congestion impact resulting from the lane closure is anticipated. Traffic volumes do not necessitate any limitations on the hours of construction.

Figure 4-8: Hourly Traffic Volumes on Scott Street (Between Dickens Street and Garrison Street)



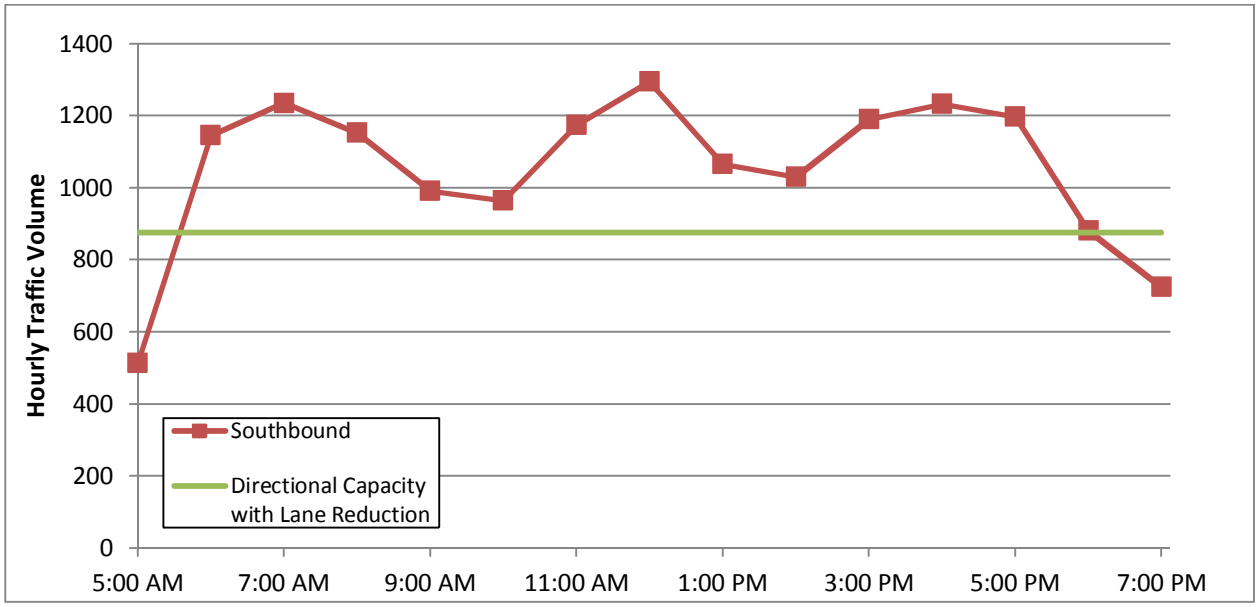
- *Scott Street between Garrison Street and North Harbor Drive (Figure C-15)*: Reduction in capacity for the southbound direction from two lanes to one lane. Traffic volumes for this segment are shown in **Figure 4-9** below. As shown in the figure, one travel lane is sufficient to handle the traffic volumes experienced on this segment. No congestion impact resulting from the lane closure is anticipated. Traffic volumes do not necessitate any limitations on the hours of construction.

Figure 4-9: Hourly Traffic Volumes on Scott Street (Between Garrison Street and North Harbor Drive)



- *Rosecrans Street between Macaulay Street and Sterne Street (Figures C-19 through C-22):* Reduction in capacity for the southbound direction from two lanes to one lane. Traffic volumes for this segment are shown in **Figure 4-10** below. As shown in the figure, one lane is not sufficient to handle the existing volumes on southbound Rosecrans Street. Congestion and queuing will be experienced on Rosecrans Street. It is likely that some traffic will detour to Locust Street or through Liberty Station to North Harbor Drive. Cut-through traffic on Locust Street could result in a temporary impact to the residential neighborhood. While traffic volumes are high throughout the day, the magnitude of effects of the capacity reduction would be somewhat less if construction were to be limited to between the hours of 9:00 a.m. and 3:00 p.m.

Figure 4-10: Hourly Traffic Volumes on Rosecrans Street (Between Macaulay Street and Sterne Street)



- *Rosecrans Street between Sterne Street and Freeman Street (Figures C-23 through C-30)*: During trenching, reduction in capacity in the southbound direction from two lanes to one lane. During roadway resurfacing, reduction in capacity for the southbound direction from two lanes to one lane and for the northbound direction from three lanes to two. Traffic volumes for this segment are shown in **Figures 4-11** through **4-14**. As shown in the figures, one lane is not sufficient to handle the existing volumes on southbound Rosecrans Street. During roadway resurfacing, two lanes will be sufficient to handle the existing volumes on northbound Rosecrans Street, except for during the afternoon peak periods. Congestion and queuing will be experienced on Rosecrans Street. It is likely that some traffic will detour to Truxtun Road through Liberty Station. Cut-through traffic on Truxtun Road and associated turning movements at the Rosecrans Street/Laning Road, Rosecrans Street/Farragut Road, Rosecrans Street/Womble Road, Rosecrans Street/Roosevelt Road intersections could result in congestion. Construction is recommended to occur between 9:00 a.m. and 3:00 p.m. to limit the magnitude of effect. Even with these time restrictions, the roadway will be substantially over capacity and congestion and cut-through traffic will occur during the temporary lane reduction period.

Figure 4-11: Hourly Traffic Volumes on Rosecrans Street (Between Sterne Street and Farragut Road)

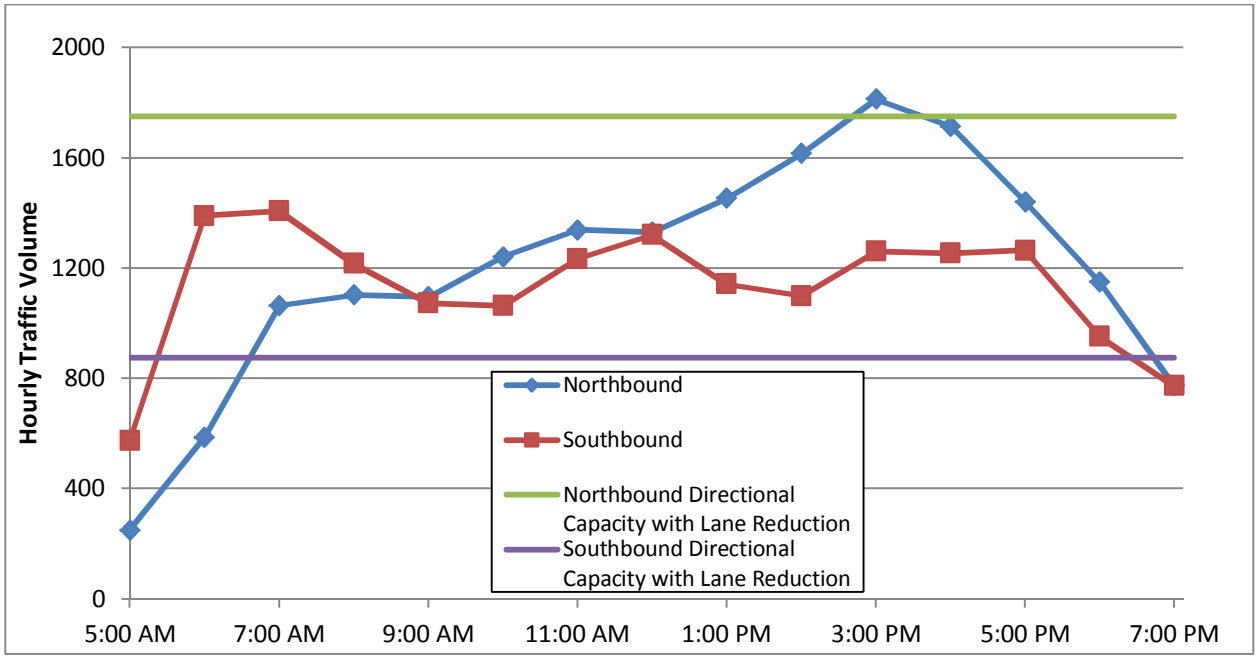


Figure 4-12: Hourly Traffic Volumes on Rosecrans Street (Between Farragut Road and Womble Street)

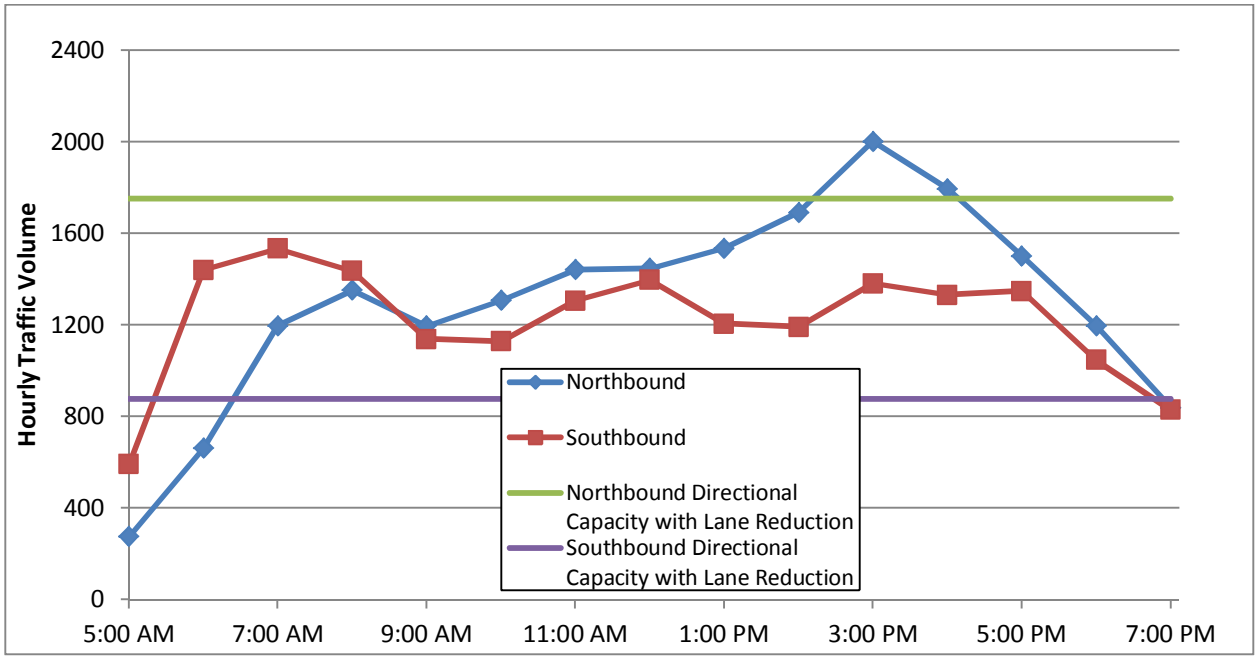


Figure 4-13: Hourly Traffic Volumes on Rosecrans Street (Between Womble Street and Roosevelt Street)

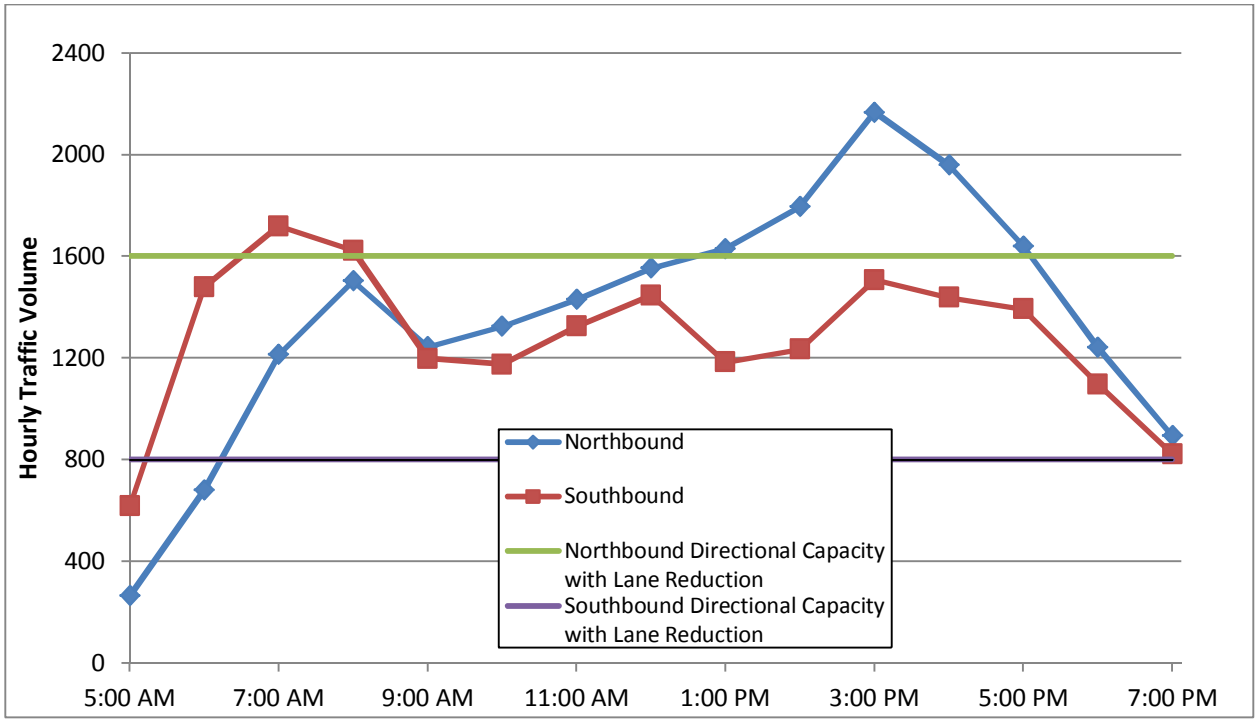
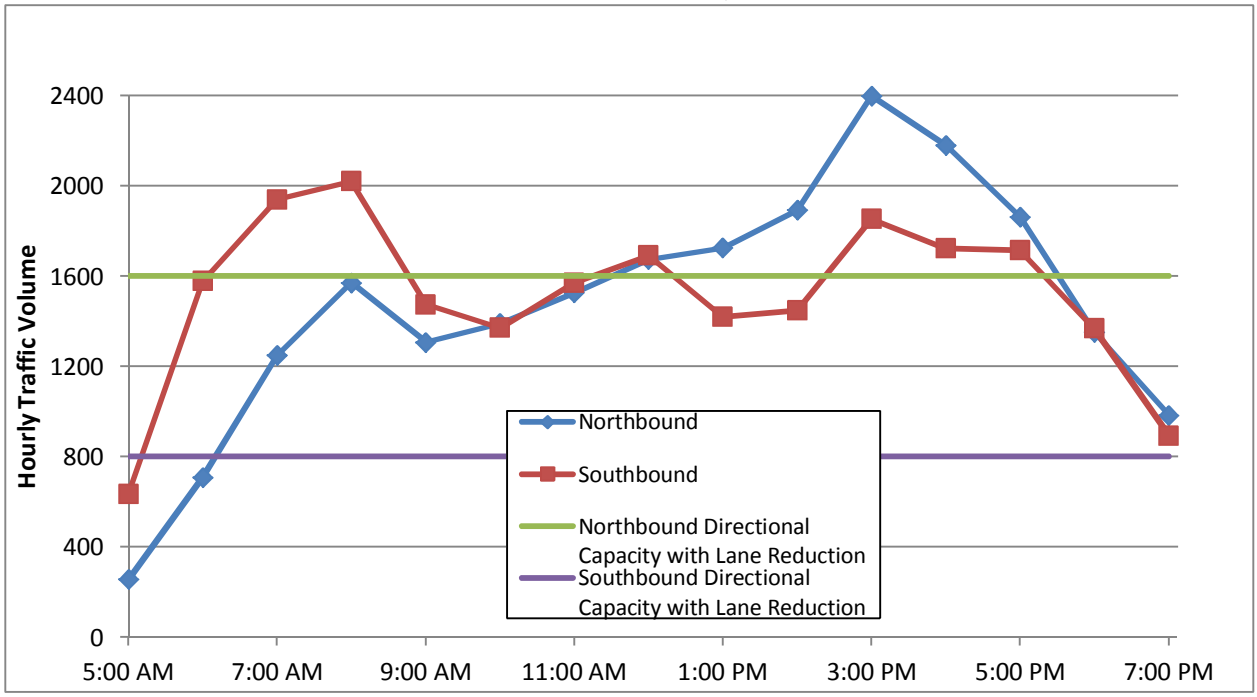
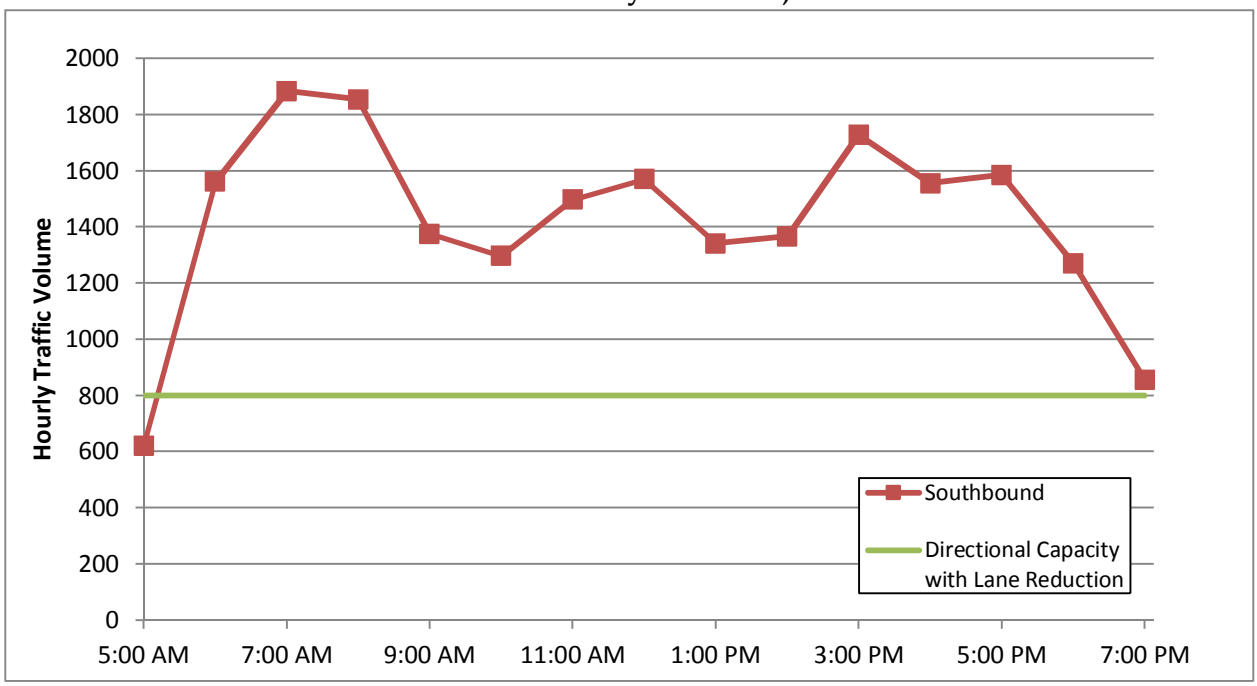


Figure 4-14: Hourly Traffic Volumes on Rosecrans Street (Between Roosevelt Street and Freeman Street)



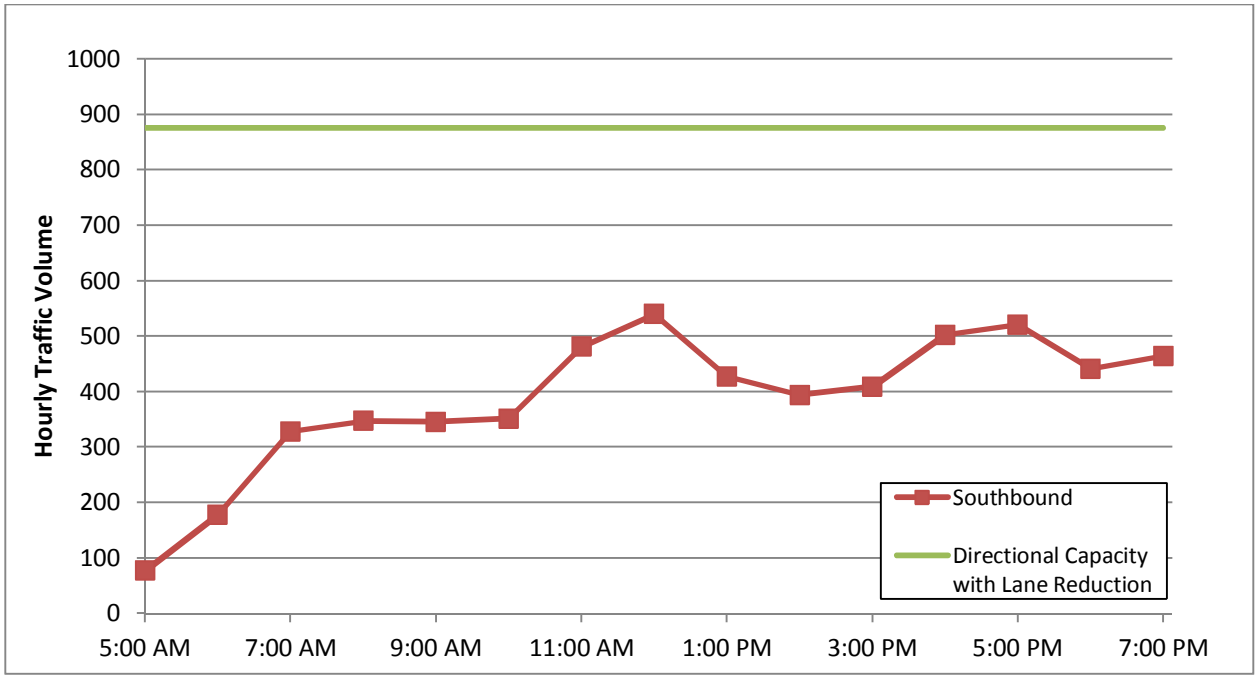
- *Rosecrans Street between Freeman Street and Lytton Street (Figures C-31 through C-34):* Reduction in capacity for the southbound direction from two lanes to one lane. Traffic volumes for this segment are shown in **Figure 4-15**. As shown in the figure, one travel lane is not sufficient to handle the existing volumes on southbound Rosecrans Street. Congestion and queuing will be experienced on Rosecrans Street. It is likely that some traffic will detour to Locust Street or through Liberty Station on Truxtun Road. Cut-through traffic on Locust Street could result in a temporary impact to the residential neighborhood. In order to reduce the magnitude of effect, it is recommended to avoid lane closures between 6:00 a.m. and 9:00 a.m. and between 3:00 p.m. and 6:00 p.m.

Figure 4-15: Hourly Traffic Volumes on Southbound Rosecrans Street (Between Freeman Street and Lytton Street)



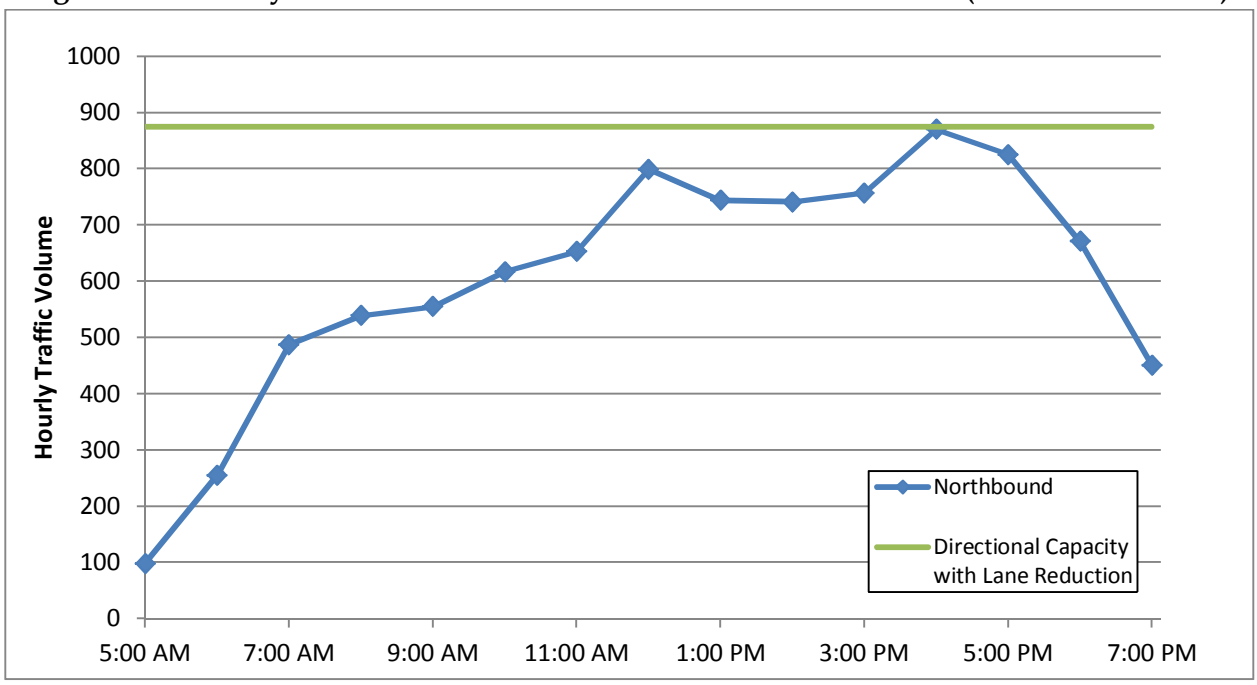
- *Rosecrans Street between Hancock Street and Moore Street (Figure C-36)*: Reduction in capacity for the southbound direction from two lanes to one lane. Traffic volumes for an adjacent segment are shown in **Figure 4-16**. As shown in the figure, one travel lane is sufficient to handle the traffic volumes experienced on this segment. No congestion impact resulting from the lane closure is anticipated. Traffic volumes do not necessitate any limitations on the hours of construction.

Figure 4-16: Hourly Traffic Volumes on Southbound Rosecrans Street (Near Hancock Street)



- *Rosecrans Street between Moore Street and Jefferson Street (Figure C-37)*: Reduction in capacity for the northbound direction from two lanes to one lane. Traffic volumes for an adjacent segment are shown in **Figure 4-17** below. As shown in the figure, one travel lane is sufficient to handle the traffic volumes experienced on this segment. No congestion impact resulting from the lane closure is anticipated. Traffic volumes do not necessitate any limitations on the hours of construction.

Figure 4-17: Hourly Traffic Volumes on Northbound Rosecrans Street (Near Moore Street)



Other Intersection Modifications associated with Trenchless Construction

- *Scott Street at North Harbor Drive (Figure C-15):* Construction of the trenchless pit along Scott Street will result in closure of southbound Scott Street north of North Harbor Drive. The Scott Street southbound receiving lanes south of North Harbor Drive will be reduced from two lanes to one lane. These effects are not anticipated to increase congestion at the intersection.

- *Rosecrans Street at Nimitz Boulevard (Figure C-18):* Construction of the trenchless pit along Rosecrans Street will result in the closure of one or both of the two southbound through lanes. If both lanes need to be closed, the southbound left-turn lane will serve as a shared left-turn/through/right-turn lane. Alternatively, the median will be removed between Macaulay Street and Keats Street and southbound through/right-turn and left-turn lanes will be provided. In either scenario, the reduction in southbound approach lanes will result in a temporary increase in congestion at the intersection. The effects of this closure or reduction in capacity are further discussed in the *Southbound Rosecrans Street between Nimitz Boulevard and Keats Street* section earlier in this section.

- *Rosecrans Street at Lytton Street (Figure C-34):* Construction of the trenchless pit along Rosecrans Street will result in the closure of both southbound through lanes. One of the two southbound left-turn lanes will be converted to a southbound through lane. It is anticipated that the reduction in lanes will result in a temporary increase in congestion at the intersection.

- *Kurtz Street at Camino del Rio (Figure C-35):* Construction of trenchless construction pit on east leg of Kurtz Street will restrict access to the northern receiving lane along Kurtz Street. By making the pit a receiving pit for trenchless construction, access to the southern receiving lane would remain feasible. Reducing Kurtz Street to one receiving lane would not significantly decrease capacity or require detours.

- *Pacific Highway at Taylor Street/Rosecrans Street (Figures C-37 through C-39)*: Construction of the trenchless construction pits on the Rosecrans Street and northern Pacific Highway legs of the intersection will reduce intersection capacity. Lane closures include the Rosecrans Street right-turn lane bus-only lane and the Pacific Highway southbound left-turn lane and one northbound receiving lane. Rosecrans Street right-turn and bus traffic will shift to the existing through lanes. Southbound Pacific Highway left-turn traffic will be shifted to the existing inside southbound through lane. The number of northbound through lanes will be reduced to one. It is anticipated that the reduction in approach lanes will result in a temporary increase in congestion at the Pacific Highway/Rosecrans Street/Taylor Street intersection.

Modifications to Parking and Bicycle Facilities

The new pipeline is generally being placed beneath parking, bicycle and travel lanes within the roadway. Where parking and bicycle lanes are located above the location of the new pipeline, those facilities will be impacted during construction. Where the pipeline is being located beneath vehicle travel lanes, the roadway cross-section is being modified to maintain vehicle circulation and minimize congestion to the extent feasible. Some of these modifications have a secondary impact on on-street parking and bicycle facilities. On-street parking will be

temporarily reduced in the areas undergoing construction. On-street bicycle facilities will be preserved where feasible, but in some cases will be combined with vehicle traffic lanes and have appropriate warning and guidance signs posted.

Locations where on-street parking will be reduced during construction include:

- Rosecrans Street from Naval Base Point Loma to Talbot Street (northbound and southbound directions);
- Scott Street from Talbot Street to Shelter Island Drive (southbound direction);
- Scott Street from Upshur Street to Cañon Street (northbound direction);
- Scott Street from North Harbor Drive to Keats Street (southbound direction);
- Keats Street from Scott Street to Rosecrans Street (northbound and southbound directions);
- Kurtz Street from Camino del Rio to Rosecrans Street (north side of street); and
- Pacific Highway from Rosecrans Street to San Diego River Bridge (southbound direction).

To minimize the effect the construction of the pipeline will have to on-street parking, the following special conservation measures should be considered:

SCM 10. Notify surrounding land uses of upcoming loss of on-street parking prior to beginning construction.

Locations where bicycle facilities will be modified during construction, and the proposed modification, are listed below:

- Rosecrans Street from Naval Base Point Loma to Talbot Street (southbound direction): Remove Class II bike lane and post share the road signs;
- Scott Street from North Harbor Drive to Keats Street (southbound direction): Close roadway, precluding Class III bike route;
- Rosecrans Street from Poe Street to Sterne Street (southbound direction): Remove Class II bike lane and post share the road signs;
- Rosecrans Street from Sterne Street to Kingsley Street (southbound direction): Shift Class II bike lane to east side of construction area;
- Rosecrans Street southbound approach to Lytton Street: Remove bike slot and post share the road signs;
- Pacific Highway from Rosecrans Street to I-8 Overpass (southbound direction): Remove Class II bike lane and post share the road signs;

- Pacific Highway from I-8 Overpass to San Diego River Bridge (southbound direction): Shift Class II bike lane to be adjacent to curb; and

- Pacific Highway along San Diego River Bridge (partially in northbound direction, partially in southbound direction): Shift Class II bike lane to provide construction area.

To minimize the effect the construction of the pipeline will have to bicycle facilities, the following special conservation measures should be considered:

SCM 11. Provide guidance for bicyclists to maneuver around the construction zone through use of traffic control or detour routes.

4.1.3 Modifications to Transit Facilities

MTS operates five bus routes that travel along the project alignment corridor and one bus route that travels across the project alignment corridor. The project will limit access to existing bus stops or, in limited cases, require re-routing of buses around temporarily closed roadways. The following list summarizes effects on bus routes associated with the project:

- Route 84: Access to seven bus stops along northbound Rosecrans Street between Naval Base Point Loma and Talbot Street will be limited during construction. Note that only one bus stop would be inaccessible at any one time. The route makes a loop on Rosecrans Street, Shelter Island Drive, Scott Street and Cañon Street. Movements between Shelter Island Drive and Scott Street and Scott Street and Cañon Street will be limited during construction. Alternative routing will be required.

- Route 28: Access to eight bus stops along southbound Rosecrans Street between Keats Street and Lytton Street and one bus stop along southbound Rosecrans Street between Hancock Street and Kurtz Street will be limited during construction. Note that only one bus stop would be inaccessible at any one time. Closures of southbound Rosecrans Street between Keats Street and Nimitz Boulevard and Kurtz Street and Hancock Street would require temporary alternative re-routing during construction activities at each of those locations.

- Routes 8, 9, and 35: Access to one bus stop along southbound Rosecrans Street between Hancock Street and Kurtz Street will be precluded during construction of that segment. Additionally, temporary closure of that segment will require a modification to the bus route alignment.

In addition, the project will require closure of the bus only lane on northbound Rosecrans Street to Taylor Street and the Old Town Transit Center during construction. The movement will still be possible, but will be shared with mixed vehicle traffic making the through and right-turn movement at that intersection. This will result in longer travel times for the bus routes using that movement (Routes 8, 9, 28, 35) during construction.

To minimize the effect the construction of the pipeline will have to transit facilities, the following special conservation measures should be considered:

SCM 12. Coordinate with MTS prior to construction to identify changes to bus stops or bus routes.

SCM 13. Provide public notification of changes to bus stops or bus routes prior to construction.

4.1.4 Excavation Moratorium

The City of San Diego implements a moratorium for roadways that have been recently overlaid or slurry sealed. The moratorium does not allow for any excavation within the established area for the duration of the moratorium unless a waiver is obtained. For streets that have been overlaid, the moratorium period is five years. For streets that have been slurry sealed, the moratorium is three years.

Streets currently under moratorium include:

- Rosecrans Street between Kellogg Street and Lawrence Street (ends 3/22/15)
- Rosecrans Street between Lawrence Street and Nichols Street (ends 5/22/15)
- Scott Street between Talbot Street and North Harbor Drive (ends 7/20/16)
- Rosecrans Street between Newell Street and Oliphant Street (end 11/15/16)
- Rosecrans Street between Curtis Street and Dumas Street (ends 9/7/15)
- Rosecrans Street between Elliott Street and Homer Street (ends 5/24/15)
- Rosecrans Street between Homer Street and Lytton Street (ends 5/17/15)
- Kurtz Street between Rosecrans Street and Camino del Rio West (ends 2/15/17)
- Rosecrans Street between Jefferson Street and Pacific Highway (ends 2/15/17)
- Pacific Highway between Rosecrans Street and Friars Road (ends 6/13/17)

Some of these moratoriums are anticipated to expire before construction is anticipated to begin. However, new moratoriums may be in place by the time of construction. Therefore, before construction begins, the contractor will need to research what moratoriums are active and obtain a moratorium waiver. Further, the contractor will be required to fully repave from curb line to curb line (or curb line to raised median) the street segments under the moratorium after completion of the project.

The repaving of the street segments under moratorium will cause additional temporary impacts to traffic flow. The contractor should work with the City of San Diego to establish work hours and traffic control plans for the necessary paving activities required by moratorium waivers.

4.1.5 Seasonal Moratorium

The City of San Diego maintains a moratorium during the summer period on roadway construction that affects travel lanes, parking, and pedestrian walkways on commercial streets adjacent to beach areas. The summer moratorium applies to the period between Memorial Day and Labor Day, with special concern given to the days preceding and following Memorial Day, Labor Day, and July 4th. Additionally, the City has a similar moratorium on roadway construction during the last week of December on commercial streets adjacent to major

shopping areas. The City has determined that the summer and holiday moratoriums will not automatically apply to this project. However, portions of the project corridor lie within areas that experience seasonal peaks in activity. The City has indicated that the project should avoid working within the following intersections during the indicated periods:

- Rosecrans Street and Nimitz Boulevard (summer period); and
- Pacific Highway and Rosecrans Street/Taylor Street (holiday period).

4.2 ALTERNATIVE 2

Alternative 2 includes the traffic impacts of Alternative 1, with the additional removal of the existing pipeline that is not currently located beneath a roadway. Since the pipeline that is beneath the roadway is not being removed, there will be no lane closures associated with pipeline excavation and removal. Therefore, the traffic control impacts of Alternative 2 are the same as Alternative 1.

4.3 ALTERNATIVE 3

Alternative 3 would have the same traffic impacts as Alternative 1 along the alignment of the replacement pipeline from NBPL to the Rosecrans Street/Taylor Street/Pacific Highway intersection. Applicable measures to avoid or minimize potential traffic impacts will be incorporated into the Traffic Control Plan for the portion of Alternative 3 located east of Pacific Highway.

4.4 NO-ACTION ALTERNATIVE

The No-Action Alternative does not result in the construction of a new pipeline. Therefore, the impacts discussed in Alternative 1 would not be present. No associated traffic impacts would be experienced without construction of the pipeline.

5 SUMMARY OF FINDINGS

5.1 COMPARISON OF ALTERNATIVES

All three project build alternatives will result in the same traffic impacts associated with the construction of the new pipeline. All three build alternatives will result in temporary traffic and circulation impacts that are not experienced in the No-Action Alternative.

5.2 SUMMARY OF IMPACTS

Construction of the Project will result in a number of temporary effects on traffic circulation and access. Effects will be very short in duration, ranging from one to a few days, and thus are not considered significant impacts. No long-term impacts will be experienced. Once construction of the project is complete, the roadway will be returned to its current configuration, with portions of the corridor being reconstructed. Further, the temporary effects will only affect small segments of the roadway at any one time as the active construction area will move through the overall project corridor. Temporary effects will be associated with restrictions to access, effects on circulation, and increases in local congestion. Effects on circulation will be limited to the extent feasible to off-peak periods.

5.2.1 Restrictions to Access

The new pipeline will be constructed along City of San Diego roadways between Naval Base Point Loma and the San Diego River. The roadways that will be impacted due to pipeline construction include Rosecrans Street, Talbot Street, Scott Street, Keats Street, Kurtz Street, and Pacific Highway. These roadways provide access to residential driveways, commercial driveways, public streets and private roads. Due to construction of the pipeline, linear swaths of roadways along the alignment will be temporarily closed during trenching and roadway re-surfacing. The new pipeline will primarily be located near the roadway curb line. Trenching construction for the pipeline and roadway resurfacing will result in the temporary closure of driveways during construction along the alignment. The following number of driveways will be temporarily closed due to the construction of the pipeline:

- 75 single-family dwelling units;
- 12 multi-family dwelling buildings; and
- 29 commercial buildings.

For most crossing roadways, alternative access is available via an adjacent street, requiring a short detour. However, for some streets, no alternative access route is available. For these roadways, which primarily serve single-family residential properties, access to the roadway may be temporary precluded during construction activities. Access to the following streets may be temporarily precluded (with the number of single-family dwelling units served by each street in parentheses):

- Nichols Street (4 single-family dwelling units);
- Qualtrough Street (3 single-family dwelling units);

- Tennyson Street (9 single-family dwelling units);
- Udall Street (10 single-family dwelling units);
- Voltaire Street (6 single-family dwelling units);
- Whittier Street (9 single-family dwelling units); and
- Yonge Street (6 single-family dwelling units).

To minimize the project effect on access, the following SCMs should be considered:

SCM 1. Notify residents and businesses of upcoming road work and preclusion of access to their driveways.

SCM 2. Minimize the duration which access is precluded by adhering to the City-standard maximum open trench length of 500 feet.

SCM 3. Construct in a manner, through phasing and construction techniques, to minimize the duration of closure of Nichols Street (east leg) and Qualtrough Street (east leg) to the extent feasible.

SCM 4. Strategically phase construction to limit the number of cross-streets that will be closed and detour traffic traveling to/from or along side streets blocked by the construction trench to the next available side street.

SCM 5. Construct in a manner, through phasing and construction techniques, to minimize the duration of closure of Tennyson Street, Udall Street, Voltaire Street, Whittier Street, and Yonge Street to the extent feasible.

5.2.2 Increased Congestion and Impacts to Circulation

As the pipeline is constructed across streets crossing the pipeline roadway, movements along those cross-streets will be detoured. For most cross-streets, that effect will be fairly minor because a short detour route is readily available and traffic volumes on both the cross-street and the detour route are low. The provision of a grid street network through most of the area of the pipeline construction serves to limit congestion and circulation impacts.

For a few locations, particularly where one direction of the roadway that the pipeline runs along is impacted, or where higher-volume roadways that cross the pipeline are impacted, the impacts associated with the detour will be more severe, although will be only temporary. At additional locations, while a direction of travel will not be closed, the capacity of the roadway will be reduced during construction. This will result in congestion along the roadway and may result in some detours through local streets. This may increase traffic delay and cause queuing. Locations where such temporary impacts may be observed include:

- Closure of southbound Rosecrans Street between Nimitz Boulevard and Keats Street: Closure of this segment may be required during construction and use of the trenchless construction pits and during roadway resurfacing. Traffic volumes would be detoured to Nimitz Boulevard and North Harbor Drive if closure occurs. It is expected that a detour would result in temporary impacts along the detour route roadways and at the Nimitz Boulevard/Rosecrans Street and Rosecrans Street/North Harbor Drive

intersections. The detour route is relatively lengthy and shorter cut-through routes through neighborhoods are available. By posting a signed detour route along major streets, cut-through traffic can be reduced, but it is anticipated that cut-through traffic along Scott Street, Locust Street, Keats Street, Jarvis Street, and Ingelow Street may cause a temporary impact to the residential streets. It is recommended to not begin construction until after 1 p.m. in order to reduce the magnitude of effect, except for trenchless construction activity which requires 24-hour lane closure. The need for a detour could be avoided by removing the median on Rosecrans Street during pipeline construction and then replacing it in kind.

- Closure of southbound Rosecrans Street between Hancock Street and Kurtz Street: Traffic will be detoured along Hancock Street to Camino del Rio. Traffic volumes will increase on Hancock Street to Camino del Rio and may result in increased congestion at the intersections of Hancock Street/Camino del Rio and Kurtz Street/Camino del Rio. In order to reduce the magnitude of effect, it is recommended to avoid lane or road closures between 11:00 a.m. and 1:00 p.m.

- Rosecrans Street between Macaulay Street and Sterne Street: Reduction in capacity for the southbound direction from two lanes to one lane will result in congestion and queuing on Rosecrans Street. It is likely that some traffic will detour to Locust Street or through Liberty Station to North Harbor Drive. Cut-through traffic on Locust Street could result in a temporary impact to the residential neighborhood. While traffic volumes are high throughout the day, the magnitude of effects of the capacity reduction would be somewhat less if construction were to be limited to between the hours of 9:00 a.m. and 3:00 p.m.

- Rosecrans Street between Sterne Street and Freeman Street: During trenching, reduction in capacity in the southbound direction from two lanes to one lane is proposed. During roadway resurfacing, reduction in capacity for the southbound direction from two lanes to one lane and for the northbound direction from three lanes to two is proposed. One lane is not sufficient to handle the existing volumes on southbound Rosecrans Street. During roadway resurfacing, two lanes will be sufficient to handle the existing volumes on northbound Rosecrans Street, except for during the afternoon peak periods. Congestion and queuing will be experienced on Rosecrans Street. It is likely that some traffic will detour to Truxtun Road through Liberty Station. Cut-through traffic on Truxtun Road and associated turning movements at the Rosecrans Street/Laning Road, Rosecrans Street/Farragut Road, Rosecrans Street/Womble Road, Rosecrans Street/Roosevelt Road intersections could result in congestion. Construction is recommended to occur between 9:00 a.m. and 3:00 p.m. to limit the magnitude of effect. Even with these time restrictions, the roadway will be substantially over capacity and congestion and cut-through traffic will occur during the temporary lane reduction period.

- Rosecrans Street between Freeman Street and Lytton Street: Reduction in capacity for the southbound direction from two lanes to one lane will result in congestion and queuing on Rosecrans Street. It is likely that some traffic will detour to Locust Street or through Liberty Station on Truxtun Road. Cut-through traffic on Locust Street could result in a temporary impact to the residential neighborhood. In order to reduce the

magnitude of effect, it is recommended to avoid lane closures between 6:00 a.m. and 9:00 a.m. and between 3:00 p.m. and 6:00 p.m., except for trenchless construction activity which requires 24-hour lane closure.

- Rosecrans Street at Nimitz Boulevard: Construction of the trenchless pit along Rosecrans Street will result in the closure of one or both of the two southbound through lanes. If both lanes need to be closed, the southbound left-turn lane will serve as a shared left-turn/through/right-turn lane. Alternatively, the median will be removed between Macaulay Street and Keats Street and southbound through/right-turn and left-turn lanes will be provided. In either scenario, the reduction in southbound approach lanes will result in a temporary increase in congestion at the intersection.

- Rosecrans Street at Lytton Street: Construction of the trenchless pit along Rosecrans Street will result in the closure of both southbound approach lanes. One of the two southbound left-turn lanes will be converted to a southbound through lane. It is anticipated that the reduction in approach lanes will result in a temporary increase in congestion at the intersection.

- Pacific Highway at Taylor Street/Rosecrans Street: Construction of the trenchless construction pits on the Rosecrans Street and northern Pacific Highway legs of the intersection will reduce intersection capacity. Lane closures include the Rosecrans Street right-turn lane bus-only lane and the Pacific Highway southbound left-turn lane and one northbound receiving lane. Rosecrans Street right-turn and bus traffic will shift to the existing through lanes. Southbound Pacific Highway left-turn traffic will be shifted to the existing inside southbound through lane. The number of northbound through lanes will be reduced to one. It is anticipated that the reduction in approach lanes will result in a temporary increase in congestion at the Pacific Highway/Rosecrans Street/Taylor Street intersection.

To minimize the project effect on circulation and congestion, the following SCMs should be considered:

SCM 6. Through the use of traffic control, modify existing roadway geometrics to best maintain vehicular and bicycle access and provide capacity during the construction period within the available roadway right-of-way.

SCM 7. For roadways that will experience congestion due to reduced capacity during construction, limit the hours of construction (and corresponding effects on capacity) to avoid peak periods of traffic on that roadway.

SCM 8. Where the project crosses regionally significant, high volume roadways, use trenchless construction techniques to reduce or eliminate effects to the crossing roadway.

SCM 9. For locations with temporary roadway closures or limitations on allowed turning movements during construction, sign detour routes to direct detoured traffic to arterial or collector streets in order to discourage cut-through traffic on residential streets.

5.2.3 Modifications to Parking and Bicycle Facilities

The new pipeline is generally being placed beneath parking, bicycle and travel lanes within the roadway. Where parking and bicycle lanes are located above the location of the new pipeline, those facilities will be impacted during construction. Where the pipeline is being located beneath vehicle travel lanes, the roadway cross-section is being modified to maintain vehicle circulation and minimize congestion to the extent feasible. Some of these modifications have a secondary impact on on-street parking and bicycle facilities. On-street parking will be temporarily reduced in the areas undergoing construction. On-street bicycle facilities will be preserved where feasible, but in some cases will be combined with vehicle traffic lanes and warning and guidance signs posted. On-street dedicated bicycle lanes will be temporarily impacted at the following locations:

- Rosecrans Street from Naval Base Point Loma to Talbot Street (southbound direction): Remove Class II bike lane and post share the road signs;
- Scott Street from North Harbor Drive to Keats Street (southbound direction): Close roadway, precluding Class III bike route;
- Rosecrans Street from Poe Street to Sterne Street (southbound direction): Remove Class II bike lane and post share the road signs;
- Rosecrans Street southbound approach to Lytton Street: Remove bike slot and post share the road signs;
- Rosecrans Street from Sterne Street to Lytton Street (southbound direction): Shift Class II bike lane to east side of construction area; and
- Pacific Highway from Rosecrans Street to I-8 Overpass (southbound direction): Remove Class II bike lane and post share the road signs.

To minimize the project effect on parking and bicycle facilities, the following SCMs should be considered:

SCM 10. Notify surrounding land uses of upcoming loss of on-street parking prior to beginning construction.

SCM 11. Provide guidance for bicyclists to maneuver around the construction zone through use of traffic control or detour routes.

5.2.4 Modifications to Transit Alignment and Facilities

MTS operates five bus routes that travel along the project alignment corridor and one bus route that travels across the project alignment corridor. The project will limit access to existing bus stops or, in limited cases, require re-routing of buses around temporarily closed roadways.

In addition, the project will require closure of the bus only lane on northbound Rosecrans Street to Taylor Street and the Old Town Transit Center during construction. The movement will still be possible, but will be shared with mixed vehicle traffic making the through and right-turn movement at that intersection. This will result in longer travel times for the bus routes using that movement (Routes 8, 9, 28, 35) during construction.

To minimize the project effect on transit alignment and facilities, the following SCMs should be considered:

SCM 12. Coordinate with MTS prior to construction to identify changes to bus stops or bus routes.

SCM 13. Provide public notification of changes to bus stops or bus routes prior to construction.

5.2.5 Excavation Moratoriums

The repaving of the street segments under moratorium at the time of construction will cause additional temporary impacts to traffic flow. The contractor should work with the City of San Diego to establish work hours and traffic control plans for the necessary paving activities required by moratorium waivers.

5.2.6 Seasonal Moratorium

The City has indicated that the project should avoid working within the following intersections during the indicated periods:

- Rosecrans Street and Nimitz Boulevard (summer period); and
- Pacific Highway and Rosecrans Street/Taylor Street (holiday period).