

**State Route 75/282 Transportation Corridor Project
City of Coronado**

**FINAL
Study Outline and Methodology**

**Prepared for:
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and

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1.0 INTRODUCTION

This Study Outline and Methodology Report has been prepared to guide the development of the environmental technical studies and reports that will be prepared for the State Route 75/282 Transportation Corridor Project. Section 2.0 of this document presents a description of the proposed project and identifies the alternatives that are being considered. Sections 3.0 through 15.0 present the study issues, the process for determining the existing conditions, and the impact analysis methodology, for the following environmental topics:

- Noise and Vibration
- Air Quality
- Water Resources
- Natural Environment
- Initial Site Assessment
- Section 4(f) Evaluation
- Visual Impact Study
- Relocation Impact Statement or Report
- Community Impact Assessment
- Traffic/Circulation and Parking Study
- Cultural Resources
- Secondary and Cumulative Impacts
- Public Safety and Homeland Security

Other environmental topics that are not included in this document that will be directly incorporated into the environmental document include: construction/encroachment on state and federal lands; geology, soils and seismicity; public services and utilities; growth inducement; energy; and construction impacts.

2.0 PROJECT DESCRIPTION

The proposed project includes improvement strategies for addressing the traffic congestion encountered along State Routes 75 (SR-75) and 282 (SR-282), known as Fourth Street and Third Street in the City of Coronado, California (see Figure 1). The proposed project area is also referred to as the SR-75/282 Transportation Corridor. The SR-75/282 Transportation Corridor directly serves the largest combined military airport and aircraft carrier berthing facility on the west coast of the United States, which is located on the Naval Air Station North Island (NASNI). Currently, the City of Coronado experiences increasingly heavy traffic congestion between the San Diego-Coronado Bridge and the NASNI. These conditions are most severe during the morning (approximately 4:30 – 8:00 AM) and evening (approximately 2:30 – 6:00 PM) peak commute hours.

Current Average Daily Traffic (ADT) on Third and Fourth Streets is approximately 77,400 vehicles. The ADT is expected to increase to 104,000 by 2030. The existing traffic volumes have already exceeded the current capacity of Third and Fourth Streets. The proposed project is centered primarily along SR-75 and SR-282 in the City of Coronado (see Figure 2). SR-75 runs from Interstate 5 (I-5) across the San Diego-Coronado Bridge, and then turns south on Orange Avenue. SR-75/Orange Avenue continues southeast on Silver Strand Boulevard, eventually reconnecting with I-5. Within the City of Coronado SR-282 runs westward along Third Street from Orange Avenue to Alameda Boulevard, including the 300 block of Alameda Boulevard and eastward along Fourth Street, between Orange Avenue to the east and Alameda Boulevard to the west. Fourth Street and Third Street create a couplet, a configuration of one-way roadways handling traffic in opposite directions separated by a city block, with Third Street traffic traveling westward and Fourth Street traffic traveling eastward.

The study area extends approximately 1.6 kilometers (one mile) from the Toll Plaza on the San Diego-Coronado Bridge to NASNI. The alternatives that have been developed for the proposed project are described below.

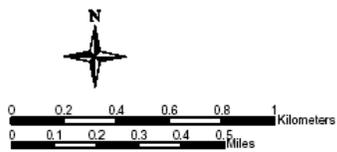
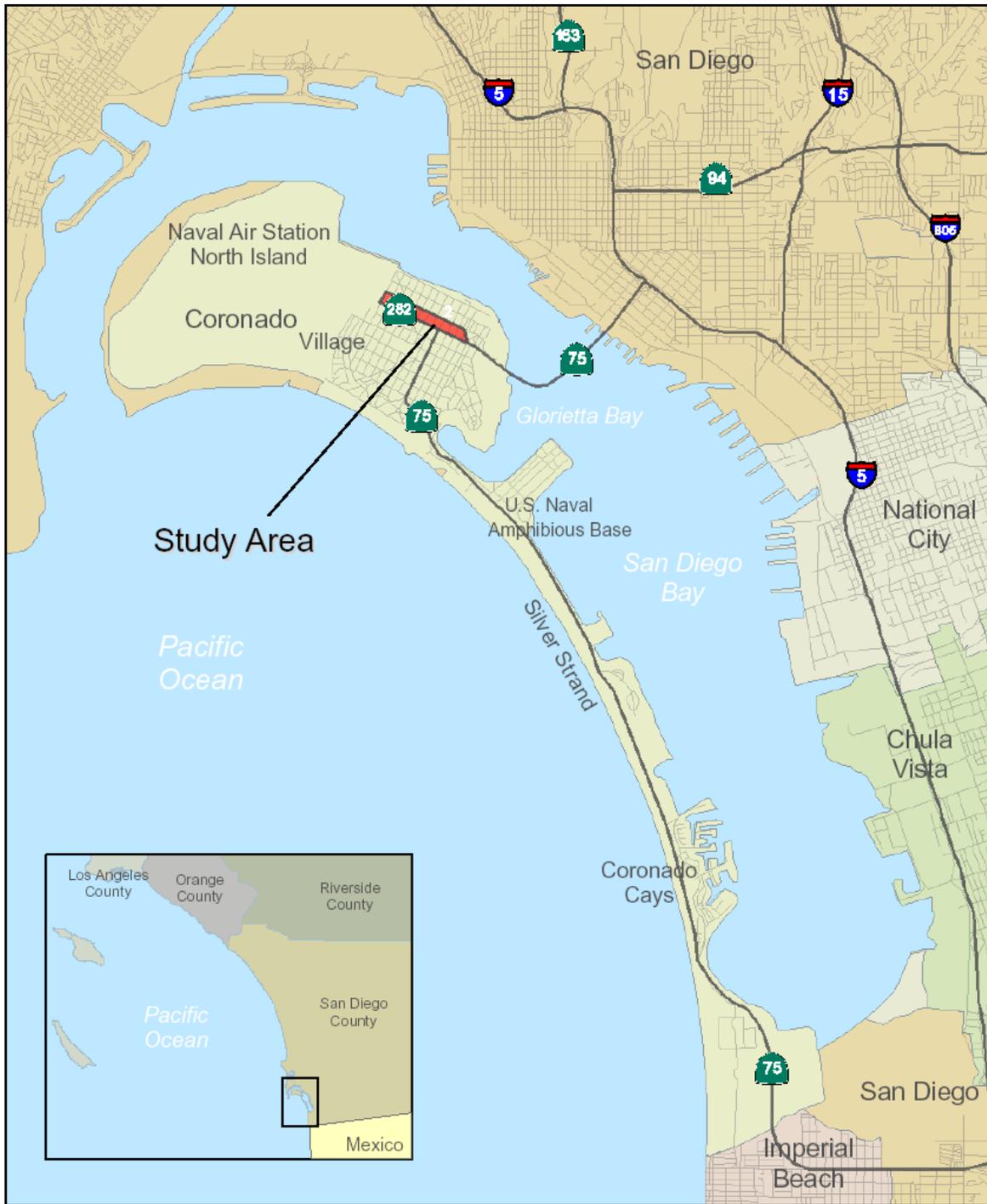
Alternative 1 - No Build Alternative

The No Build Alternative includes expected future travel characteristics and conditions in the study area. This alternative represents the future baseline against which alternative strategies for the corridor will be assessed. Under the No Build Alternative, the existing parallel one-way street configurations along Third and Fourth Streets would remain in place. As part of this alternative it is assumed that all transportation projects that are already planned and committed through the year 2030 (the planning horizon year) would be completed. These projects include but are not limited to:

- One-way street configuration along Third Street and Fourth Street, with three westbound lanes provided along Third Street, and three eastbound lanes provided along Fourth Street.
- Relocation of the NASNI Main Gate Entrance from Fourth Street to Third Street.
- Installation of traffic signals at Third Street and Alameda Boulevard, and Fourth Street and Alameda Boulevard.
- Use of emergency signs at NASNI Main Gate and Naval Amphibious Base (NAB) Main Gate to advise motorists of closures on the San Diego-Coronado Bridge.

Alternative 2 - Travel Demand Management/Transportation System Management Alternative (TDM/TSM Alternative)

The TDM/TSM Alternative consists primarily of operational investments, policies, and actions aimed at improving traffic movement and travel safety, increasing transit usage and rideshare participation, and reducing the environmental and social impacts of transportation facilities and operations in the SR-75/SR-282 Transportation Corridor. This alternative does not include major physical capacity increases to the transportation system over the No Build Alternative.



Legend

- Study Area
- Roads
- Freeways

Figure 1
Location Map

State Route 75 and State Route 282
Transportation Corridor Project

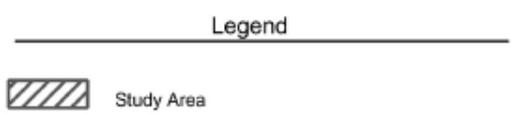
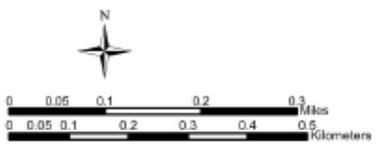
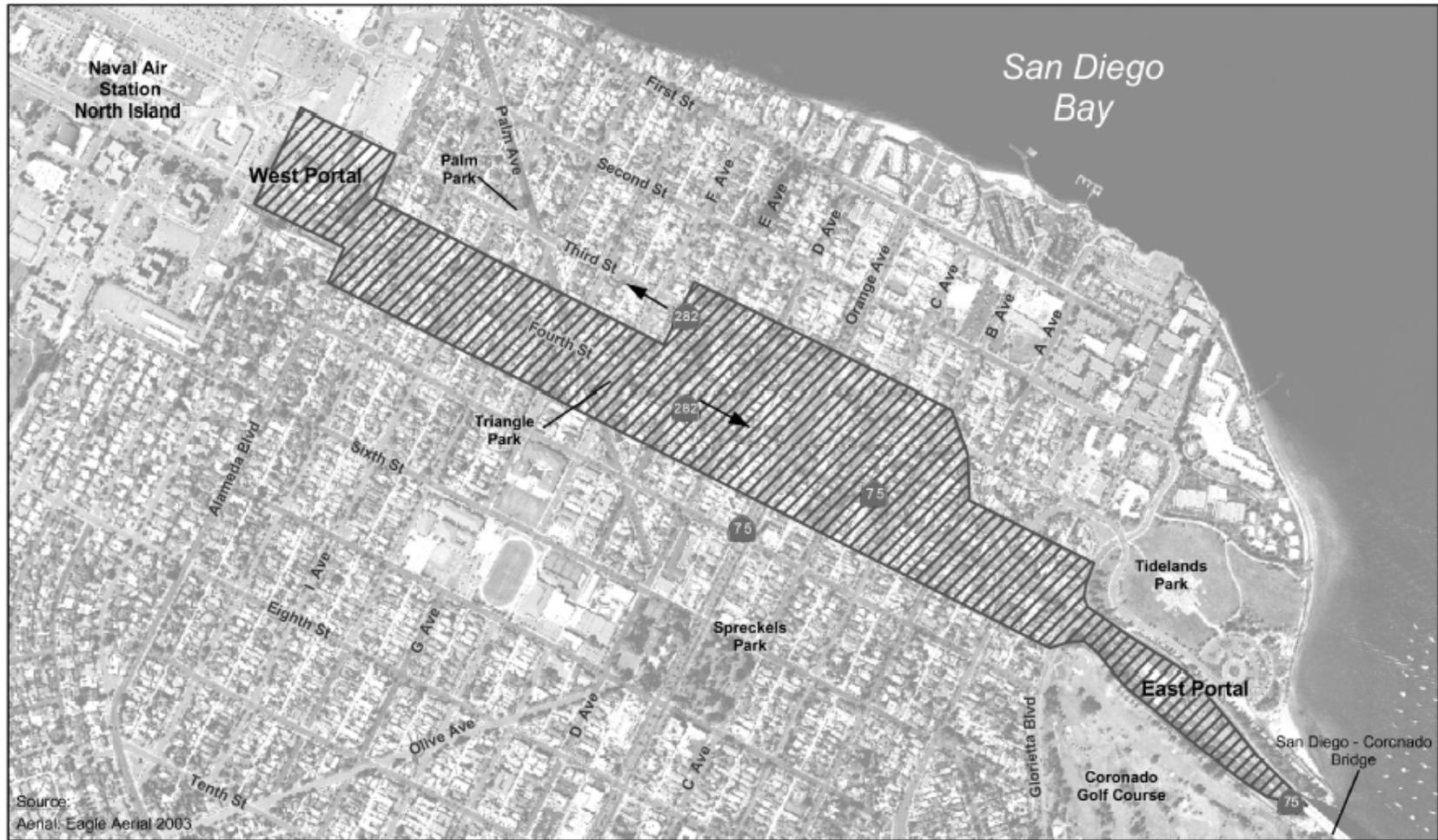


Figure 2
Project Area Map
 State Route 75 and State Route 282
 Transportation Corridor

The following TDM/TSM improvement elements included in this alternative would be incorporated, as appropriate, in all of the build alternative strategies.

- Provide preferential parking for carpoolers both on base and at Coronado's major employment centers.
- Resolve Third Street/Alameda Boulevard drainage problem (for better transit access).
- Re-establish NASNI bus stop adjacent to or on NASNI.
- Build City of Coronado entry gateway to help calm and/or meter incoming traffic.
- Increase landscaping and other streetscape improvements along Third and Fourth Streets to reduce speeds and provide a neighborhood feeling so drivers slow down.
- Build bulb-outs (curb extensions) on Third and Fourth Streets.
- Provide painted stripes on approach to toll plaza to slow speeds from freeway to residential neighborhood.
- Retain and maintain existing rumble strips (dots) on approach to toll plaza, and keep northern-most lanes at toll plaza as main lanes creating a curve and slowing traffic.
- Install traffic signals (Third/Fourth Streets at B Avenue, Fourth Street at Alameda Boulevard, Third/Fourth Streets at F Avenue).
- Provide "express" transit service between San Diego and the NASNI Main Gate.
- Assess the feasibility of a traffic signal at Fourth Street and Glorietta Boulevard or Pomona Avenue to accommodate westbound left turn lanes.

Alternative 3 – Third Street/Fourth Street Couplet with Grade Separations at Orange Avenue

This alternative would retain the existing Third Street and Fourth Street couplet. Alternative 3 would include a grade separated underpass structure for two westbound through-lanes on Third Street at Orange Avenue, and a grade separated underpass structure for two eastbound through-lanes on Fourth Street at Orange Avenue. Existing left and right turning movements to and from Orange Avenue would be maintained at-grade at the respective intersections. For drivers on Third Street, there would be two westbound left turn lanes onto southbound Orange Avenue and one westbound right turn lane onto northbound Orange Avenue. For drivers on Orange Avenue, there would be two southbound left turn lanes onto eastbound Fourth Street and one northbound left turn lane onto westbound Third Street. By separating all westbound and eastbound through traffic, additional operational capacity would be made available at these intersections to help improve traffic flows.

Alternative 4 – Two-Lane Reversible Bored Traffic Tunnel (Single Bore)

This alternative would involve the construction of a 15.2 m (50 ft) diameter single bore tunnel under Fourth Street between the east side of Glorietta Boulevard and the west side of Alameda Boulevard. The tunnel would accommodate two reversible traffic lanes (i.e., traffic would flow through the tunnel in a single direction to meet the AM peak hour demand and would then be reversed to meet the PM peak hour demand). The top of the tunnel would be at a nominal depth of 15.2 m (50 ft) below ground surface. The tunnel cross section would be designed to accommodate two 3.7 m (12 ft) wide traffic lanes with 2.4 m (8 ft) wide shoulders for emergency vehicles.

From the San Diego-Coronado Bridge, the east tunnel approach would begin just east of the existing toll plaza and would consist of a u-shaped section as the roadway descends into the tunnel portal east of Glorietta Boulevard. The tunnel configuration would be a box-shaped concrete section between the toll plaza and Glorietta Boulevard and transition to the single bored tunnel beginning east of Glorietta Boulevard and ending west of Alameda Boulevard. The bored tunnel would then transition to a box-shaped concrete section east of Alameda Boulevard until it crosses to the west side of the street. The west tunnel approach would begin just west of Alameda Boulevard and would consist of a u-shaped section as the roadway ascends out of the tunnel portal east of Alameda Boulevard. The west approach also includes a second leg that would ascend to McCain Boulevard. The conceptual design for the west approach was developed to be consistent with the Navy's future plans for developing a Third Street Gate at NASNI. The Navy proposes to develop Third Street as a one-way entrance and McCain Boulevard as a one-way exit from the base.

Alternative 5 – Two-lane Reversible Cut-and-Cover Traffic Tunnel

This alternative would involve the construction of a cut-and-cover tunnel that would accommodate two reversible traffic lanes. The tunnel would be a 14.6 meters (m) [48 feet (ft)] wide by 6.1 m (20 ft) high cast in place concrete structure. The top of the tunnel would be 8.5 m (28 ft) below ground surface. The cross section of the tunnel would be designed to accommodate two 3.7 m (12 ft) wide traffic lanes with 2.4 m (8 ft) wide shoulders for emergency vehicles. From the San Diego-Coronado Bridge, the east tunnel approach would begin just east of the existing toll plaza and would consist of a u-shaped section as the roadway descends into the tunnel portal east of Glorietta Boulevard. The tunnel configuration would be a box-shaped concrete section between the toll plaza and Glorietta Boulevard. The cut-and-cover tunnel would be under Fourth Street beginning east of Glorietta Boulevard and ending west of Alameda Boulevard. The tunnel configuration would be a box-shaped concrete section east of Alameda Boulevard until it crosses to the west side of the street. The west tunnel approach would begin just west of Alameda Boulevard and would consist of a u-shaped section as the roadway ascends out of the tunnel portal east of Alameda Boulevard. The west approach also includes a second leg that would ascend to McCain Boulevard. The conceptual design for the west approach was developed to be consistent with the Navy's future plans for developing a Third Street Gate at NASNI. The Navy proposes to develop Third Street as a one-way entrance and McCain Boulevard as a one-way exit from the base.

Alternative 6 – Twin Single-Lane Reversible Bored Traffic Tunnels (Twin Bore)

This alternative would involve the construction of two side-by-side 11 m (36.2 ft) diameter bored tunnels under Fourth Street between the east side of Glorietta Boulevard and the west side of Alameda Boulevard. A 5.2 m (17 ft) wide pillar separates the two tunnels. The top of the

tunnels is at a nominal depth of 13.4 m (44 ft) below ground surface. The tunnel cross section would be designed to accommodate a single reversible 3.7 m (12 ft) traffic lane, 2.4 m (8 ft) shoulder on the right side, a 0.6 m (2 ft) shoulder on the left side, and a 1.5 m (5 ft) pedestrian/emergency access walkway.

From the San Diego-Coronado Bridge the east tunnel approach would begin just east of the existing toll plaza and would consist of a u-shaped section as the roadway descends into the tunnel portal east of Glorietta Boulevard. The tunnel configuration would be a box-shaped concrete section between the toll plaza and Glorietta Boulevard and transition to the twin-bored tunnels beginning east of Glorietta Boulevard and ending west of Alameda Boulevard. The bored tunnel would then transition to a box-shaped concrete section east of Alameda Boulevard until it crosses to the west side of the street. The west tunnel approach would begin just west of Alameda Boulevard would consist of a u-shaped section as the roadway ascends out of the tunnel portal east of Alameda Boulevard. The west approach also includes a second leg that would ascend to McCain Boulevard. The conceptual design for the west approach was developed to be consistent with the Navy's future plans for developing a Third Street Gate at NASNI. The Navy proposes to develop Third Street as a one-way entrance and McCain Boulevard as a one-way exit from the base.

3.0 NOISE AND VIBRATION IMPACT STUDY

The Noise and Vibration Impact Study will consist of three parts: (1) traffic noise abatement; (2) operational noise under the tunnel alternatives from the ventilation fans; and (3) construction noise and vibration.

Traffic Noise

The traffic noise analysis will be conducted in accordance with Caltrans 1998 (or the most current version available when the noise analyses are initiated) Traffic Noise Analysis Protocol (TNAP) for New Highway Construction and Reconstruction Projects. The analysis will include identification of noise-sensitive land use receivers; measurement of existing noise levels at representative sensitive receivers in the study area, and modeling of future traffic noise levels.

Operational Noise

The other source of future noise levels associated with the proposed project would be the ventilation fan noise. The tunnel will require emergency ventilation fans that would be operated during normal conditions to provide continuous ventilation to the tunnel or during emergency conditions. These fans will also have to be tested periodically. Under normal operating conditions and testing conditions the fan noise would be subject to the requirements of the local or county noise ordinance. They are not subject to any noise level limits when operated during an emergency. An analysis of the potential noise impacts of ventilation fan operation will be conducted with recommendations for mitigation measures to control fan noise under these conditions.

Construction Noise and Vibration

An assessment of the potential impacts associated with construction of the project alternatives will be prepared. Potential noise and vibration impacts associated with underground

construction activities for the tunnel and trench alternatives and at-grade construction for the grade separations alternative will be included. Parsons Brinckerhoff will prepare estimates of the expected construction noise levels that would be generated for each of the alternatives and propose noise abatement measures.

EXISTING CONDITIONS

The section of SR 75 located between the west end of the Coronado Bridge and Glorietta Blvd is flanked on the north by Tidelands Park and on the south by Coronado Golf Course. From Glorietta Blvd west to Orange Ave, SR75/Fourth Street has residential area to the north and south. From Orange Ave west to Alameda Blvd, Fourth Street is now SR 282 is still flanked by residential land uses on both sides. West of Alameda Blvd, SR-282 becomes McCain Boulevard within the Naval Air Station North Island and has a combination of military use and residential areas on the south side. An aerial photograph of this area is provided on Figure 3, which shows the study area.

The sensitive receptor areas include single-family homes. The posted speed limit in this area of SR75/SR 282 is 30 mph, and there are currently four general use lanes. Third Street is one way with traffic flow from east to west, with Fourth Street being one way from west to east. The roadway is at grade with the adjacent land uses.

Noise Measurement Site Selection

The purpose for conducting noise measurements of the existing roadway noise is to establish the worst noise traffic hour as a baseline condition. This is accomplished with long term (24 hour or longer) continuous measurements. After the noisiest hour is established with long-term measurement, a number of short-term measurements are conducted during the noisiest hour, in order to determine existing worst hour traffic noise levels at other receiver location. The location of the short-term measurements will be at the first row residences, the houses that are directly adjoining the project alignment. The other purpose of the noise measurements is to calibrate the Sound 2000 noise model to the existing topography and terrain conditions for both roadway and receivers.

A total of 26 receivers have been selected for noise measurement locations. Ten of the 25 sites will be continuously measured for a minimum of 24-hours. The other 16 sites will be sampled for a minimum of 15 minutes each, and one site at Spreckels Park will be used to measure the background noise levels in an area that represents the community noise levels without influence from the traffic noise on either Third or Fourth Streets. The aerial photograph in Figure 3 shows the proposed location, permission of the homeowners will determine the final locations of the long- and short-term and background measurement sites. Descriptions of these sites are as follows:

Short-Term Measurement Sites

- SITE 1 – North of the Proposed East Portal, in Tidelands Park.
- SITE 2 – South of the Propose East Portal, in Coronado Golf Course.
- SITE 3 – On Fourth Street at the Third Street/Fourth Street merge.
- SITE 4 – On Third Street at A Avenue.
- SITE 5 – On Fourth Street at B Avenue.

- SITE 6– On Third Street at C Avenue.
- SITE 7 – On Fourth Street at C Avenue.
- SITE 8– On Third Street at Orange Avenue, across from proposed 24-hour site.
- SITE 9– On Fourth Street at Orange Avenue, across from proposed 24-hour site.
- SITE 10– On Third Street at D Avenue.
- SITE 11 – On Fourth Street at D Avenue.
- SITE 12– On Fourth Street at F Avenue (Triangle Park).
- SITE 13 – On Fourth Street at I Avenue.
- SITE 14 – On Fourth Street at J Avenue.
- SITE 15 – On Fourth Street at Alameda Blvd near Proposed West Portal.

Long-Term Measurement Sites

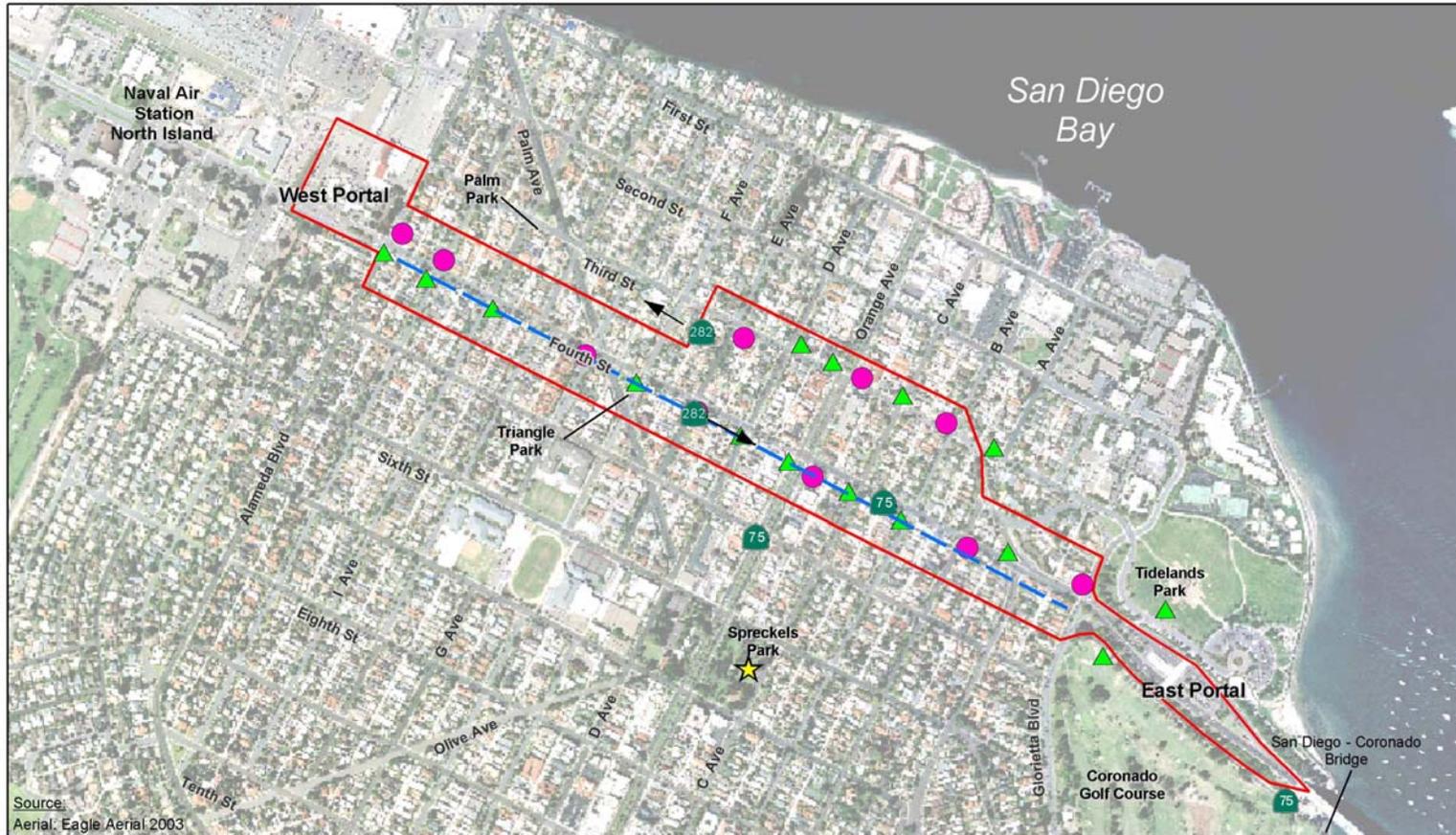
- SITE A – At the intersection of Fourth and Glorietta Blvd.
- SITE B – On Fourth Street at A Avenue.
- SITE C – On Third Street at B Avenue.
- SITE D – On Third Street at Orange Avenue.
- SITE E – On Fourth Street at Orange Avenue.
- SITE F – On Third Street at E Avenue.
- SITE G – On Fourth Street at E Avenue.
- SITE H – On Fourth Street at Palm Avenue.
- SITE I – On Fourth Street at J Avenue.
- SITE J – On Fourth Street at Alameda Blvd.

Background Measurement Site

- Spreckels Park, along C Avenue, at least 200 feet from Sixth Street.

Measurement Procedure

The measurement instruments will be field calibrated before and after each use. The calibration check that is conducted after the completion of the measurements is to verify that instruments are operating within the normal operating parameters. For each measurement, the A-weighted, slow detector response will be used. The systems will be configured to store noise level data on an interval basis (one-hour intervals for long-term sites, and 15-minute intervals for short-term sites). The data will include the average, maximum and selected exceedence levels for each interval period (L_{eq} , L_{max} , L_{10} , L_{90}).



Source:
Aerial, Eagle Aerial 2003

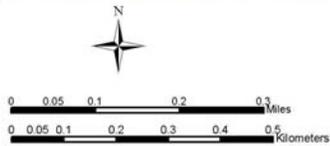


Figure 3
Proposed Noise Measurement Locations
State Route 75 and State Route 282
Transportation Corridor

The microphone position will be at least 3 meters (10 feet) from any wall or building to prevent reflections or unrepresentative shielding of the traffic noise. Measurement data will not be used if there is a possibility of any unusual noise such as dogs, pool pumps, or children that would affect the microphone. The microphone will be installed 1.5 meters (5 feet) above ground with the manufacturer's recommended windscreen. Site geometry, such as distances, elevations, and location of walls and buildings will be noted for each location.

Traffic volumes will be recorded using a video camera during the short-term measurements. The video recordings of the freeway traffic will later be reviewed and tabulated according to three vehicle types. The three vehicle types will include automobiles, medium trucks (2-axle with 6-wheels but not including daily pick-up trucks), and heavy trucks (3 or more axle vehicles). Traffic speeds will be periodically checked using a hand-held radar gun, but placed out of site from passing traffic. The field observations and measurement data will be used to calibrate the accuracy of the traffic noise model.

IMPACT METHODOLOGY

Traffic

Caltrans highway noise prediction computer model, Sound 2000, will be used for the traffic noise computations. This model is based on the highway traffic noise prediction method specified in FHWA A-RD- 77 -108. Project area topographical drawings that will be generated as part of this task order will be used to mark all roadway and barrier segments, as well as noise sensitive receptors. Roadways will be marked by direction of travel and roadway type. All these location will be digitized using a ARCGIS macro to capture the coordinates of the roadway and barrier segment points, as well as sensitive receptor coordinates.

The worst-hour traffic volumes at or above the posted speed limit from the traffic report will be used to model the worst-hour traffic noise level. Vehicle Mix (percentage of autos, medium and heavy trucks) will be based on the traffic counts. All traffic assumptions will be checked with Caltrans traffic group.

Future traffic noise will be compared to the FHWA Noise Abatement Criteria (NAC) to determine if noise abatement measures will be required. The reasonableness and feasibility of the noise abatement measures will be determined.

Operations

The operational noise levels of the ventilation fans will be projected at noise sensitive receivers within close proximity to the ventilation buildings and the tunnel portals. The projected fan noise levels will be compared to the City of Coronado Noise Ordinance and the existing ambient noise levels to determine potential impact. Mitigation measures in the form of sound attenuators for the fans and acoustical treatment for the vent shafts and portals will be recommended if needed.

Construction

Noise and vibration levels generated during construction will be estimated at noise sensitive receivers along the project alignment. Potential vibration impacts from underground tunneling and noise impacts from at grade construction activities will be determined. Mitigation measures will be provided to meet the noise level limits of the City of Coronado Noise Ordinance.

A Draft and Final Noise and Vibration Impact Report will be prepared.

4.0 AIR QUALITY REPORT

The purpose of this work plan is to outline the procedures and assumptions that are proposed for estimating the potential air quality impacts of the alternatives for the SR75/282 Transportation Corridor Project for the Draft Environmental Impact Statement/Report.

Analyses will be conducted to estimate the following:

- Pollutant levels near heavily traveled roadways and congested intersections that may be affected by the proposed alternatives under existing and future No Action conditions;
- Pollutant levels near heavily traveled roadways and congested intersections that may be affected by the proposed alternatives under future conditions with the proposed project alternatives, and the potential localized impacts associated with project-generated changes in traffic volumes or traffic patterns;
- Pollutant levels near depressed roadway sections of the proposed underpass alternative;
- Potential impacts under the proposed tunnel alternatives associated with vehicular emissions that will be generated within the tunnel and released through the tunnel's ventilation buildings;
- Potential impacts the proposed tunnel alternatives associated with vehicular emissions that will be generated within the tunnel and released through the tunnel's exit portals;
- Changes in the amounts of vehicular emissions generated in the study area under each of the proposed alternatives, and whether these changes conform to the requirements of the State Implementation Plan (SIP); and
- Potential impacts associated with the construction phase of the proposed alternatives.

EXISTING CONDITIONS

Existing air quality levels in the study area will be described based on monitored data, land use and topography, and climate. Existing major pollution sources in the study area will be identified.

Pollutants of Concern

The air pollutants that will be considered for the localized (microscale) analysis are carbon monoxide (CO), particulate matter smaller than ten microns (PM₁₀), and diesel particulate matter (DPM). CO and PM₁₀ are "criteria pollutants" that have been identified by the U.S. Environmental Protection Agency (EPA) as being of concern nationwide. Particulate matter from diesel-fueled engines has been identified as a toxic air contaminant (TAC) by the California Air Resources Board (CARB) and DPM is considered a TAC under California's air toxics program.

The air pollutants that will be considered for the area wide (mesoscale) analysis are CO, PM₁₀, and ozone precursors (i.e., nitrogen oxides [NO_x], volatile organic compounds [VOCs]).

Standards and Guidelines

The results of the microscale analysis will be added to appropriate background concentrations, and total estimated concentrations will be compared with the applicable national and state ambient air quality standards (for CO and PM₁₀), and CARB guideline values (for DPM).

Under the mesoscale analysis, changes in the amounts of vehicular emissions generated in the study area under each of the proposed alternatives will be estimated, and a determination will be made as to whether these changes conform to the requirements of the SIP.

Emission Factors

Carbon Monoxide - The latest version of California's Motor Vehicle Emission Inventory Model (EMFAC) (currently EMFAC2002 Version2.2) will be used to estimate emission factors for applicable pollutants. The Consultant will coordinate with CARB to use the latest emission files available at the start of the analysis phase. CO emission factors will be estimated using EMFAC default trip length values.

Particulate Matter - Emission factors will be estimated using EMFAC. Exhaust, brake, and tire wear emissions from moving vehicles will be estimated for all vehicle types; idle emissions, however, will be estimated only for heavy-duty diesel trucks and buses, because this information is estimated only for these vehicles (PM idle emissions from other vehicle types are considered negligible).

Emissions of fugitive dust will be estimated using the latest AP-42 equation (dated December 2003) for paved roads. This formula uses empirical data for fugitive dust and has recently been adjusted by the EPA to discount the contribution from exhaust and brake and tire wear emissions. Emissions from fugitive dust are dependent on vehicle weight and the surface silt loading. The following silt loading factors will be used:

- 0.10 g/m² for roadways with more than 5,000 vehicles per day (vpd)
- 0.4 g/m² for roadways with fewer than 5,000 vpd
- 0.015 g/m² for expressways.

An average vehicle fleet weight of 6,000 pounds will be used for most of the mobile source analyses; this weight may be changed at locations with very high or low truck percentages.

IMPACT METHODOLOGY

Mobile Source Intersection Analysis

A mobile source microscale dispersion modeling analysis will be conducted to estimate existing and future (year of opening and design year) CO, PM₁₀, and DPM levels at sensitive receptor locations near heavily congested intersections that are anticipated to be affected by the proposed project alternatives. Peak AM and PM traffic conditions will be considered.

Intersection Analysis Sites

Analysis sites will include critical heavily congested roadways, interchanges, and intersections that may be affected by the proposed project alternatives. Sites will be selected for analysis as follows:

- Traffic data (volumes, levels of service, etc.) at the major intersections affected by the proposed project will be reviewed and those that will be subject to a screening level analysis will be selected. The selection of these screening level sites will be based on criteria outlined in EPA's *Guideline for Modeling CO from Roadway Intersections* (EPA-454/R-92-005) and Caltrans' CO Protocol. Intersections that have level of service (LOS) designations of D, E or F, or will change to D, E or F as a result of the proposed project will be considered for detailed modeling;
- Each of the screened sites will be ranked by LOS, volumes, and distances to sensitive land uses to determine those locations most likely to have elevated pollutant levels. This analysis will estimate the potential of the proposed project alternatives to significantly impact air quality levels near these sites based on projected Build and No Build levels of service and surrounding land uses. Intersection locations will be ranked by LOS and overall approach volume and air quality sites will be selected for detailed CO analysis; and
- The CO analysis sites will be further screened to select sites that have a high percentage of truck traffic for detailed PM₁₀ analysis.

Receptors

The locations at which pollutant concentrations are estimated are known as "receptors." Receptors that will be considered in this analysis include those that are located on public property, sidewalks, and open spaces that are available to the general public on a more or less continuous basis. Sidewalk receptors will be located near the midpoint of the sidewalks adjacent to the roadways in accordance with EPA mobile source modeling guidelines. Ground-level receptors will be placed at a height of 6.0 feet above sidewalk elevation. The exact number of receptors considered near each analysis site will be determined based on the configuration and complexity of a site.

Vehicle Classification Data

- EMFAC vehicle classification data for San Diego County will be used to determine composite emission factors within the study area. For roadways limited to specific vehicle types (restricted use roadways), composite emissions factors will be developed based on the specific vehicle mix of each restricted use roadways.
- The split between heavy-duty gasoline vehicles (HDGVs) and heavy-duty diesel vehicles (HDDVs) will be developed using EMFAC and Caltrans' forecast for vehicle classification and registration data.

Traffic Data

Traffic data, including volumes, free-flow speeds, and intersection capacities, will be developed as described in the Traffic Section of the DEIS.

Dispersion Modeling

CO concentration predictions will be made at identified receptors and sensitive receptors for the maximum 1-hour period using the United States Environmental Protection Agency (USEPA) CAL3QHC Version 2 or CALTRAN'S California Line Source Dispersion (CALINE4) Model, as appropriate. Eight-hour concentrations will be estimated using Caltrans/EPA persistence factor guidance.

Twenty-four hour and annual PM₁₀ concentrations and annual DPM concentrations will be estimated using a modified version of the CAL3QHCR dispersion model and five years of appropriate meteorological data.

The analyses will follow EPA's Intersection Modeling Guidelines for modeling methodology and Caltrans' CO Protocol. All major roadway segments (links) within approximately 1,000 feet from each analysis site (i.e., congested intersection) will be considered. So as not to double count queued vehicles at intersections downstream of an analysis site, estimated queues will be truncated at the end of each roadway link. Estimated CO and PM₁₀ levels will be estimated at the analysis sites with and without the project alternatives using the modeling methodologies previously discussed. The results will be compared to the applicable air quality standards.

Changes in DPM concentrations between Build and future No Project conditions will be estimated to determine whether these changes are potentially significant (as defined by CARB guidelines).

Ventilation Building Analysis

CO, PM₁₀, and DPM levels will be estimated at land uses located near proposed locations of the tunnel's exhaust ventilation buildings. Potential impacts from emissions from the ventilation stacks will be analyzed using USEPA's Industrial Source Complex (ISC3). Emission rates and stack parameters will be supplied by the project tunnel ventilation engineers.

The analysis will include estimates of the direct plume impaction of these releases on nearby receptors (both ground level and elevated) and the downwash affects from the nearby buildings, as applicable.

The analysis will be conducted to determine the potential impacts of the ventilation buildings on the anticipated sensitive land uses that will be developed near the exhaust stacks as part of this project (e.g., residential buildings, parks, etc.). Ventilation stacks will be analyzed using ISC3 for direct plume and wake region impact, and SCREEN3 for the cavity impacts, where necessary.

Tunnel Portal Analysis

CO, PM₁₀, and DPM levels will also be estimated at sensitive land use locations near the proposed locations of the tunnel's exit portals. The air quality analysis of tunnel exit portals will be conducted using a methodology that Parsons Brinckerhoff developed specifically for this type of emissions source using wind tunnel test data developed for several projects, and procedures that were accepted by a number of regulatory agencies in the US and elsewhere.

The approach that will be used for the analysis of tunnel-portal releases is based on the assumption that the jet of air exiting a tunnel portal will maintain its integrity (i.e., maintains a

uniform set of conditions from which pollutants disperse) for a finite distance along the roadway after exiting the portal. This assumption is based on observations made by researchers that show that air emitted from a vehicular-tunnel portal forms a plume that is both pushed out of the tunnel by vehicles prior to their exiting the tunnel (and, if applicable, mechanical ventilation systems) and dragged out of the portal by these same vehicles as they move downstream of the portal. Also, the stream of moving cars exiting a tunnel portal creates a continuous source of momentum that maintains a jet of air with a finite length, width, and height, and the individual cars in the stream create a mechanical turbulence that mixes the air uniformly within this region.

Although there is no methodology currently available for mathematically estimating the configuration of the jet or its concentration gradients, there are several factors that will be used to estimate its size and shape. These include the speed of the vehicles passing through the tunnel, atmospheric wind speed and direction, the topography of the area immediately surrounding the tunnel portal, the type of the portal (i.e., whether it is one-way or two-way), the geometry of the portal (i.e., its height and physical configuration, and whether there will be a wall between directional roadways), and the type of ventilation used in the tunnel (i.e., natural or mechanical and, if mechanical, either longitudinal or transverse). In general, the higher the tunnel exhaust velocity (either from a naturally- or mechanically-ventilated tunnel) and the lower the atmospheric wind speed in the direction opposite the traffic flow, the longer the length of the jet. In addition, the faster the speed of the vehicles exiting the portals, the higher the tunnel exhaust velocity.

Pollutant levels at each of the receptor locations considered near each tunnel portal will be assumed to be comprised of the following components:

- Emissions exhausted out of the tunnel portals;
- Emissions from the vehicles traveling on roadways immediately downstream of the exit portals;
- Emissions (if applicable, depending on the portal and receptor locations, and the critical wind angles) from the traffic on the nearby street network; and
- Background levels appropriate for the area.

The total pollutant levels estimated at the nearby receptors from all of these sources combined will then be compared with the appropriate air quality standards. The following methodology will be used to estimate the potential impacts from each of the previously mentioned sources.

Regional Air Quality Impacts

A regional (mesoscale) emissions analysis will be completed that will compare transportation emissions (CO, nitrogen oxides [NO_x], volatile organic compounds [VOCs], and PM₁₀) generated in the study area under each alternative under the two future analysis years.

Construction Phase Impacts

Emissions generated during the project's construction phase will be estimated following guidance developed by the South Coast Air Quality Management District. It is anticipated that the estimated construction-phase emission rates will be considered to be significant, and measures that will mitigate these emission rates will be identified.

Conformity

A Project Conformity Statement will be prepared that will evaluate the project based on whether it is included in the pertinent conforming transportation plan and conforming transportation improvements program (TIP) by CARB, the project's relation to transportation control measures, and results of the microscale and mesoscale analyses. The emissions relationship between Build and No Project alternatives will be used to indicate whether the project contributes to the reduction of frequency and severity of violations of National Ambient Air Quality Standards (NAAQS).

A Draft and Final Air Quality Report will be prepared.

5.0 WATER RESOURCES

The Consultant will evaluate the potential impact on water quality caused by the introduction of pollutants into adjacent surface bodies of water, natural drainages, groundwater, the alteration of surface drainage patterns, and changes to area groundwater levels due to an increase of impermeable surfaces. Measures will be identified to comply with the stormwater/urban runoff management practices and best management practices for the control of pollutants in discharges. Appropriate permits, including the Section 401 Certification/Waiver, will be identified. A Water Quality Report will be prepared.

The following topics will be included in the water resources analysis:

- **Hydrology and Groundwater:** Regional hydrologic information and specific information about the Coronado Village area (northern part of the City of Coronado, where the proposed project is located), specific information about the grading limits (vertical and horizontal) and immediately adjacent area, and topography
- **Water Quality:** regional and local water resources and conditions
- **Floodplains:** Local floodplain information in the Coronado Village area (northern part of the City of Coronado, where the proposed project is located)

Significant issues would vary depending on the proposed project alternative. Overall, these are issues that would be pertinent under one or more project alternatives:

- Water quality standards or waste discharge requirements;
- Depletion of groundwater supplies or interference with groundwater recharge or a lowering of the local groundwater table level;
- Alteration of the existing drainage pattern of the site or area, which could result in erosion or siltation or increase the rate or amount of surface runoff which could result in flooding on- or off-site;
- Creation or contribution to runoff water which could exceed the capacity of existing or planned storm water drainage systems or provide additional sources of polluted runoff;
- Impacts on the physical, chemical, or biological qualities of water quality;

- Placement of structures which would impede or redirect flood flows within a 100-year flood hazard area;
- Exposure of people or structures to the risk of inundation by seiche, tsunami, or mudflow; and
- Fresh water lens reduction from construction dewatering allowing lower salt water to rise to tree root level, damaging trees

Project-related agency issues and concerns identified during the public scoping meeting/period will be addressed, as appropriate.

Assumptions

It is assumed that the proposed project construction will follow Best Management Practices and that the proposed project will comply with the current Caltrans, RWQCB, and local water quality standards.

EXISTING CONDITIONS

The Existing Conditions section will provide a description of the proposed project site hydrology and water quality conditions. This description will include water resources and hydrology, drainage patterns, water quality conditions, and floodplains.

The California Department of Transportation (Caltrans) has developed a recommended procedure for determining the water quality impacts of, and preparing water quality reports for, transportation projects in California. The procedure, as outlined in the document *Water Quality Technical Notes (Notes)*, dated 1990, involves the identification of aquatic resources and beneficial water uses in the project area, describing the proposed project, and estimating the impacts of the project on the aquatic environment. Specifically, water resources in the area of potential environmental impact (APEI), the area within the corridors, are identified. The identification process includes reviewing pertinent maps, water basin plans, aerial photographs, project plans, water supply papers, and other documents characterizing water resources in the APEI.

A Hydrology Report and a Preliminary Hydraulics Report will be prepared by water quality engineering staff and will be the basis for the chemical and physical sections of the Water Quality Report and the water quality and hydrology section of the environmental document. A Natural Environment Study will be prepared by the biology staff and will be the basis for the biological section of the Water Quality Report.

Information for water resources and data in the area will be obtained from city, state, and federal agencies.

Water Resources

California Regional Water Quality Board, USGS, San Diego County, City of Coronado

Floodplains

Floodplain areas in the project vicinity will be identified through Flood Insurance Rate Maps (FIRMs) for the area.

IMPACT METHODOLOGY

CONSULTANT will evaluate the potential impact on water quality caused by the introduction of pollutants into adjacent surface bodies of water, natural drainages, groundwater, the alteration of surface drainage patterns, and changes to area groundwater levels due to an increase of impermeable surfaces. Measures will be identified to comply with the stormwater/urban runoff management practices and best management practices for the control of pollutants in discharges. Appropriate permits, including the Section 401 Certification/Waiver, will be identified.

Water Quality

Background data on the physical, chemical, and biological characteristics of the aquatic environment that may be impacted is then collected from existing data sources. The environmental evaluation procedure is then completed utilizing the Impact Assessment Guidance Questionnaire, which is included in the *Notes*. In the Questionnaire, previously identified aquatic environmental information and project characteristics are used in combination to identify possible water quality, and water quality related, impacts of the project.

The predicted impacts from the proposed project are recorded with the aid of the Water Quality Report Checklist. The Checklists prepared for the proposed project alternatives comprise source information for writing the Water Quality Report and the development of conceptual mitigation recommendations.

Caltrans is an approving agency for the SR 75/282 Transportation Corridor Project and it has been agreed, in consultation with the City of Coronado, to prepare the Water Quality Report for the proposed project based on the Caltrans *Water Quality Technical Notes*.

Floodplains

The area of floodplain impacted will be assessed. If 100-year floodplains are encroached, a Location Hydraulic Study will be performed and a Letter of Map Revision will be obtained from FEMA. If a location Hydraulic Study is performed a Floodplain Encroachment Report will be prepared. It is not anticipated that the proposed project will impact floodplains.

Hydrology and Wetlands

The hydrology and drainage patterns of the project area will be assessed. Groundwater impacts will be assessed by the changes in the groundwater level, flow, and direction.

A Draft and Final Water Resources Report will be prepared.

6.0 NATURAL ENVIRONMENT

A Natural Environment Study (NES) will be prepared for the project according to Caltrans format (Caltrans Standard Environmental Reference, Volume 3, Chapter 2, Natural Environmental Study). The study will include the results of a literature review conducted prior to field studies and documentation of field survey results. Based on these findings, the study will include an

analysis of potential project impacts to biological resources and propose mitigation in consultation with the appropriate resource agencies.

EXISTING CONDITIONS

Literature Review

A literature review will be conducted prior to performing any field surveys to determine if records exist to indicate the potential occurrence of sensitive species or habitats within the vicinity of the project site. This task will include a review of the California Natural Diversity Database (CNDDDB) and the California Native Plant Society's Electronic Inventory (CNPSEI). In addition, the Consultant will request a sensitive species list for the proposed project area from the U. S. Fish and Wildlife Service (USFWS) and from the California Department of Fish and Game (CDFG). The results of this literature review will be included in the NES.

Field Surveys

A reconnaissance assessment of the biological resources will be conducted on the site to document the presence of common and sensitive biological resources and to evaluate the habitat for the potential presence of sensitive species on-site, particularly those that have been identified in the project area by the CNDDDB or CNPSEI.

Observations made during this general survey will be recorded on standardized data sheets. Plant communities on-site will be verified on an aerial photograph of the project area and qualitatively described. This description will include the types of vegetation communities and relative extent of these communities. Comprehensive lists of plant and wildlife species observed during the survey will be recorded.

The field survey will focus on determining the presence or potential presence of federal- or state-listed or otherwise sensitive plant and animal species on-site. If any sensitive species are detected on-site, the Consultant will notify the City of Coronado immediately and discuss any focused surveys for sensitive species that would be required. At that time, a separate scope and budget for such surveys would be prepared.

The field survey also will include the delineation of sensitive habitats on-site. These would include jurisdictional waters of the U.S., including wetlands, as regulated by the U. S. Army Corps of Engineers, and jurisdictional waters of the state, as regulated by the CDFG. All findings from field surveys conducted on-site, including the general biological survey and any additional surveys such as the wetland delineation or focused sensitive species surveys, will be documented in the NES.

IMPACT METHODOLOGY

Based on the results of the field surveys, the Consultant will determine potential impacts to biological resources that would result from each alternative. Mitigation measures to offset project-related impacts will be developed in consultation with the appropriate resource agencies.

Preparation of the NES does not include any activities or documentation related to endangered, or otherwise sensitive, species consultation. If required, a separate scope of work and cost estimate for such activities and documentation would be submitted to the City for approval prior to performing any work.

A Draft and Final Natural Environment Study Report will be prepared.

7.0 INITIAL SITE ASSESSMENT

EXISTING CONDITIONS

There could be a potential for hazardous materials/wastes along or adjacent to the proposed project route. A review of the Fidelity National Information Solutions database (Fidelity, 2002) identified two leaking underground storage tank (LUST) locations and one hazardous spill location within the proposed project area. One of the LUST sites is located at the Ultramar Gasoline Station at 400 Orange Avenue, on the southwest corner of Fourth Street and Orange Avenue. This site has had numerous reported releases of gasoline into the soil and groundwater. A review of the County of San Diego Hazardous Materials Establishment Listing (HMEL) identified two tank releases as having occurred at this site; however, both of these incidences are identified as being closed in the HMEL. Another LUST site is located at a former Naval Exchange gasoline station on NASNI in the vicinity of McCain Boulevard and M Avenue. A reported hazardous spill location was recorded near the corner of Fourth Street and J Avenue at 415 Fourth Street. Potential hazardous materials sites along the project alignment will be further investigated during preparation of the Initial Site Assessment, which will include, among other tasks, a review of the hazardous materials/wastes files maintained by the San Diego County Department of Environmental Health and the Regional Water Quality Control Board.

IMPACT METHODOLOGY

A hazardous materials/waste assessment will be prepared as part of the environmental evaluation based on the American Association of State Highway and Transportation Officials (AASHTO) guidance and in conformance with the Federal Highway Administration's Interim Guidance: Hazardous Waste Sites Affecting Highway Project Development (1988) and Supplemental Hazardous Waste Guidance (1997). As part of this assessment the following tasks will be performed:

Task 1 – Environmental Database Search

A database search will be conducted utilizing the most current hazardous materials/waste database information as obtained from Environmental Data Resources, Inc. (EDR). This task will consist of a review of existing federal and state environmental databases per the American Society for Testing and Materials (ASTM) standards for environmental site assessments (E1527-00). The search distance criteria for each database to be accessed are identified below. For the database review, properties identified as being located adjacent to the project will be considered to be those properties that are located within 250 feet (76 meters) of the estimated construction limits for each alternative, while properties identified as being located within the project boundary are considered to be those properties that are located within the estimated construction limits for each alternative. The search distances to be utilized for each database are as follows.

- Aboveground Storage Tanks (AST): within project boundary.
- Annual Work Plan (AWP): 1.6 kilometers (1.0-mile).

- California Regional Water Quality Board Spills, Leaks, Investigations, and Cleanups (CASLIC): 0.8-kilometer (0.5-mile).
- California Sites (CALSITES): 0.8-kilometer (0.5-mile).
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) sites: 0.8-kilometer (0.5-mile).
- California Hazardous Material Incident Report System (CHMIRS): 0.8-kilometer (0.5-mile).
- Dry Cleaners (CLEANERS): 0.4-kilometer (0.25-mile).
- Department of Toxic Substance Control Hazardous Waste and Substances Site List (CORTESE): 1.6 kilometers (1.0-mile).
- Emergency Response Notification System (ERNS): 0.4-kilometer (0.25-mile).
- Emissions Inventory Data (EMS): within project boundary.
- Facility Index System (FINDS): 0.4-kilometer (0.25-mile).
- Federal Insecticide, Fungicide and Rodenticide Act Tracking System (FTTS): within project boundary.
- Hazardous Materials Management Division Database (HMMD): within project boundary.
- Hazardous Waste Information System (HWIS): within project boundary.
- Historical Underground Storage Tanks (HIST UST): within project boundary.
- Leaking Underground Storage Tank (LUST) sites: 0.8-kilometer (0.5-mile).
- Properties Needing Further Evaluation (NFE): adjacent to project boundary.
- No Further Remedial Action Planned (NFRAP): within project boundary.
- Federal National Priorities List (NPL)/Superfund: 1.6 kilometers (1.0-mile).
- Proposition 65 (PROP65): 1.6 kilometers (1.0-mile).
- Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) facilities: 1.6 kilometers (1.0-mile).
- RCRA Corrective Action Sites (CORRACTS): 1.6 kilometers (1.0-mile).
- RCRA generator facilities:
 - Small Quantity Generators (SQG): within project boundary.
 - Large Quantity Generators (LQG): adjacent to project boundary.
 - Transporters (TRANS): 1.6 kilometers (1.0-mile).
- RCRA Violators (VIOL): 0.8-kilometer (0.5-mile).
- Spills – State: 0.4-kilometer (0.25-mile).
- State CERCLA or State Superfund (SCL): 0.8-kilometer (0.5-mile).
- State Priority List (SPL): 1.6 kilometers (1.0-mile).
- State of California Solid Waste Landfills (SWLFs); Landfill (LF): 0.8-kilometer (0.5-mile).

- Toxic Pits (TOXIC): 1.6 kilometers (1.0-mile).
- Toxic Chemical Release Inventory System (TRIS): 0.4-kilometer (0.25-mile).
- Underground Storage Tank (UST) sites: within project boundary.
- Waste Management Unit Database (WMUDS): within project boundary.

Task 2 – Review of Historical Land Use

A review of Sanborn-Perris maps, if available, and historic aerials will be reviewed to identify any past, but no longer existing, business uses in the immediate project vicinity that could have a negative impact on the proposed project in terms of hazardous materials/wastes.

Task 3 – Site Reconnaissance

Site reconnaissance of the proposed project alignment will be conducted to evaluate the properties identified under Task 1 for potential sources of hazardous waste/materials contamination that may adversely impact the proposed project area. In addition, any additional properties or businesses that show visual evidence of potentially using, storing, or handling hazardous materials/waste, which could impact the proposed project, will be recorded. The site reconnaissance will be conducted from public access areas and from within the project site, as feasible in accordance with ASTM E 1527. Information will be recorded regarding the site location, the general “housekeeping” of the site, and other observed conditions that might indicate a potential environmental concern.

In addition, the County of San Diego Department of Environmental Health Hazardous Materials Division (DEHHMD) Hazardous Materials Establishment Listing (HMEL) database will be reviewed to determine if there are any hazardous materials/waste sites or facilities, beyond those identified during the EDR database search, Sanborn-Perris and historic aerials, and site reconnaissance, that could potentially impact the proposed project.

Task 4 – Agency Records Review

Following the gathering of information under Tasks 1 through 3, the list of potential contaminant sources will be narrowed based on the type of site (e.g., database listing type), the distance from proposed project activities (see Task 1), and the information gathered during the site reconnaissance. A regulatory agency file review will then be conducted at the San Diego County Department of Environmental Health and the Regional Water Quality Control Board on the narrowed list of potential contaminant sources to develop additional site-specific information on selected properties. The agency files will be reviewed for the most recent site status information, the nature and extent of contamination, if any, as well as pertinent land uses, geologic, hydro geologic, and other information that may be used to assess potential impacts to the project.

Task 5 – Data Analysis and Report Preparation

Potential contaminant sources identified during Tasks 1 through 4 will be screened to determine their potential impact to the project based on the following criteria:

- The occurrence of a documented release, based on either public records or physical observation;

- The physical, chemical, and toxicological characteristics of suspected contaminants released from potential sources, and the media potentially affected (soil, water, and air)
- Distance from the project alignment;
- Nature of proposed design and construction activities in relation to the location and possible impact from a potential contaminant source;
- Estimated groundwater flow, direction, and depth.

These criteria will be used to eliminate potential sources that are unlikely to present an impact to the project. Potential contaminant sources not eliminated during this screening process will be identified and recommended for further evaluation.

A draft and final Initial Site Assessment will be prepared.

The presence of aerially deposited lead (ADL) contamination in soils, and the presence of lead in traffic striping, that would be impacted by construction will need to be evaluated and disposed of, if necessary, based on California Code of Regulations, Title 22, and California Health and Safety Code Section 25157.8. The results of the testing for these items will be directly incorporated into the draft EIS/EIR.

8.0. SECTION 4(f) EVALUATION

EXISTING CONDITIONS

The Department of Transportation Act of 1966 prohibits the Secretary of Transportation from approving any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance as determined by federal, state, or local officials having jurisdiction thereof, or any land from an historic site of national, state, or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use (Department of Transportation Act of 1983, 49 U.S.C. Section 21). No wildlife or waterfowl refuges have been identified within or adjacent to the proposed construction area. The closest parks to the proposed project are the Triangle Park, located on Fourth Street, and Tidelands Park, located near the San Diego-Coronado Bridge. Other recreational facilities located within the project study area include the Coronado Golf Course located to the south of SR-75 and east of Glorietta Boulevard, and the Bay Shore Bikeway located along the northern boundary of the golf course fence. The impact, if any, of the proposed project and any off-site disposal areas on Section 4(f) properties will be further analyzed during preparation of the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR).

IMPACT METHODOLOGY

If the proposed project would result in the use of a Section 4(f) resources, a Section 4(f) Evaluation will be prepared based on the guidance contained in the FHWA Section 4(f) Policy dated September 24, 1987 (revised June 7, 1989), the FHWA Technical Advisory 6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents (October

30, 1987), the Section 4(f) Checklist (revised July 1998), and the Caltrans Standard Environmental Reference, Volume 1, Chapter 20. The Section 4(f) evaluation would be directly incorporated into the Draft EIS/EIR as an appendix.

The following sections would be included in the draft Section 4(f) evaluation.

1. Proposed Action – This section would present a brief discussion of the proposed action and the project purpose and need, referenced to the appropriate portions of the EIS/EIR.
2. Section 4(f) Properties Description – This section would identify and discuss each property that would be used by the proposed project. The information that would be presented for each property would include:
 - A detailed map of the Section 4(f) property.
 - Size of the Section 4(f) property.
 - Location of the Section 4(f) property.
 - Ownership (i.e., private, city, county, State, Federal agency).
 - Type of Section 4(f) property (i.e., park, recreation, historic).
 - Available activities or function of the property.
 - Description and location of all existing and planned facilities.
 - Type of access to the property.
 - Usage of the Section 4(f) resource (i.e., approximate number of users/visitors).
 - Relationship to other similarly used lands in the vicinity.
 - Applicable clauses affecting the ownership, such as lease, easement, covenants, restrictions, or conditions, including forfeiture.
 - Unusual characteristics of the Section 4(f) property that either reduce or enhance the value of all or part of the property
 - A discussion related to Section 6(f) if the identified Section 4(f) property were to include lands or facilities developed under Section 6(f) of the Land and Water Conservation Fund Act.
3. Impacts on the Section 4(f) Properties – The impacts to each Section 4(f) property for each alternative would be discussed related to the following. If more than one Section 4(f) property were impacted then an impacts summary table would be included in the Section 4(f) evaluation.
 - Amount of land to be used
 - Facilities, functions, and/or activities affected
 - Impacts to accessibility
 - Visual impacts
 - Noise impacts
 - Vegetation impacts

- Wildlife impacts
 - Air quality impacts
 - Water quality impacts
4. Alternatives – This section would identify and summarize the alternatives addressed in the EIS/EIR, with references to the applicable sections describing these alternatives in the EIS/EIR, would present site-specific design variations which would avoid the identified Section 4(f) properties, and would either: 1. identify an alternative that would avoid all Section 4(f) properties; or 2. provide an explanation and supporting information as to why there are not any such avoidance measures that would be feasible.
 5. Measures to Minimize Harm – This section would identify possible measures to minimize the impacts to any identified Section 4(f) properties.
 6. Other Park, Recreational Facilities, Wildlife Refuges, and Historic Properties Evaluated Relative to the Requirements of Section 4(f) – This section would identify other Section 4(f) properties that are present in the project vicinity but that would not be used by the proposed project. This discussion would be provided to explain why some resources and facilities are not protected by provisions of Section 4(f) and to document that any proximity impacts to Section 4(f) resources do not result in a constructive use. All information identified in Attachment B of the Section 4(f) Checklist would be included for each of the identified properties in the section of the Section 4(f) evaluation.
 7. Coordination – This section would include a brief discussion of preliminary coordination with any public officials that have jurisdiction over any identified Section 4(f) resources. If Section 6(f) lands are identified then this section would also provide a discussion of the preliminary coordination efforts that are carried out with the National Park Service Western Regional Office.

The following information would be included in the final Section 4(f) evaluation.

1. Information from the draft Section 4(f) evaluation, with any revisions incorporated based on the comments received on the draft document.
2. Sufficient information to:
 - Conclude that there are not feasible and prudent alternatives to the use of the Section 4(f) resources
 - Conclude that the preferred alternative includes all possible planning to minimize harm to the Section 4(f) resources
 - Demonstrate that the preferred alternative is the feasible and prudent alternative with the least net harm on the Section 4(f) resources after the incorporation of any mitigation measures
3. Summary of the formal Section 4(f) coordination with the appropriate agencies.
4. Copies of the comments received on the Section 4(f) evaluation, and the responses to these comments, or a reference to these comments and applicable responses in the EIS/EIR.

5. Documentation of the National Park Service's position on any land transfer if a Section 6(f) property is involved.
6. The inclusion of the appropriate conclusion statement.

9.0 VISUAL IMPACT STUDY

The visual analysis will be conducted in accordance with FHWA's Technical Advisory T6640.8 and Visual Impact Assessment for Highway Projects guidance (FHWA HI-88-054) and Title 23 U.S.C. 109 (h), as well as any pertinent guidelines established by Caltrans. Preparation of the VIA will follow the basic guidance and format as established by FHWA's Memorandum HEV-20 (August 18, 1986) on aesthetics and visual quality and FHWA's Visual Impact Assessment for Highway Assessment for Highway Projects (DOT-FH-11-9694) as published by the American Society of Landscape Architects. The analysis will include identification and evaluation of the following;

- Viewshed. The viewshed is the surface area that is visible from a variety of viewpoints. It extends to all areas that have a view of the project site and identifies potential views that the proposed project could affect. Portions of the project site will be visible from the Coronado Bridge, surrounding residential areas, and from Orange Avenue;
- Landscape Units. A landscape unit is a subdivision of the viewshed's landscape setting. Each landscape unit is relatively homogeneous in physical and visual characteristics. Landscape units are used to evaluate physical changes within the viewshed and related visual impacts. Identified landscape units within the project site include the following residential, mixed-use, military base, and City entrance;
- Residential Landscape Unit, which includes the single-family residences and parks along Third and Fourth Streets;
- Mixed-use Landscape Unit, which includes the mix of single- and multi-family residences, businesses, churches, and other uses along Orange Avenue;
- Military Base Landscape Unit, which includes the NASNI on Alameda Boulevard;
- City Entrance Landscape Unit, which includes the residences, golf course, and park at the entry to the City of Coronado located at the base of the Coronado Bridge in Coronado;
- Viewer Groups. A viewer group is a group of persons who based on their location, activity, and length of exposure to a view might be affected by the introduction of the project into the viewshed. These viewer groups will respond differently to the same visual changes based on their visual preference. Viewer response to physical changes in the visual environment affects the perceived level of change or visual impact. Within the project study area sensitive viewer groups include residents, people using the golf course and parks adjacent to the site, people visiting Coronado as tourists and vacationers, and motorists using roadways within the project study area; and
- Visual Resources. Visual resources can include a variety of physical features including landforms, scenic vistas, historic monuments or vegetative communities. Within the study area there are historic buildings, parks, and views of the downtown San Diego Skyline, the Coronado Bridge, and the Hotel Del Coronado. Adopted preservation

policies establish the value these resources have within a given community or local area. Policy documents and land use ordinances will often identify sensitive visual resources within an area and develop policies for their preservation. Policy documents and land use ordinances that affect the proposed project area will be evaluated to determine locally significant resources within the study area.

Key Viewpoints. Key Viewpoints represent typical views within the proposed project study area and incorporate the range of visual resources within the study area, the landscape units, and the viewer groups. The Key Viewpoints that will be evaluated for the proposed project include:

- Viewpoint 1: Taken from either Third Street or Fourth Street this viewpoint will represent the residential viewer group within the residential landscape unit;
- Viewpoint 2: Taken along Alameda Boulevard this viewpoint will evaluate the effect of the west portal on the Naval Base and surrounding residential areas. Viewpoint 2 will represent the residential viewer group within the military landscape unit;
- Viewpoint 3: Taken along Orange Avenue at either Third or Fourth Street this viewpoint will evaluate the effect the grade separations will have on motorists and the mixed uses within this area. Viewpoint 3 will represent the motorist and residential viewer groups within the mixed-used landscape unit;
- Viewpoint 4: Taken from the entry area to the City of Coronado at the Coronado Bridge this viewpoint will represent the people using the golf course and parks adjacent to the site, people visiting Coronado as tourists and vacationers, and motorists within the City entrance landscape unit; and
- The evaluation of visual impacts will consider the physical changes that would occur within the view-frame of the selected key viewpoints. The physical changes are evaluated based on how they affect the existing visual environment in relation to its vividness, intactness, and unifying theme. In addition, viewer sensitivity to these physical changes will also be considered.

EXISTING CONDITIONS

The existing visual environment will be characterized using field surveys of the proposed project site and surrounding area. The field survey will be photo or video documented to record the existing visual conditions. A database search and review of the City's General Plan will be conducted to identify visual resources within the study area including historic, cultural, and physical features. A review of the City's policy documents and adopted preservation policies regarding visual resources will be conducted to determine the value local resources have within the community. Land uses and topography will also be studied to help characterize the physical environment and establish the project viewshed.

IMPACT METHODOLOGY

Existing visual quality for each key viewpoint will be determined using FHWA criteria. These criteria use three key elements for identifying a quality visual environment; vividness (the memorability of a view and its key components), intactness (visual integrity of a view and its freedom from encroaching elements), and unity (cohesiveness of a view as it relates to visual harmony). Using these key elements, a numeric rating scale from 1 (very low) to 7 (very high) will be given for each viewpoint under each element. The three numbers will be averaged to establish the visual quality rating for that key viewpoint.

Evaluation of potential visual impacts resulting from implementation of the proposed project will be based on four criteria. Those criteria include a change in visual quality; impacts to important visual resources; a change in light, glare, shade, or shadow; and a conflict with applicable visual policies.

Change in Visual Quality

Physical changes that would occur to the existing visual environment are determined by studying the project plans. The project plans include profiles and information regarding the details of the various elements of the project and provide an understanding of how the future visual environment will look after project implementation. Once these changes are understood, the visual quality of the predicted visual environment can be evaluated in the same manner as was used for the existing visual environment. The difference in quality between the existing or baseline conditions and the predicted future conditions is the visual quality change. The visual quality change is expressed as either a positive or negative and as a percentage. If the visual quality score changes by 0 to 14 percent, it is considered a low level of visual quality change. Between 15 and 29 percent, the visual quality change is considered moderate. A 30 percent or more change in visual quality is considered high.

Also considered in the evaluation of visual quality change is the impact of the change on viewer groups. Visual impact is the combination of visual quality change and viewer sensitivity. To determine the visual quality change the sensitivity of each viewer group is identified. Viewers with less sensitivity are not as responsive to change and would tend to decrease the visual quality score by one or more points. The resulting number (visual quality change +/- viewer sensitivity) is the visual quality impact score and can be expressed as either a positive (beneficial) or negative (adverse) number.

Visual Impacts to Important Visual Resources

Consideration of visual resources requires understanding the significance of the resource and its existing condition. This establishes the baseline condition of the resource and allows for evaluation of changes as they relate to the existing environment. Impacts to visual resources are based on the existing visual integrity of the resource, the visible physical changes that would occur to the resource, and the importance of the visual environment to the use of the resource. Impacts to visual resources that would substantially alter the existing visual integrity of the resource, change its physical appearance, or cause a change to the visual environment that affects the use of the resource would be considered significant.

Light, Glare, Shade, Shadow

Field observation during various times of the day and night help to establish the existing light conditions. Land uses and associated lighting needs and sources are noted. The existing light environment is the baseline that is used to compare project impacts and changes in the light environment. Elimination, reduction, or introduction of light sources, glare, shade, or shadows is considered an impact and is evaluated in relationship to existing conditions. Impacts are evaluated on how much the existing conditions change, the affect those changes have on area uses, and the sensitivity of the affected environment to the changes.

Compatibility With Visual Policies

The City General Plan, any applicable Specific Plans, and other local policy plans will be

reviewed for applicability to the proposed project. The applicable policies will be identified and evaluated in relationship to project changes. Proposed changes that would conflict with adopted policies are considered a significant impact. Impacts often relate to issues of land use and visual imaging.

A Draft and Final Visual Impact Assessment Report will be prepared. Mitigation to reduce or alleviate potential significant visual impacts will be developed and considered where appropriate. Up to three (3) visual simulations using either sketches, photo manipulation, or computer simulation will be prepared to document the existing and mitigated visual conditions.

10.0 RELOCATION IMPACT STATEMENT OR REPORT

There are two basic types of relocation impact documents: (1) Relocation impact statements for uncomplicated projects; and (2) relocation impact reports for complicated projects and/or special problems. These two documents describe the impact of right-of-way displacement of a project or project alternative. They differ, however, in terms of scope and depth of analysis. Once the anticipated level of displacements has been identified, a determination will be made, in concert with Caltrans and FHWA, as to whether a Draft Relocation Impact Statement (DRIS) or Report (DRIR) will be the appropriate relocation document, thus determining the depth of the analysis required.

Relocation Impact Documents are prepared at two intervals during the planning stage of a project: prior to the draft environmental document and prior to any route selection or acquisition activities. Both documents will, at a minimum, address the following: (1) amount and types of residential and nonresidential displacement; (2) current and anticipated availability of relocation sources; and (3) any specific relocation problems.

As noted in Caltrans Environmental Handbook Volume 4: *Community Impact Assessment*, displacement has three aspects: (1) the number and type of families and businesses to be displaced; (2) the probability that comparable decent, safe, and sanitary housing relocation sites can be found for those affected; and (3) the psychological and economic impacts associated with the relocation process. Not all social impacts associated with displacement can be offset by financial compensation or physical relocation.

EXISTING CONDITIONS

Residential and non-residential properties that would be potentially totally or partially displaced by each of the proposed project alternatives will be identified. Characteristics of the potential displacements will be identified based on available data, including number and type of displacements, building square footage, parking areas, number of employees, and owner/tenant mix. Data sources will include census data and data obtained from other sources including the City of Coronado Chamber of Commerce and field reconnaissance.

IMPACT METHODOLOGY

The Consultant will prepare a DRIS or DRIR, as appropriate, to comply with the Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970 as amended, and Chapter 10 of the Caltrans Right-of-Way Procedural Handbook, depending on the extent of relocations that would be required by the proposed project, if any. The DRIS or DRIR will

identify the characteristics of potential relocations due to the increased project right-of-way; identify and evaluate potential relocation difficulties, and impacts on the local tax base (based on tax records); and identify relocation assistance programs and policies.

The relocation information will be summarized in sufficient detail to adequately explain the relocation situation, including anticipated problems, if any, and proposed solutions. Secondary sources of information will include census data, economic reports as available, and contact with community leaders/local officials, as warranted.

If the proposed project will result in displacements, the following information regarding households and businesses would be discussed for each alternative under consideration commensurate with the level of impacts and to the extent they are likely to occur, in accordance with FHWA Technical Advisory T 6640.8A:

- An estimate of the number of households to be displaced, including family characteristics (e.g., minority, ethnic, elderly, handicapped, income level, owner/tenant status). However, where there are very few displacements, information on race, ethnicity, and income levels would not be included in the environmental document to protect the privacy of those affected.
- A discussion comparing available housing in the area with the housing needs of the displacees.
- A discussion of any affected neighborhoods, public facilities, non-profit organizations, and families having special needs which may require special relocation considerations and the measures proposed to resolve these relocation concerns.
- A discussion of the measures to be taken where the existing housing inventory is insufficient, does not meet relocation standards, or is not within the financial capability of the displacees.
- An estimate of the numbers, descriptions, types of occupancy (owner/tenant), and sizes (number of employees) of businesses to be displaced. If warranted, the discussion will identify sites available in the area to which the affected businesses may relocate; the likelihood of such relocation; and potential impacts on individual businesses caused by displacement or proximity of the proposed project if not displaced.
- A statement that (1) the acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended; and (2) relocation resources are available to all residential and business relocatees without discrimination.

A Draft and Final Relocation Impact Statement or Report will be prepared.

11.0 COMMUNITY IMPACT ASSESSMENT

The range of community impact issues varies greatly from project to project. Since this project is in an urbanized, developed area, it would not be expected to contribute in a measurable way to overall growth in the community. Project-related community/agency/interest group issues and concerns identified during the public scoping meeting/period will be addressed, as appropriate.

The Consultant will prepare a Community Impact Assessment in compliance with Caltrans Standard Environmental Reference Volume 4 (June 1997). Volume 4 of the Caltrans Standard Environmental Reference series focuses on community impact assessment as part of the overall project development process. The Community Impact Assessment Report (CIAR) will describe the relevant existing conditions, the potential impacts of the project on the community and its neighborhoods, the significance of the identified impacts, and potential mitigation measures to best avoid significant adverse impacts resulting from the project. The CIAR will include assessment of social impacts, economic impacts, land use and growth impacts, and public service impacts. Included in the CIAR will be the latest FHWA Environmental Justice Checklist.

EXISTING CONDITIONS

Data on existing conditions will be gathered, utilizing 2000 census data for the project study area (e.g., for the census tracts comprising the project study area) and for the City of Coronado as a basis of comparison, for the following CIAR topics:

Social Impacts

Housing characteristics including number of housing units, tenant/ownership distribution and single-family and multi-family distribution, particularly related to any potential displacements and the need for subsequent relocations

- Population characteristics for total population, number of families, ethnicity/race distribution, age distribution and low mobility status (elderly and/or disabled),
- Environmental justice characteristics, focusing on the potential for disproportionate impacts upon minority and low-income populations

Economic Impacts

- Business and employment data, particularly related to any potential displacements and the need for subsequent relocations
- Income data, including median household income and number of families below the poverty level

Land Use and Growth Impacts

- Applicable local plans and policies, for consistency
- Zoning and land use patterns within the project study area (including single-family residential [SFR], multifamily residential [MFR], industrial [IND], commercial [COMM], institutional [INST], and parks/recreation [PARK/REC])

Public Services Impacts (within the project study area)

- Schools and Health Systems
- Police and Fire Protection
- Accessibility and Parking
- Utilities

IMPACT METHODOLOGY

There are no standard or uniform impact criteria or thresholds for a community impact assessment, as there would be, for example, for air quality or noise impacts. The lack of rigorous quantitative methodologies for determining “significance” complicates the analysis of community impact assessment. Census data regarding population and housing characteristics are the major area within community impact assessment where useful quantitative techniques are available.

Based on the California Environmental Quality Act (CEQA), Appendix G, however, the following socioeconomic effects may normally be considered significant:

- Disrupt or adversely affect a property of cultural significance to a community or ethnic or social group;
- Induce substantial growth or concentration of population;
- Cause an increase in traffic which is substantial in relation to the existing traffic levels and capacity of the street system;
- Displace a large number of people;
- Disrupt or divide the physical arrangement of an established community;
- Conflict with established recreational, educational, religious, or scientific uses of the area; or
- Interfere with emergency response plans or emergency evacuation plans.

In particular, the following analyses will be conducted, based upon the existing data gathered, as noted above. Both construction-related and operational impacts will be discussed, as well as direct impacts and indirect impacts.

Social Impacts

- Changes in the neighborhoods or community cohesion for various social groups as a result of the proposed project, including displacements, splitting neighborhoods, isolating a portion of a neighborhood or ethnic group, or separating residents from community facilities.
- Impacts upon special groups, such as the elderly, handicapped, non-drivers, transit-dependent, low-income and minority populations, to the extent these effects can be reasonably determined. Environmental justice issues will be addressed for minority and low-income populations to determine if disproportionate impacts to these sensitive populations exist.

Economic Impacts

- Economic impacts upon displacees, including residential and business displacements.
- Disproportionate impacts upon low-income populations, as a component of the Environmental Justice impacts analysis.

Land Use and Growth Impacts

- Assessment of the consistency of the project alternatives with the comprehensive development plans adopted for the area.
- Changes induced in population distribution, population concentration, and the human use of the land, including commercial and residential development.
- Changes in travel patterns and accessibility.

Public Services Impacts

- Impacts on school districts, recreation areas, religious institutions, businesses, police and fire protection, including direct and indirect impacts resulting from displacement of households and businesses.
- Impacts upon utilities, particularly construction-related impacts.

A Draft and Final Community Impact Assessment Report will be prepared.

12.0 TRAFFIC, CIRCULATION, AND PARKING STUDY

The purpose of the Traffic, Circulation and Parking study will be to provide the technical information needed to support the evaluation of environmental impacts associated with major improvements to the SR-75/282 Corridor in the City of Coronado as well as to identify mitigation measures needed to address potential adverse traffic or parking impacts associated with the project.

EXISTING CONDITIONS

Background Information and Assumptions

The Consultant staff will coordinate closely with appropriate staff from participating agencies such as the City of Coronado, the Navy, Caltrans, and SANDAG to assemble the data necessary to accomplish this project task. Both existing and forecast traffic data will be used as the basis for establishing baseline conditions and for analyzing traffic impacts. The Consultant is currently preparing the City of Coronado City-Wide Major Traffic Study that will provide useful data regarding the existing baseline traffic conditions within the city. Through this effort, we will have already established an extensive project database consisting of items such as: previously completed traffic studies; existing roadway and intersection geometry; intersection controls; existing traffic volumes and parking; planned and programmed improvements; regional travel demand forecasts; and estimates of traffic flows on key streets and roadways within the city. This database will need to be supplemented to include information on key roadway links and intersections beyond the city's boundaries that fall within the SR-75/282 study area. We anticipate that no additional traffic counts will be necessary and that we will be able to assemble the requisite information through field reviews and from available traffic and roadway geometric data provided by Caltrans, the Navy, and SANDAG.

For purposes of developing this traffic methodology, it is assumed that up to six alternatives will be evaluated in the Draft Environmental Document and Project Report. These include a No

Build Alternative, a TSM/TDM Alternative, and up to four Build Alternatives. At least one or more of the Build Alternatives will consist of a tunnel concept with two lanes of capacity, located underneath Fourth Street, from just east of Glorietta Boulevard to just west of Alameda Boulevard.

The traffic analysis will focus on the key roadway facilities in the study area as well as those roadways and intersections that are predicted to be deficient or that are most likely to experience a noticeably adverse or beneficial effect as a result of the proposed alternatives. Based on analysis conducted for the State Route 75 and State Route 282 Corridor Major Investment Study as well as our current understanding of the proposed alternatives, the following roadway links have been identified for focused examination:

Key Roadway Links in the Study Area

- Interstate 5, State Route 15 to State Route 94
- Coronado Bridge (State Route 75), Interstate 5 to Glorietta Boulevard
- First Street, Orange Avenue to Alameda Boulevard
- Third Street, Pomona Avenue to Alameda Boulevard
- Fourth Street, Glorietta Boulevard to Alameda Boulevard
- McCain Boulevard, Alameda Boulevard to South R Avenue
- Ocean Boulevard / R H Dana Place, Orange Avenue to Gate 5
- Pomona Avenue, Third Street to Orange Avenue
- Orange Avenue/Silver Strand, First Street to Avenida des Las Arenas
- Alameda Boulevard, First Street to Ocean Boulevard
- Newly Proposed Traffic Lanes under the various Alternatives

In addition, up to 32 intersections within the study area will be analyzed. These intersections will be identified based on a preliminary examination of the existing and future travel conditions within the corridor study area and once the design concepts for the Build Alternatives have been developed. Candidate intersections include:

Preliminary List of Key Intersections

- First Street at Alameda Boulevard
- First Street at D Avenue
- First Street at Orange Avenue
- Tow Way (Third Street) at Colorado Street
- Third Street at Alameda Boulevard
- Third Street at D Avenue
- Third Street at Orange Avenue
- Third Street at Pomona Avenue
- Third Street at Glorietta Boulevard

- McCain Boulevard (Fourth Street) at South R Avenue
- McCain Boulevard (Fourth Street) at South M Avenue
- Fourth Street at Alameda Boulevard
- Fourth Street at D Avenue
- Fourth Street at Orange Avenue
- Fourth Street at Pomona Avenue
- Fourth Street at Glorietta Boulevard
- Fifth Street at D Avenue
- Fifth Street at Orange Avenue
- Sixth Street at D Avenue
- Sixth Street at Orange Avenue
- Ocean Boulevard at Alameda Boulevard
- R.H. Dana Place at Orange Avenue
- Orange Avenue at Pomona Avenue
- Pomona Avenue at Glorietta Boulevard
- SR-75 (San Diego-Coronado Bridge) Off-Ramp at National Avenue
- SR-75 (San Diego-Coronado Bridge) On-Ramp at Cesar Chavez Parkway and Logan Avenue

Existing Traffic

The Consultant will prepare traffic estimates for the existing year (2003) that will show bi-directional traffic flows for the identified roadway segments and turning movements at the key intersections. Ideally much of this information will have been developed through the City of Coronado City-Wide Major Traffic Study. Daily (ADT), a.m. peak hour, and p.m. peak hour estimates will be produced. Selection of the a.m. and p.m. peak hours for the traffic analysis will take into account the unique attributes of peak traffic flows into and out of NASNI to portray the “highest” hour for each of these periods.

We will use Trafficware Synchro to calculate level of service (LOS) at the local intersections and on arterial streets for the a.m. and p.m. peak hours. In addition, Synchro allows for the calculation of signal timing and provides information on maximum queue lengths and delay to assist in the evaluation of signalized intersection operations. Synchro is consistent with Highway Capacity Manual 2000 (HCM2000) procedures and also uses Intersection Capacity Utilization (ICU) methods.

Existing year traffic volumes and the results of the LOS analyses will be summarized in both graphical and tabular forms.

Future Traffic Conditions

The Consultant will prepare traffic estimates for the future year (2030) for the six alternatives using the travel demand forecasts produced for these alternatives. Methods and assumptions

used to develop the travel demand forecasts for this study are described in the Traffic Forecast / Modeling Report (Subtask 2.1). Traffic count data and Year 2003 traffic simulation analysis will be used to fine-tune the forecast data to portray future year traffic conditions. Year 2030 traffic estimates will be prepared to show ADT, am peak hour, and pm peak hour traffic volumes. These estimates will illustrate how traffic is anticipated to shift in response to the proposed transportation improvements under the various alternatives. Only one future year traffic scenario (Year 2030) will be developed for each of the project alternatives.

LOS calculations will be performed for the key roadways and intersections in the study area using Synchro and HCM2000 procedures. Up to 32 intersections will be analyzed. This will identify those roadways that are anticipated to operate at a poor level of service (LOS E or worse) and will also allow a side-by-side comparison of the proposed alternatives.

Future year traffic volumes and the results of the LOS analyses will be summarized in both graphical and tabular forms.

IMPACT METHODOLOGY

Traffic

The traffic impact analysis consists of comparing each of the project alternatives to the future baseline condition (No Build Alternative) in the a.m. and p.m. peak hours to identify whether or not a significant traffic impact is expected to occur as a result of the proposed project. The following criteria, drawn from the 2002 SANDAG Congestion Management Program (January 2003), will be used to determine the potential for adverse traffic impacts for those identified intersections and roadway segments that are expected to operate at LOS E or worse. [Note: within urban areas, an LOS of D or better is considered to be an acceptable LOS].

Levels of Significance

Criteria for Identifying Potential Traffic Impacts

Level of Service with Project	Allowable Change due to Project Impact				
	Freeways		Roadway Segments		Intersections
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)
LOS E or worse	0.01	1	0.02	1	2

Source: SANDAG, 2002 Congestion Management Program Update, Appendix D (January 2003)

If a potential adverse traffic impact is identified, then mitigation will be identified and proposed. Mitigation could take the form of project design refinements, capacity enhancements, changes in traffic control or signalization, intersection improvements, or implementation of access management strategies. The traffic analysis will then be rerun with the proposed mitigation measures to determine the effectiveness of the proposed measures.

Of particular concern is the potential for added traffic queuing or delays that could occur on the Coronado Bridge as a result of added travel lanes west of the bridge. The Consultant will use

HCM procedures to provide quantitative estimates of any increases in traffic delays that are predicted to occur.

In addition, we will characterize and provide a qualitative discussion of potential impacts associated with: traffic queuing and diversion to adjacent streets and neighborhoods; traffic operations at the tunnel portal approaches; traffic queuing in the tunnel at NASNI; and local access issues associated with major changes to proposed roadway geometry (e.g., access to Orange Avenue associated with new grade separations at Third Street and Fourth Street.) Short-term traffic and circulation impacts attributable to project construction activities such as road closures and elimination of local access will also be identified and discussed. Where potentially significant adverse traffic and circulation impacts are anticipated to occur, design changes, mitigation measures, and/or traffic management strategies will be explored and discussed.

Parking

The Consultant will conduct a field review to verify the amount of on street parking that currently exists on city (and, if applicable, NASNI) streets that may be affected by the proposed improvements. Based on a review of planned and committed roadway projects, the number of existing parking spaces will be adjusted in order to represent future parking conditions in the project area (e.g., No Build Alternative). The number of parking spaces that are displaced or eliminated will be tabulated for each alternative. Short-term parking impacts attributable to construction activities will also be quantified. Where parking impacts are predicted to be significant, the Consultant will identify and discuss parking replacement scenarios. Some of the alternatives may result in opportunities to provide additional on-street parking compared to the No Build condition, in which case, the number of parking spaces to be added will be included in the project parking calculations.

A Draft and Final Traffic/Circulation Report will be prepared.

13.0 CULTURAL RESOURCES

The Consultant will prepare a series of technical reports in support of the required Section 106 review, following preparation and approval of the APE map. All cultural resource documents will be completed and processed in accordance with the Programmatic Agreement [PA] among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation regarding Compliance with Section 106 of the National Historic Preservation Act, as it pertains to the Administration of the Federal-Aid Highway Program in California, which became effective on January 1, 2004. Studies will be prepared per instructions from Martin D. Rosen, Caltrans Local District Senior Environmental Planner, and in accordance with the guidance referenced below.

Area of Potential Effects (APE)

The Consultant will prepare an APE map delineating the area of potential effects. The APE map will be prepared with digital data provided by the project engineer including ortho-rectified aerial photography, project alternatives (existing and proposed right-of-way and project elements), and Coronado Assessor parcel boundaries and attached data. A draft APE will be submitted to the

CITY for review and comment and then to Caltrans Local District for review and comment. A final APE will then be prepared for Caltrans Local District concurrence and Caltrans approval.

Historic Resources Evaluation Report (HRER)

After approval of the APE by Caltrans Local District, the Consultant will prepare an HRER per Caltrans Standard Environmental Reference, Volume 2. The HRER will identify and evaluate historic archaeological and historic-era built resources. The HRER will establish the historical context of the project area and address the architectural and historical significance of individual sites and buildings within the project area. Historic research will include an examination of a variety of sources including, historic maps, aerial photographs, tax assessors records, historic photographs, and archival research from local institutions and a search of the archives at the San Diego Historical Society and San Diego Public Library Central Branch. While eligibility to the National Register of Historic Places (NRHP) is the standard for significance under Section 106, resources will also be evaluated for their potential eligibility to the California Register of Historical Resources (CRHR). Included in the HRER will be a DPR 523A evaluation form for each building or structure that will be 50 years old or older during the life of the project, i.e., from now to completion of construction. Buildings less than 30 years old can be excluded from evaluation in accordance with the new PA. Buildings 30-50 years old can be excluded from evaluation by Caltrans qualified architectural historians; only photos of the structures and date of construction data will be required in electronic format for submittal to Caltrans Sacramento. This scope assumes that no more than fifty (50) structures will need to be evaluated and that no more than three (3) will be identified as eligible for listing on the NRHP or CRHR. No subsurface investigation, or other testing or analysis, is assumed under this task. In addition, nominations for NRHP listing for identified resources that would be eligible for listing on the NRHP are not included in this scope.

Archaeological Survey Report (ASR)

After approval of the APE by Caltrans Local District, The Consultant will prepare an ASR per Caltrans Standard Environmental Reference, Volume 2. A field survey and literature review will be undertaken to identify prehistoric archaeological resources within the APE and documented in the ASR. This scope assumes no such resources will be identified and that a Negative ASR will be prepared. As such this scope does not include any recordation and/or testing or analysis of archaeological sites.

Historic Property Survey Report (HPSR)

The Consultant will prepare the umbrella document for cultural resources that includes the APE, HRER, and ASR as attachments. The HPSR will be the key document used by FHWA and the City of Coronado to fulfill the requirements of 36 CFR 800. The HPSR requests State Historic Preservation Officer (SHPO) concurrence on evaluation and effect findings. The HPSR will be prepared in accordance with Caltrans guidelines. This scope does not include the preparation of a Section 106 Finding of Effect, if required.

A Draft and Final Historic Property Survey Report (HPSR), Historical Resources Evaluation Report [HRER] and Archaeological Survey Report [ASR] will be prepared.

14.0 SECONDARY AND CUMULATIVE IMPACTS

According to the Federal Highway Administration's (FHWA) "*Position Paper on Secondary and Cumulative Impact Assessment*," and the 1978 regulations of the CEQ implementing the National Environmental Policy Act (NEPA) require that agencies evaluate the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations refer to these consequences as secondary and cumulative impacts. CEQ guidelines for implementing NEPA broadly define both secondary and cumulative impacts.

Secondary effects are those that are "caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable" (40 CFR 1508.8). Generally, these impacts are induced by the initial action. They comprise a wide variety of secondary effects, such as changes in land use, water quality, economic vitality and population density. Effects and impacts as used in these regulations are synonymous.

Cumulative effects are impacts, which result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions (40 CFR 1508.7). These impacts are less defined than secondary effects. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

As noted in the FHWA Position Paper, an examination of secondary and cumulative consequences should focus on the functional relationships of resources with larger systems. If these relationships are understood, then conclusions on a project's likely secondary and cumulative impacts to the overall system should be possible. An understanding that no relationship occurs can be just as valuable in predicting the consequences of a proposed action. As noted in the Position Paper, there are no clear-cut techniques to determine the secondary and cumulative consequences of highway project proposals.

EXISTING CONDITIONS

Planning Context

Examine links that a proposed project may have with other programmed development and area-wide resource management plans (e.g., wetlands, air quality, water quality). Such plans may indicate an area is planned to absorb specific primary, secondary, and cumulative impacts in balancing developmental needs with environmental protection. Describing a project's association with (or as an element of) these kinds of plans in an environmental document may in some cases be sufficient to describe the expected cumulative and secondary effects of the proposal.

Regional Context

- Describe regional and subregional transportation network and linkages
- Use information from: Regional Growth Management Plans for the area; RTIP; STIP; available traffic studies

- Metropolitan Planning Organizations (MPOs) and other development and resource protection agencies should be contacted early in the process.

Local Context

- Describe the local planning context
- Use information from: County/City General Plans – goals and policies; local land use designations/development types and intensities
- Reasonably foreseeable projects include both public projects (e.g., transportation, rail, bus, highway) and private projects (e.g., residential and commercial)
- In cases where an area has conducted little or no resource planning, the assessment of secondary and cumulative impacts can be much more difficult. The limited information available may mean more effort will be required to contact and coordinate with various sources having knowledge about changes occurring in the project area. Local entities, such as zoning boards, water quality control departments, and building inspection agencies could be used as invaluable sources of information.

IMPACT METHODOLOGY

Once information about the project area has been developed, it would be determined whether development changes are occurring and whether continued growth in the future is expected. The same would also apply to current and anticipated changes to environmental resources. Include information on the susceptibility of the resource base to developmental changes known to be related to highway improvements.

Identify assumptions, including:

- Development in this region is already planned, and is not considered directly induced by the proposed road. Therefore, these developments are assumed not to be secondary impacts of the proposed road. Rather, the road is being proposed to service these planned developments.
- Identify significant cumulative effects issues associated with the project and other reasonably foreseeable projects on a region basis, in terms of areas identified and potential issues:
 - Transportation/ Traffic
 - Describe approved and future projects
 - Past context
 - Multi-modal context, if applicable – bus, rail, airport, etc.
 - Air Quality - incremental effects of region air quality associated with the project and other projects in the area
 - Project Specific Growth Impacts
 - Approved development plans
 - Future development plans
 - General Plans – land uses, intensities

- Noise - incremental effects of noise associated with the project and other projects in the area
- Hazardous Waste
- Water Quality – streams, rivers, San Diego Bay, Pacific Ocean
- Visual Quality – changes in view sheds along the project alignment
- Biological Resources – Threatened and Endangered Species; Critical habitat; Habitat Conservation Plans (HCPs)
- Cultural Resources - Section 106 properties along Fourth Street
- Recreation – parklands, wildlife refuges, bike trails; Section 4(f) properties
- Floodplains
- Socioeconomics – Environmental Justice Issues
- Identify *spatial* boundaries for the cumulative effects analysis. The area to be considered should be that defined by the extent of the project’s influence on a particular resource.
 - Provide a reasonable explanation to set the boundary conditions. An acceptable general guideline for determining the area of influence as the geographic extent to which a project will affect a particular resource. The boundary conditions will vary as to size and extent depending on the particular resource (i.e., biology versus air quality).
 - Establish a series of overlapping resource spatial boundaries set at varying distances from the proposed project to indicate project’s location relative to each spatial resource boundary.
 - Spatial boundaries will vary based on the environmental resource.
 - Each spatial boundary must be large enough such that each particular resource is no longer affected.
 - Combining the information on resource and developmental change for the area with the scope of the project’s influence yields the geographical extent of potential secondary and cumulative effects of the proposal.
- Identify *temporal* boundaries.
 - Past – Establish baseline timeframe period in which environmental resources were not significantly affected. The City of Coronado has grown since 1886 and has been developed as a residential community in the last 20 years.
 - Present – Current project plus other approved projects in the area
 - Future – Usually a 20-year timeframe for transportation projects. Include projects that are “reasonably foreseeable.” Projects in RTP or STIP, or other possible projects in the region’s Growth Management Plan.
- Develop cumulative effects database
 - Gather information on resources and on projects from:
 - Federal, state and local governments – permit approvals, Capital Improvement Programs (CIPs), RTIPs, other EAs, EISs, etc.

- Local libraries
- Historical organizations/societies
- Schools/universities
- Individuals – landowners, long-time residents, resource managers
- Natural history surveys
- Identify each past, present, and reasonably foreseeable project on a suitably scaled aerial photograph or map.
- Identify natural topographic boundaries and features, existing developments, etc. on that aerial photograph or map
- Describe the Affected Environment
 - Characterize each resource, the types of stressors, responses to change, etc.
 - Define baseline condition for each environmental resource (natural and human)
- Determine the Environmental Consequences.
 - Assess the indirect impacts of the SR 75/282 Improvement Project by analyzing the planned and potential development for the area influenced by the project over the life of the facility.
 - The projected impacts in total would be an adequate estimate of the secondary and cumulative effects on environmental resources in the area.
 - Identify cause and effect relationships.
 - Determine the magnitude and significance of cumulative effects – use existing established thresholds of significance (federal, state, and local) for Noise, Traffic, Air Quality, etc.
 - Recommend or modify project alternatives to avoid, minimize or mitigate a significant impact.

15.0 PUBLIC SAFETY AND HOMELAND SECURITY

The public safety and homeland security issues discussed within this methodology included life- and property-threatening conditions that may be affected randomly by natural causes, or intentionally, by persons hostile to the United States. Public safety has historically been a concern in urban planning, hence analysis criteria are found in many different forms, including county/city planning documents and the California Environmental Quality Act (CEQA).

Conversely, prior to the terrorist acts carried out against the United States in the last four years, homeland security was regarded as somewhat of a smaller concern, thus few analysis criteria were developed. In the wake of September 11, 2001, homeland security has become a prominent issue, and new forms of analysis are being introduced. Currently, every state in the union is nearing completion of its report on homeland security analysis and countermeasures for submittal to the Office of Domestic Preparedness. These reports will be developed into one cohesive federal homeland security document.

Criteria

City of Coronado General Plan and CEQA. Public safety issues that would have the potential to arise from natural and accidental causes will be analyzed in accordance with the Public and Seismic Safety, Disaster Preparedness, Transportation, and Circulation Elements of the City of Coronado General Plan and CEQA. Although CEQA does not include a separate public safety section under its Appendix G, the provisions to support public safety are found throughout the various existing sections in Appendix G. Some public safety concerns such as flooding and fire protection will be analyzed in accordance with CEQA in other sections of the forthcoming EIS/EIR (e.g., hydrology, and public utilities and services).

Public Safety and homeland security issues that would have the potential to arise from malevolent causes will be analyzed in accordance with the following:

Resource Handbook on DOE Transportation Risk Assessment. Transportation facility radioactive release issues will be analyzed in accordance with the provisions found in the United States Department of Energy's (DOE) Resource Handbook on DOE Transportation Risk Assessment¹. Although this document's name infers that all transportation risk assessment is considered in it, the document concentrates on primarily on radioactive release situations.

SAIC Guide to Highway Vulnerability Assessment. Transportation facility explosions, fires, biological pathogen release and hazardous gas release issues will analyzed in accordance with the provisions found in the SAIC Guide to Highway Vulnerability Assessment². This document includes not only assessment criteria, but also countermeasures that may be used to mitigate such events before and after they occur.

Parsons Brinckerhoff – PB Farradyne Guide to Updating Highway Emergency Response Plans for Terrorist Incidents³. Transportation facility explosions, fires, biological pathogen release and hazardous gas release issues analysis and mitigation will be augmented with the guidelines included in this document.

The Physical Protection of Critical Infrastructures and Key Assets⁴. This document is the federal executive branch document that will provide input into the above assessment and countermeasures, and will be integrated into EIS/EIR mitigation measures.

Assumptions

It is assumed that the EIS/EIR will analyze the potential effects of the following conditions with respect to public safety and homeland security:

¹ DOE Transportation Risk Assessment Working Group Technical Sub Committee. *A Resource Handbook on DOE Transportation Risk Assessment*. National Transportation Program, U.S. Department of Energy. July 2002.

² Science Applications International Corporation (SAIC). *Contractor's Final Report: A Guide to Highway Vulnerability Assessment for Critical Asset Identification and Protection*. The American Association of State Highway and Transportation Official's Security Task Force. May 2002.

³ Parsons Brinckerhoff – PB Farradyne. *Contractors Final Report: A Guide to Updating Highway Emergency Response Plans for Terrorist Incidents*. The American Association of State Highway and Transportation Official's Security Task Force. May 2002.

⁴ The White House. *The National Strategy for the Physical Protection of Critical Infrastructures and Key Assets*. February 2003.

Entrapment. Entrapment issues analyzed will include those that may arise from in trench/tunnel vehicle collisions, intentional traffic stoppage, flooding from tsunamis or seiches, or trench/tunnel damage from a seismic event.

Explosions. Explosion issues analyzed will include those that may arise from accidental causes (vehicle accidents or fume accumulation) and intentional causes (bombs). Intentionally caused explosions will include analysis of conventional and nuclear devices.

Fires. Fire issues analyzed will include those that may arise from accidental causes. This is based on the fact that most malevolent attacks generally will be from explosive devices, not set fires (see above). Causes analyzed will include vehicle accidents, and fires from apparatus in the trench/tunnel structures (i.e. faulty electrical devices).

Hazardous Atmospheres. This analysis will be generally limited to the trench/tunnels alternatives. Causes analyzed will include: intentional releases of biological pathogens; intentional releases of hazardous gases; oxygen deprivation from tunnel ventilation failures and idling vehicles; fumes from hazardous spills; and radiation from intentional releases of radioactive materials.

It is assumed that these items will be analyzed based on available published information, and sources provided by the Client. The analysis will not include technical studies, or risk assessments beyond that which is written in the EIS/EIR sub-section of the Scope and Fee Document.

EXISTING CONDITIONS

Existing conditions will be ascertained by a field visit, aerial photograph analysis, site photograph analysis, topographic map analysis, local area map analysis, and analysis of the Public and Seismic Safety, Disaster Preparedness, Transportation, and Circulation Elements of the City of Coronado General Plan.

IMPACT METHODOLOGY

Potential impacts will be identified by their ability to cause harm to property and humans. Potential impacts will be measured by their damage potential and probability to occur. Damage potential could be vastly different in each case (i.e., damage from a localized ballistic explosion would be far less than that of a nuclear device). Probability to occur would be based on historical occurrences both in Coronado and at other locations that would be relevant to the analysis (i.e., average number of tunnel fires from vehicles as measured in a number of tunnels world-wide). Mitigation measures will be based on information found in: The Resource Handbook on DOE Transportation Risk Assessment, SAIC Guide to Highway Vulnerability Assessment, Parsons Brinckerhoff – PB Farradyne Guide to Updating Highway Emergency Response Plans for Terrorist Incidents, and The Physical Protection of Critical Infrastructures and Key Assets.