

WARNER AVENUE IMPROVEMENTS AND WIDENING FROM MAIN STREET TO GRAND AVENUE

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VOLUME II of III

Volume I: Response to Comments & Draft EIR Revisions

Volume II: Draft EIR

Volume III: Technical Appendices

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FINAL ENVIRONMENTAL IMPACT REPORT – VOLUME II
WARNER AVENUE IMPROVEMENTS AND WIDENING
FROM MAIN STREET TO GRAND AVENUE

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Appendix M	Mitigation Monitoring and Reporting Program



Abbreviations and Acronyms

AAQS	ambient air quality standards
AB	Assembly Bill
ACM	asbestos-containing materials
ADA	Americans with Disabilities Act
ADT	average daily traffic
AQMP	air quality management plan
BAU	business as usual
bgs	below ground surface
BMP	best management practices
CAA	Clean Air Act
CalARP	California Accidental Release Prevention Program
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officer's Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cfs	cubic feet per second
CHSC	California Health and Safety Code
CMP	congestion management program
CNEL	community noise equivalent level
CO	carbon monoxide
CO _{2e}	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CUPA	certified unified program agency
CWA	Clean Water Act
dB	decibel
dba	A-weighted decibel
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control

Abbreviations and Acronyms

EHD	Orange County Environmental Health Division
EIR	environmental impact report
EPA	Environmental Protection Agency (federal)
EPCRA	Emergency Planning and Community Right-to-Know Act
FAA	Federal Aviation Administration
FEIR	final environmental impact report
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gases
GPCE	General Plan Circulation Element
GWMZ	groundwater management zone
GWP	global warming potential
HCM	Highway Capacity Manual
HHRA	human health risk assessment
in/sec	inch per second
IPCC	Intergovernmental Panel on Climate Change
L_{eq}	equivalent continuous noise level
L_{max}	maximum noise level
L_{min}	minimum noise level
LBP	lead-based paint
LCFS	Low-Carbon Fuel Standard
LOS	level of service
LST	localized significance thresholds
LUST	leaking underground storage tank
MCAS	Marine Corps Air Station
MCE	maximum credible earthquake
MMTons	million metric tons
MPAH	Master Plan of Arterial Highways (Orange County)
mph	miles per hour
MPO	metropolitan planning organization
MTons	metric ton
MWD	Metropolitan Water District
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission



Abbreviations and Acronyms

NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O ₃	ozone
OCFCD	Orange County Flood Control District
OCHCA	Orange County Health Care Agency
OCP	Orange County Projections
OCTA	Orange County Transportation Authority
OCWD	Orange County Water District
OHE	overhead electrical
OHP	Office of Historic Preservation
Pb	lead
PCB	polychlorinated biphenyls
PM	particulate matter
POTW	publicly owned treatment works
PPV	peak particle velocity
RCNM	roadway construction noise model
RCP	reinforced concrete pipe
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RHNA	regional housing needs assessment
RMP	risk management plan
RMS	root mean square
ROW	right-of-way
RPS	renewable portfolio standard
RTP	regional transportation plan
RWQCB	regional water quality control board
SARWQCB	Santa Ana Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SGR	student generation rate
SLM	sound level meter

Abbreviations and Acronyms

SO _x	sulfur oxides
SoCAB	South Coast Air Basin
SRA	source receptor area
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TCE	trichloroethylene
TDS	total dissolved solids
TMDL	total maximum daily load
TRI	toxic release inventory
UPRR	Union Pacific Railroad
UST	Underground Storage Tank
V/C	volume-to-capacity ratio
VdB	velocity decibels
VMT	vehicle miles travelled
VOC	volatile organic compounds
VPHPL	vehicles per hour per lane
WQMP	water quality management plan



Abbreviations and Acronyms

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1. *Executive Summary*

1.1 **INTRODUCTION**

This Draft Environmental Impact Report (Draft EIR) addresses the environmental effects associated with the implementation of the proposed Warner Avenue Widening from Main Street to Grand Avenue. The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An environmental impact report is a public document designed to provide the public and local and state governmental agency decision makers with an analysis of potential environmental consequences to support informed decision making. This document focuses on those impacts determined to be potentially significant as discussed in the Initial Study completed for this project (see Appendix A).

This Draft EIR has been prepared pursuant to the requirements of CEQA and the City of Santa Ana's CEQA procedures. The City of Santa Ana, as the lead agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable City technical personnel from other departments and review of all technical subconsultant reports.

Data for this Draft EIR was obtained from onsite field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data and similar literature, and specialized environmental assessments (aesthetics, agricultural resources, air quality, cultural resources, geological resources, greenhouse gas emission, hydrology and water quality, land use, noise, population and housing, transportation and traffic, and utilities and service systems).

1.2 **ENVIRONMENTAL PROCEDURES**

This Draft EIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the proposed project, as well as anticipated future discretionary actions and approvals. The six main objectives of this document as established by CEQA are:

- 1) To disclose to decision makers and the public the significant environmental effects of proposed activities.
- 2) To identify ways to avoid or reduce environmental damage.
- 3) To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
- 4) To disclose to the public reasons for agency approval of projects with significant environmental effects.
- 5) To foster interagency coordination in the review of projects.
- 6) To enhance public participation in the planning process.



1. Executive Summary

An EIR is the most comprehensive form of environmental documentation identified in CEQA and the CEQA Guidelines and provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts.

An EIR is also one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the lead agency must consider the information in the EIR, determine whether the EIR was properly prepared in accordance with CEQA and the CEQA Guidelines, determine that it reflects the independent judgment of the lead agency, adopt findings concerning the project's significant environmental impacts and alternatives, and adopt a Statement of Overriding Considerations if the proposed project would result in significant impacts that cannot be avoided.

1.2.1 EIR Format

This Draft EIR has been formatted as described below.

Section 1. Executive Summary: Summarizes the background and description of the proposed project, the format of this EIR, project alternatives, any critical issues remaining to be resolved, and the potential environmental impacts and mitigation measures identified for the project.

Section 2. Introduction: Describes the purpose of this EIR, background on the project, the Notice of Preparation, the use of incorporation by reference, and Final EIR certification.

Section 3. Environmental Setting: A description of the physical environmental conditions in the vicinity of the project as they existed at the time the Notice of Preparation was published, from both a local and regional perspective. The environmental setting provides baseline physical conditions from which the lead agency determines the significance of environmental impacts resulting from the proposed project.

Section 4. Project Description: A detailed description of the project, the objectives of the proposed project, the project area and location, approvals anticipated to be included as part of the project, the necessary environmental clearances for the project, and the intended uses of this EIR.

Section 5. Environmental Analysis: Provides, for each environmental topic analyzed, a description of the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the project; the existing environmental setting; the potential adverse and beneficial effects of the project; the level of impact significance before mitigation; the mitigation measures for the proposed project; the level of significance of the adverse impacts of the project after mitigation is incorporated; and the potential cumulative impacts associated with the proposed project and other existing, approved, and proposed development in the area.

Section 6. Significant Unavoidable Impacts: Describes the significant unavoidable adverse impacts of the proposed project.

Section 7. Alternatives to the Proposed Project: Compares the impacts of the alternatives to the proposed project.

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Section 8. Impacts Found Not to Be Significant: Briefly describes the potential impacts of the project that were determined not to be significant by the Initial Study and were therefore not discussed in detail in this EIR.

Section 9. Significant Irreversible Changes Due to the Proposed Project: Describes the significant irreversible environmental changes associated with the project.

Section 10. Growth-Inducing Impacts of the Project: Describes the ways in which the proposed project would cause increases in employment or population that could result in new physical or environmental impacts.

Section 11. List of EIR Preparers: Lists the people and organizations that prepared the EIR and technical studies for the proposed project.

Section 12. References: A bibliography of the technical reports and other documentation used in the preparation of this EIR for the proposed project.

Appendices: The appendices for this document contain the following supporting documents. (All appendices are saved on the CD attached to the back cover of this EIR).

- Appendix A Notice of Preparation and Initial Study
- Appendix B Notice of Preparation Comments
- Appendix C Scoping Meeting
- Appendix D Air Quality and Greenhouse Gas Emission Modeling
- Appendix E Historical Resource Assessment
- Appendix F Archaeological Assessment
- Appendix G Geotechnical Reconnaissance
- Appendix H-1 Initial Site Assessment
- Appendix H-2 Addendum to the Initial Site Assessment
- Appendix I-1 Preliminary Drainage Study
- Appendix I-2 Water Quality Management Plan (Conceptual)
- Appendix J Noise Modeling
- Appendix K Draft Relocation Impact Statement
- Appendix L Traffic Impact Study and Supplemental Memorandum



1.2.2 Type and Purpose of This Draft EIR

This Draft EIR has been prepared as a “Project EIR” as defined by State CEQA Guidelines (Section 15161, California Code of Regulations, Title 14, Division 6, Chapter 3). This type of EIR examines the environmental impacts of a specific development project and should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project: planning, construction, and operation.

1.3 PROJECT LOCATION

The portion of the Warner Avenue to be widened is in the southwestern portion of the City of Santa Ana between Main Street (on the west) and Grand Avenue (on the east) (see Figures ES-1, Regional Location, and Figure ES-2, Local Vicinity).

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1.4 PROJECT SUMMARY

The City of Santa Ana (Lead Agency) is proposing to widen Warner Avenue between Main Street and Grand Avenue, from its existing four lanes to six lanes, in order to accommodate projected growth and current congestion.

Warner Avenue is designated within the General Plan Circulation Element Master Plan of Streets and Highways as a Major Arterial. A major arterial is defined by the City generally as a six-lane divided arterial. The Orange County Master Plan of Arterial Highways also designates Warner Avenue within the Santa Ana limits as a Major Arterial, which it defines as a six-lane divided arterial designed to accommodate 45,000 to 60,000 vehicles per day. Existing traffic volumes range between 24,300 and 25,000 vehicles per day along Warner Avenue between Main Street and Grand Avenue. By the year 2035, estimated traffic volumes along this segment are forecast to be 27,500 to 29,600 vehicles per day. The project would also extend the six-lane cross-section of Warner Avenue west of its existing terminus at Grand Avenue. A Class II bikeway will be implemented for the full distance between Main Street and Grand Avenue. The City's General Plan Circulation Element Bikeway Master Plan calls for a Class II on-street bikeway along Warner Avenue from Flower Street to the existing Class I bike trail that crosses Warner Avenue in the vicinity of Rouselle Street.

Warner Avenue is a regionally significant arterial roadway, providing east-west travel through the City and connecting residents in the City with the neighboring cities of Fountain Valley and Tustin. The segment between Grand Avenue and Main Street currently experiences substantial congestion during peak periods. This condition is anticipated to worsen in the future as traffic volumes increase. The existing cross-section of Warner Avenue is deficient in many locations and does not meet existing City of Santa Ana standards.

1.5 SUMMARY OF PROJECT ALTERNATIVES

The CEQA Guidelines (Section 15126[a]) state that an EIR must address "a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives." The alternatives were based, in part, on their potential ability to reduce or eliminate the impacts determined to be significant and unavoidable for the proposed project, as described in Chapter 6, even after implementation of all feasible mitigation measures.

As described in Chapter 7 of this Draft EIR, five project alternatives were identified, considered, and rejected from further analysis as described below:

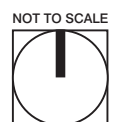
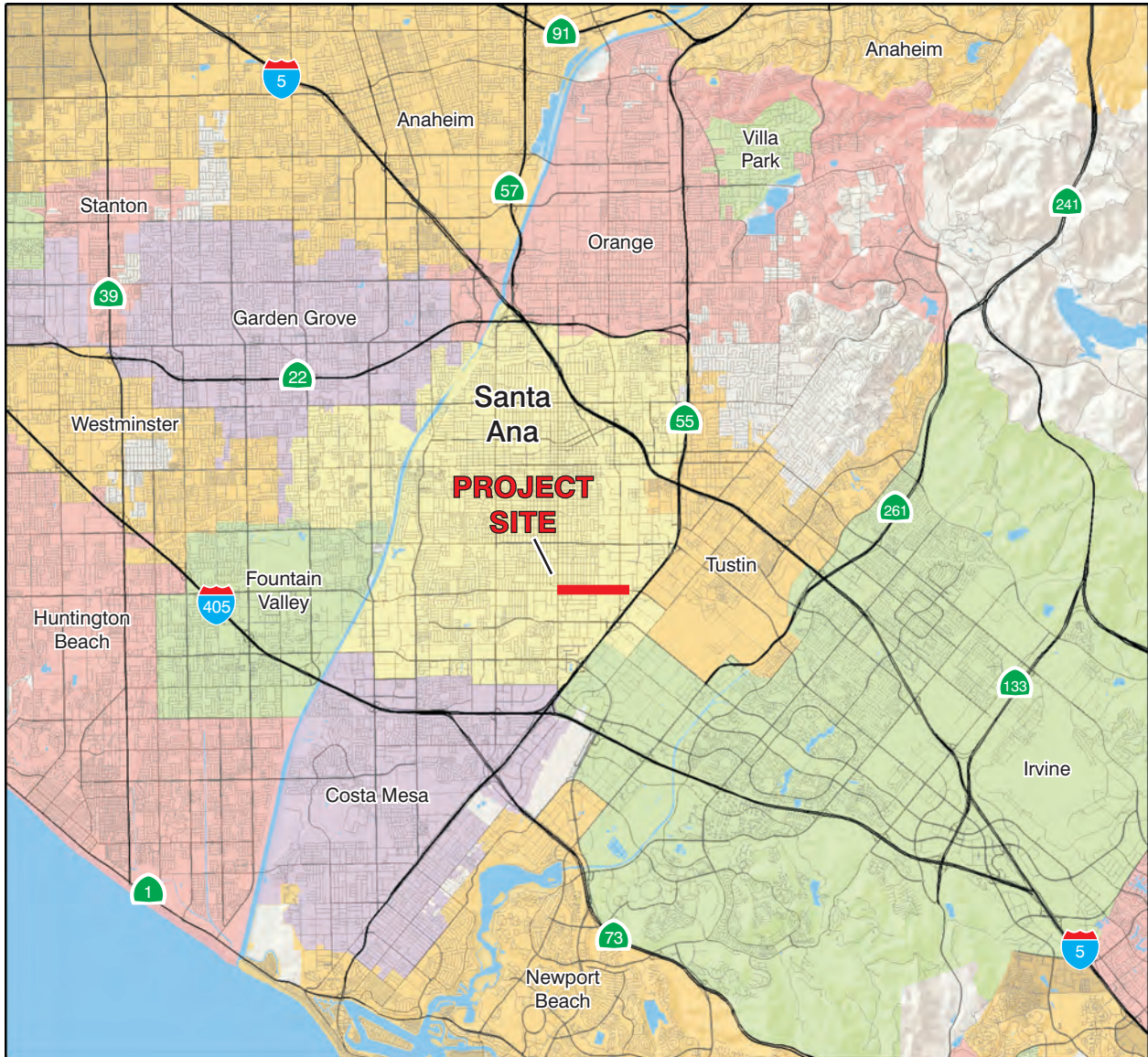
- Alternative Project Site
- Preliminary Engineering Alternatives
 - 100 ROW
 - 110 Center Alternative
 - 120 North Alternative
 - 120 Center Alternative

Four project alternatives were identified and analyzed for relative impacts as compared to the proposed project:

- No Project Alternative
- 110 South Alternative
- 120 South Alternative
- Revised Construction Alternative

1. Executive Summary

Regional Location

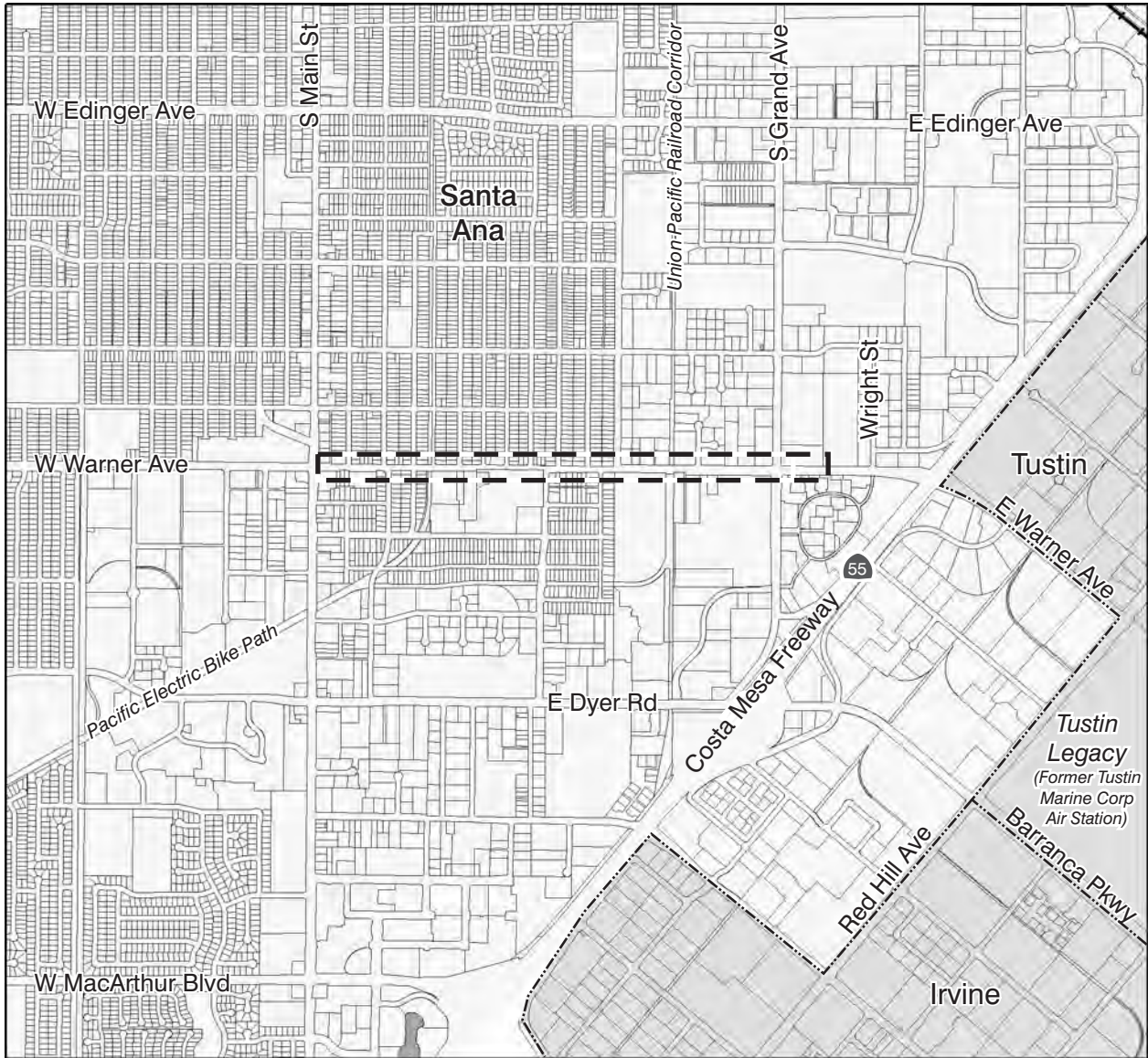


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Local Vicinity



- General Project Area
- City Boundary

0 2,000
Scale (Feet)



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1. Executive Summary

Please refer to Chapter 7 of this Draft EIR for a complete discussion of how the alternatives were selected and the relative impacts associated with each alternative. The following presents a summary of each of the alternatives analyzed in this Draft EIR.

No Project Alternative

Section 15126.6(e) of the CEQA Guidelines requires the analysis of a No Project Alternative. This No Project analysis must discuss the existing condition, as well as what would be reasonably expected to occur in the foreseeable future if the project were not to be approved. In this alternative Warner Avenue from Main Street to Grand Avenue is not widened, and the existing roadway configuration and intersection traffic controls remain as is. The new bicycle lanes and improved sidewalks included in the proposed project would not be constructed. No properties would be acquired, and no buildings demolished for roadway widening. Drainage improvements included in the proposed project would not be installed.

110 South Alternative

This alternative would use a 110-foot total ROW width, a modified Major Arterial ROW, and would align the road widening mostly on the south of the existing centerline (see Chapter 7, Figure 7-3, *110' South Widening Alternative*). The ROW includes six 11-foot lanes, a 14-foot-wide raised landscaped median, 5-foot shoulder/bike lanes, and 10-foot parkway and sidewalk. This alternative would require 25 full and 31 partial parcel acquisitions.

Compared to the proposed project, the major differences with this alignment are the acquisition and building removal of three additional commercial parcels (at the strip commercial center) and one industrial parcel (Cherry Aerospace). The majority of impacts to full residential parcels would be shifted from the north to the south side of Warner Avenue and result in the reduction of 10 full acquisitions, and an increase of 4 partial acquisitions, compared to the proposed project. Additionally, partial impacts to industrial parcels on the north side of Warner Avenue would be reduced.

This alternative would result in the loss of a strip of property along Warner Avenue at the James Monroe Elementary School, National Guard Armory, and Delhi Park.

120 South Alternative

This alternative would use a 120-foot total ROW width, the City of Santa Ana standard Major Arterial ROW, and would align most of the road widening to the south of the existing centerline (see Chapter 7, Figure 7-6, *120' South Widening Alternative*). The ROW includes six 12-foot lanes, a 14-foot-wide raised landscaped median, 7-foot shoulder/bike lanes, and 10-foot parkway and sidewalk. This alternative would require 31 full and 25 partial parcel acquisitions.

Compared to the proposed project, the major differences with this alignment are the acquisition and building removal of three additional commercial parcels (at the strip commercial center), the fire station, and two industrial parcels (Cherry Aerospace and H&H asphalt). The majority of impacts to full residential parcels would be shifted from the north to the south side of Warner Avenue and result in the reduction of 4 full acquisitions.

This alternative would result in the loss of a significant strip of property along Warner Avenue at the Monroe Elementary School, National Guard Armory, and Delhi Park.



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Revised Construction Alternative

This alternative represents an alternative construction equipment mix and schedule. It was selected for evaluation for its potential to reduce the significant construction-related noise impacts. The operation of heavy earthmoving equipment would substantially elevate noise levels near residential areas and schools (considered sensitive noise receptors) over several months; therefore, construction noise is considered significant. This extended construction schedule would allow for a reduction of the number of heavy earthmoving equipment and construction activities occurring daily and a reduction in noise.

1.6 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the lead agency as to the following:

1. Whether this Draft EIR adequately describes the environmental impacts of the project.
2. Whether the benefits of the project override those environmental impacts which cannot be feasibly avoided or mitigated to a level of insignificance.
3. Whether the proposed land use changes are compatible with the character of the existing area.
4. Whether the identified goals, policies, or mitigation measures should be adopted or modified.
5. Whether there are other mitigation measures that should be applied to the project besides the mitigation measures identified in the Draft EIR.
6. Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic project objectives.

1.7 AREAS OF CONTROVERSY

In accordance with Section 15123(b)(2) of the CEQA Guidelines, the Draft EIR is to identify areas of controversy known to the lead agency, including issues raised by agencies and the public.

Prior to preparation of the Draft EIR, the City held two information meetings for the community (May 22, 2012, and July 10, 2012) and a public scoping meeting (October 18, 2012) to determine the concerns of responsible and trustee agencies and the community regarding the proposed project. The meetings were held at the Manuel Esqueda Elementary School and were attended by between 30 to 50 community members and interested parties. Issues raised during the scoping meeting included concerns with the loss of housing/personal property and cultural heritage; loss of businesses; pedestrian safety; increase in traffic, traffic noise; impacts to utilities; impacts to emergency response; and flooding during heavy rains.

The environmental issues raised at the scoping meeting are fully addressed in their respective topical areas in Chapter 5 of this Draft EIR. Comments submitted at the scoping meeting are in Appendix C along with the slide presentation.

1. Executive Summary

This Draft EIR has taken into consideration the comments received from the various agencies and jurisdictions in response to the Notice of Preparation (NOP) that was issued by the City of Santa Ana on October 1, 2012, to the State Clearinghouse, responsible agencies, the surrounding community, and interested parties. Written comments received during the NOP period (October 1, 2012, to October 30, 2012) are in Appendix B.

1.8 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 1-1 summarizes the conclusions of the environmental analysis contained in this Draft EIR. Impacts are identified as significant or less than significant and mitigation measures are identified for all significant impacts. The level of significance after imposition of the mitigation measures is also presented.



1. Executive Summary

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**Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation**

<i>Environmental Impact</i>	<i>Level of Significance Before Mitigation</i>	<i>Mitigation Measures</i>	<i>Level of Significance After Mitigation</i>
5.1 AIR QUALITY			
5.1-1 The project would not affect regional population, housing, and employment growth projections in the SCAG region and would therefore be consistent with the Air Quality Management Plan.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.1-2 Short-term construction emissions would not exceed SCAQMD's regional significance thresholds and would not cumulatively contribute to the nonattainment designations of the South Coast Air Basin.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.1-3 The project would not generate an increase in mobile sources of air pollution that exceed SCAQMD's regional operational significance thresholds.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.1-4 Construction activities associated with the proposed project could expose sensitive receptors to substantial pollutant concentrations of coarse particulate matter (PM ₁₀).	Potentially Significant	AQ-1 Prior to construction contract award, the City of Santa Ana shall specify in the construction special provisions that the construction contractor shall include limitations on the amount of roadway debris to be removed from the site. During demolition of the roadway including asphalt, roadbed, curb, gutter, and sidewalks, the contractor shall limit the daily amount of demolition debris haul to a maximum of 38 trucks per day if 12-ton capacity haul trucks are used, assuming a one-way haul distance of 9 miles. If truck haul distance for roadway debris is greater than 9 miles, then hauling shall be restricted to no more than 684 miles per day. The demolition debris hauling phase shall not overlap with any other construction phases, including grading. These requirements shall be noted on all construction management plans and verified by the City of Santa Ana during demolition and grading activities	Less Than Significant

1. Executive Summary

**Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation**

<i>Environmental Impact</i>	<i>Level of Significance Before Mitigation</i>	<i>Mitigation Measures</i>	<i>Level of Significance After Mitigation</i>
5.1-5 Redistribution of traffic in vicinity of Warner Avenue would not expose offsite sensitive receptors to substantial concentrations of air pollutants.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.2 CULTURAL RESOURCES			
5.2-1 The project would not adversely impact a historically significant resource.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.2-2 Project-related earthwork may result in a substantial adverse change in the significance of an archaeological resource.	Potentially Significant	<p>CUL-1 Prior to the initiation of project-related earthmoving activities, the City of Santa Ana project manager or their designee shall retain a County-certified qualified archaeologist. The qualified archaeologist shall meet the Secretary of the Interior's Professional Qualifications Standards (48 Federal Register 44738-39). The archaeologist must have knowledge of both prehistoric and historical archaeology, and shall remain on call in the event of a discovery.</p> <p>CUL-2 Prior to the start of ground disturbing activities on the project site, the City of Santa Ana project manager or their designee shall ensure that a qualified archaeologist or another mitigation program staff member has conducted cultural resources sensitivity training for all construction workers involved in moving soil or working near soil disturbance.</p> <ul style="list-style-type: none"> • Construction personnel, including heavy-equipment operators, shall be briefed on procedures to be followed in the event that cultural remains are encountered by earthmoving activities. • Pre-construction training shall include: <ul style="list-style-type: none"> ○ Review the types of archaeological resources that might be found ○ Review of laws and applicable requirements concerning the protection of cultural resources. ○ Prehistoric or historic cultural resource discovery procedures • The briefing shall be presented to new contractor personnel as necessary. 	Less Than Significant

**Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation**

<i>Environmental Impact</i>	<i>Level of Significance Before Mitigation</i>	<i>Mitigation Measures</i>	<i>Level of Significance After Mitigation</i>
		<ul style="list-style-type: none"> Names and telephone numbers of the monitor and other mitigation program personnel shall be provided to appropriate construction personnel. <p>CUL-3 During project-related earthmoving activities, if cultural resources are discovered, a qualified archaeologist shall prepare a cultural resource monitoring plan. The cultural resource monitoring plan shall outline when and for how long monitoring shall occur, where on the site monitoring shall be required, methods of monitoring, types of artifacts anticipated, procedures for temporary stop and redirection of work to permit sampling, identification and evaluation of possible resources, procedures for additional analysis, and accommodation and procedures for Native American monitors, if any.</p>	
5.3 GEOLOGY AND SOILS			
5.3-1 The project would not expose people or buildings to strong ground shaking.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.3-2 The project could expose people to hazards arising from liquefaction.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.3-3 The project would not result in substantial soil erosion or loss of topsoil.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.3-4 The project is not expected to result in substantial hazards arising from unstable soils, such as ground subsidence or hydrocollapse.	Less Than Significant	No mitigation measures are required.	Less Than Significant

1. Executive Summary

**Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation**

<i>Environmental Impact</i>	<i>Level of Significance Before Mitigation</i>	<i>Mitigation Measures</i>	<i>Level of Significance After Mitigation</i>
5.4 GREENHOUSE GAS EMISSIONS			
5.4-1 The project would result in a nominal increase in greenhouse gas emissions and would not exceed the proposed SCAQMD screening threshold.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.4-2 The project would not conflict with plans adopted for the purpose of reducing greenhouse gas emissions.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.5 HAZARDS AND HAZARDOUS MATERIALS			
5.5-1 The project may create a hazard to the public or the environment through accidental release of asbestos-containing material and/or lead-based paint.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.5-2 Accidental release of hazardous materials that would be used by the project would not pose substantial hazards to people or the environment.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.5-3 Project construction may generate emissions that affect air quality at nearby schools. Handling of hazardous materials and hazardous wastes by the project would not pose substantial risks to students at nearby schools.	Potentially Significant	Implementation of mitigation measure AQ-1	Less Than Significant

**Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation**

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.5-4 A portion of the site is included on a list of hazardous materials sites.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.6 HYDROLOGY AND WATER QUALITY			
5.6-1 Project-related stormwater improvements would remedy existing drainage capacity deficiencies, improving existing conditions.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.6-2 Project-related construction may result in an increase in pollutant concentrations in stormwater runoff.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.6-3 Implementation of best management practices included in the project-specific water quality management plan would assure that long-term impacts to water quality are minimized.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.7 LAND USE AND PLANNING			
5.7-1 Project implementation would not physically divide an established community.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.8 NOISE			
5.8-1 Long-term operations due to expansion of Warner Avenue from four to six lanes would expose noise-sensitive land uses to ambient noise levels that exceed the City's noise compatibility criteria.	Potentially significant	N-1 Prior to final engineering plan approval, when detailed roadway alignment, landscape plans, and elevations are available, a final noise study shall be prepared to identify specific sound wall locations along receptors that would be significantly impacted by the project. With current information significantly affected properties are listed in Table 5.8-12. Figure 5.8-2 shows the sound wall locations and heights that would reduce noise	Less Than Significant

1. Executive Summary

**Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation**

<i>Environmental Impact</i>	<i>Level of Significance Before Mitigation</i>	<i>Mitigation Measures</i>	<i>Level of Significance After Mitigation</i>
		impacts to levels below significance. For aesthetic purposes, the City can use the alternative wall location shown on Figure 5.8-2; however, one of the two wall locations is required to provide sound attenuation to meet City of Santa Ana noise standards. Sound walls shall be solid from the ground to the top with no decorative cutouts and shall weigh at least 3.5 pounds per square foot of face area. The sound walls may be constructed using masonry block, ¼-inch thick glass, or other transparent material with sufficient weight per square foot. The need, location, and height of sound walls/walls shall be determined based on the conclusions of the final acoustical report and the final pad elevations of the grading plan. All walls determined to be necessary for noise mitigation by the final acoustical report shall be incorporated into the final roadway construction plans.	
5.8-2 Construction activities would expose sensitive uses to groundborne vibration levels that would be perceptible and potentially cause architectural damage at homes.	Potentially significant	N-2 The use of vibratory rollers shall be prohibited within 30 feet of a residential structure. If soil compacting is required within 30 feet of a residential structure, static rollers shall be employed.	Less Than Significant
5.8-3 Construction activities would substantially elevate noise levels in the vicinity of noise-sensitive land uses for an extended duration.	Potentially significant	N-3 Prior to the start of grading, the construction contractor shall provide evidence acceptable to the Public Works Director, or designee, that: <ul style="list-style-type: none"> a. All construction vehicles and equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers; mufflers shall be equivalent to or of greater noise reducing performance than manufacturer's standard. b. Stationary equipment, such as generators, cranes, and air compressors, shall be located as far from adjacent residences and James Monroe Elementary School as feasible. c. Equipment maintenance, vehicle parking, and material staging areas shall be located as far away from adjacent residences and James Monroe Elementary School as feasible. 	Significant and Unavoidable

**Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation**

<i>Environmental Impact</i>	<i>Level of Significance Before Mitigation</i>	<i>Mitigation Measures</i>	<i>Level of Significance After Mitigation</i>
		<p>The effectiveness of temporary walls during construction would be limited because all homes on the south side of Warner Avenue take access from Warner Avenue, and gaps and opening in the walls would greatly reduce attenuation. On the northside homes, the implementation of temporary walls would (1) have the potential to interfere with the construction work, (2) would be implemented only after the demolition of the first row of homes and removal of debris, (3) cause aesthetics impacts, and (4) cause noise impacts during removal. To reduce temporary construction noise, N-4 would require the construction of the recommended permanent walls described in N-1 as soon as practicable to reduce potential noise impacts at the second row of homes north of the project site for the remainder of the construction period.</p> <p>N-4 The recommended sound walls described in N-1 shall be constructed as soon as practicable to minimize temporary construction-related noise impacts during implementation of the project.</p>	
5.9 POPULATION AND HOUSING			
5.9-1 Project implementation would displace substantial numbers of housing and people, but would not require construction of replacement housing.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.10 TRANSPORTATION AND TRAFFIC			
5.10-1 The proposed widening of Warner Avenue would improve roadway and circulation performance on the widened segments of Warner Avenue.	Less Than Significant	No mitigation measures are required.	Less Than Significant

1. Executive Summary

**Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation**

<i>Environmental Impact</i>	<i>Level of Significance Before Mitigation</i>	<i>Mitigation Measures</i>	<i>Level of Significance After Mitigation</i>
5.10-2 The proposed project would not result in traffic that exceeds levels of service thresholds at study area intersections.	Less than Significant	No mitigation measures are required.	Less than Significant
5.10-3 Project construction may result in temporary impacts to levels of service at Warner Avenue/Main Street and Warner Avenue/Halladay Street intersections.	Potentially Significant	<p>T-1 Any temporary lane closures shall be limited to non-rush-hour periods. Directions to alternative routes shall be provided to drivers, bicyclists, and pedestrians during road closures. Road closures shall not last over 24 hours without advance written approval of the Executive Director of the City of Santa Ana Public Works Agency or designee.</p> <p>T-2 Prior to the beginning of any utility relocation, demolition, or construction work, a detailed construction traffic control plan shall be prepared by a licensed civil engineer. The construction traffic control plan shall be based on the most recent version of the Greenbook: Standard Specifications for Public Works Construction (federal); California Department of Transportation California Manual on Uniform Traffic Control Devices (state); Southern California Chapter of the American Public Works Association Work Area Traffic Control Handbook; and City Standard Provisions (local). The traffic control plan shall include extensive public outreach and public awareness through the use of mailers and notices in local papers and other publications.</p>	Significant and Unavoidable
5.10-4 The project would not result in hazardous conditions, conflicting uses, or inadequate emergency access.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.10-5 The project would develop improved bicycle lanes on Warner Avenue in the project site.	Less Than Significant	No mitigation measures are required.	Less Than Significant

**Table 1-1
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation**

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.10-6 Project construction may require additional temporary safety measures to assure safe routes to schools for elementary schools next to the project site.	Potentially Significant	T-3 The construction traffic control plan required by Mitigation Measure T-2 shall include addition of any needed temporary safety measures to the Safe Routes to Schools plans for James Monroe Elementary School and Manuel Esqueda Elementary School.	Less Than Significant
5.10-7 The project could require temporary alterations, including rerouting, of OCTA bus services during project construction; and permanent relocation of the bus stop at Warner Avenue and Standard Avenue for the proposed reconfiguration of the Cherry Aerospace access improvements.	Potentially Significant	T-4 At least three months before the start of any project work that could impact the Warner Avenue roadway, concrete pads at existing bus stops in the project site, or sidewalks, the City of Santa Ana and the project traffic engineer shall coordinate with the Orange County Transportation Authority to specify any needed temporary alterations of service on OCTA Routes 55, 72, and 463. Such alterations may include rerouting bus routes off of Warner Avenue in the project site and permanent relocation of the bus stop at Standard Avenue and Warner Avenue due to the proposed truck turn-out for Cherry Aerospace.	Less Than Significant
5.10-8 The proposed raised median in Warner Avenue would require reconfiguration of the Cherry Aerospace driveway and truck access that could impact the intersection of Standard Avenue and Warner Avenue or adjacent study area intersections.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.11 UTILITIES AND SERVICE SYSTEMS			
5.11-1 The project would install expanded stormwater drainage facilities in Warner Avenue in parts of the project site.	Less Than Significant	No mitigation measures are required.	Less Than Significant

1. Executive Summary

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2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) requires that all state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority prior to taking action on those projects. This Draft Environmental Impact Report (Draft EIR) has been prepared to comply with CEQA, as set forth in the California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code Section 21000 et seq.) and State Guidelines for the Implementation of the CEQA of 1970 (herein referenced as CEQA Guidelines), as amended (California Code of Regulations Sections 15000 et seq.). The EIR is the public document designed to provide decision makers and the public with an analysis of the environmental effects of the Warner Avenue Widening from Main Street to Grand Avenue project (proposed project), to indicate possible ways to reduce or avoid environmental damage, and to identify alternatives to the project. The EIR must also disclose significant environmental impacts that cannot be avoided; growth inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present, and reasonably foreseeable future projects.

Pursuant to CEQA Section 21067, the lead agency means “the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment.” The City of Santa Ana has the principal responsibility for approval of the proposed project. For this reason, the City of Santa Ana is the CEQA lead agency for this project.

The intent of the Draft EIR is to provide sufficient information on the potential environmental impacts of the proposed Warner Avenue Widening from Main Street to Grand Avenue project to allow the City of Santa Ana to make an informed decision regarding approval of the project. Specific discretionary actions to be reviewed by the City and potential project permits and approvals required from other regulatory agencies are described in Section 4.4, *Intended Uses of the EIR*.

This Draft EIR has been prepared in accordance with requirements of the:

- California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code Section 21000 et seq.)
- State Guidelines for the Implementation of the CEQA of 1970 (herein referenced as CEQA Guidelines), as amended (California Code of Regulations Sections 15000 et seq.)

The overall purpose of this Draft EIR is to inform the lead agency, responsible agencies, decision makers, and the general public of the environmental effects of the development and operation of the proposed project. This Draft EIR addresses the potential environmental effects of the project, including effects that may be significant and adverse; evaluates a number of alternatives to the project; and identifies mitigation measures to reduce or avoid adverse effects.



2. Introduction

2.2 NOTICE OF PREPARATION AND INITIAL STUDY

The City of Santa Ana determined that an EIR would be required for this project and prepared a Notice of Preparation of a Draft Environmental Impact Report and Notice of Public Scoping Meeting (NOP) and Initial Study (IS) (included as Appendix A).

The NOP included information about the environmental document, public review period, and public meeting and was distributed to the surrounding community using three methods: the NOP was mailed to the surrounding community, was posted at the city and main library, and posted on the city web site. The NOP was printed in English and Spanish and included information on where the IS was available for review; how to comment on the IS; and when and where the public scoping meeting would be held. The public review period for the NOP/IS was from October 1, 2012, to October 30, 2012.

2.2.1 Notice of Preparation (NOP)

Per the CEQA Guidelines Section 15082, a NOP was prepared. Public outreach for the NOP included distribution using the following methods:

NOP Sent by U.S. Postal Mail

- Last known address based on county assessor records, to every property within a 500-foot radius of Warner Avenue between Main Street and Grand Avenue (included property owners, tenants, and businesses), along with people who requested project notification by including name and address on the sign-in sheet at the two community information meetings: 980 NOPs

2.2.2 Initial Study and NOP

The IS and NOP were sent to the Governor's Office of Planning and Research, State Clearinghouse, for distribution to the state agencies. They were also sent by FedEx to six local agencies. During the 30-day review period, the IS and NOP were made available for public review at the following locations:

- City of Santa Ana, City Hall, Clerk of the Council, 20 Civic Center Plaza, 8th Floor, Santa Ana, CA 92702
- City of Santa Ana, Public Works Agency, Ross Annex, 1st floor, 20 Civic Center Plaza, Santa Ana, CA 92702
- Santa Ana Public Library, Main Library, 6 Civic Center Plaza, Santa Ana, CA 92701

Comments received during the NOP public review period—October 1 to October 30, 2012—are in Appendix B. The scoping process is used to help determine the scope of the environmental issues to be addressed in the Draft EIR. Based on this process, certain environmental categories were identified as having the potential to result in significant impacts. Issues considered Potentially Significant are addressed in this Draft EIR. Issues identified as Less Than Significant or No Impact are not addressed beyond the discussion contained in the IS. Refer to the Initial Study in Appendix A for discussion of how these initial determinations were made.

A total of four agencies and one community organization submitted comments to the NOP. Table 2-1 summarizes the issues identified by the commenting agencies, along with a reference to the section(s) of this Draft EIR where the issues are addressed.

**Table 2-1
NOP Comment Summary**

Commenting Agency/Person	Comment Type	Comment Summary	Issue Addressed In:
State of California, Public Utilities Commission (10/12/2012)	Railroad Safety	<ul style="list-style-type: none"> • Commission is responsible for approval of construction or alteration of crossings. • Commission's General Order (GO) No. 88-B requires staff approval for alteration of existing public crossings • The City of Santa Ana should contact Commission's Rail Crossings Engineering Section staff to arrange a diagnostic meeting to evaluate the impacts of any proposed changes on the crossing. 	<ul style="list-style-type: none"> • Section 5.10, <i>Transportation and Traffic</i> • Section 5.10, <i>Transportation and Traffic</i> • Section 5.10, <i>Transportation and Traffic</i>
City of Fountain Valley (10/8/2012)	None	<ul style="list-style-type: none"> • The City has reviewed the document and has no comments regarding the scope of the analysis. 	<ul style="list-style-type: none"> • Comment noted
Native American Heritage Commission (10/10/2012)	Cultural Resources	<ul style="list-style-type: none"> • Identifies state and federal statues relating to Native American historic properties and resources. • Requested that the lead agency contact the Native American contacts provided by the Native American Heritage Commission. 	<ul style="list-style-type: none"> • Section 5.2, <i>Cultural Resources</i> • Section 5.2, <i>Cultural Resources</i>
South Coast Air Quality Management District (11/1/2012)	Air Quality	<ul style="list-style-type: none"> • Requests a copy of the Draft EIR and all air quality modeling files. • States air quality regulations, methodology, guidance documents, and data sources for preparation of analysis 	<ul style="list-style-type: none"> • Document and files will be sent • Section 5.1, <i>Air Quality</i>
Delhi Neighborhood Association c/o Vivian Martinez, Homeowner/Property Owner (12/28/11)	<ul style="list-style-type: none"> • Air Quality • Cultural Resources • Hazardous Materials • Hydrology and Water Quality • Hydrology and Water Quality • Population & Housing • Transportation and Traffic • Utilities and service systems 	<ul style="list-style-type: none"> • Air Quality – safety for breathing may be compromised. • Cultural Resources – historic land uses: nursery adjacent to the City Yard on the south side of Warner at Halladay • Hazards and Hazardous Materials – pesticides may have been used at the nursery; the Armory may have had exposure to pesticides; pesticides may have contaminated air quality, soils and geology or even greenhouse gas emissions. • Hydrology and Water Quality – historically water would flow down Warner Ave.: flooding may be an issue. • Loss of homes therefore loss of taxable income for the City of Santa Ana. • Population/Housing – project would uproot families from their 5 to 6 generation homes and the long standing community. Many families & businesses will also be affected financially. The elderly need careful consideration to accommodate their needs. • Transportation and Traffic – Warner Ave. and adjacent streets running north and south may not be able to handle the traffic expected. Bus, taxi, car, business, will need early notification to adjust to the street change. 	<ul style="list-style-type: none"> • Section 5.1, <i>Air Quality</i> • Section 5.2, <i>Cultural Resources</i> • Section 5.5, <i>Hazardous Materials</i> • Section 5.6, <i>Hydrology and Water Quality</i> • Taxable income for the City is not a physical environmental issue covered by CEQA. • Section 5.9, <i>Population & Housing</i> • Section 5.10, <i>Transportation and Traffic</i>



2. Introduction

**Table 2-1
NOP Comment Summary**

Commenting Agency/Person	Comment Type	Comment Summary	Issue Addressed In:
		<ul style="list-style-type: none"> • Santa Ana Police Department and Paramedics must have access to all areas during the project construction and operation. • Utilities and service systems - Water, Gas, and Lights need to be considered. 	<ul style="list-style-type: none"> • Section 5.10, <i>Transportation and Traffic</i> • Section 5.11, <i>Utilities and Service Systems</i>

2.3 PUBLIC MEETINGS AND CEQA SCOPING MEETING

Prior to preparation of the Draft EIR, the City held two information meetings for the community (May 22, 2012, and July 10, 2012), and a public scoping meeting (October 18, 2012) to determine the concerns of responsible and trustee agencies and the community regarding the proposed project. The meetings were held at the Manuel Esqueda Elementary School, and were attended by between 30 and 50 community members and interested parties.

The first community meeting on May 22, 2012, was held to inform the community that the City was in the process of studying alternatives for the Warner Avenue Widening from Main Street to Grand Avenue project. The second community meeting on July 10, 2012, was held to update the community on the alternative alignments that the City was considering. After the City decided on a preferred alignment, a preliminary environmental analysis was conducted and an Initial Study was prepared. The NOP and Initial Study were circulated for public review on October 1, 2012, and a CEQA scoping meeting was held on October 18, 2012. During the scoping meeting, the proposed project was described and oral comments were recorded. The scoping meeting was held to request input from public agencies, stakeholders, organizations, and individuals on the scope of the analysis addressing the potential environmental effects of the proposed project. Table 2-2 summarizes the issues identified at the scoping meeting, along with a reference to the sections of this Draft EIR where the issues are addressed.

**Table 2-2
Scoping Meeting Comment Summary**

Commenting Agency/Person	Comment Type	Comment Summary	Issue Addressed In:
Oral Comments			
Phil Spector	Walls	<ul style="list-style-type: none"> • How tall will the walls be? 	<ul style="list-style-type: none"> • Section 5.8, <i>Noise</i>
Joe Fuentes	Property acquisition	<ul style="list-style-type: none"> • Requested list of addresses that would be acquired by the City. 	<ul style="list-style-type: none"> • Chapter 4, <i>Project Description</i>
John Adams	Project schedule	<ul style="list-style-type: none"> • Asked when EIR would be done. 	<ul style="list-style-type: none"> • Notice of Availability (NOA)
Lucy Hernandez	Public Outreach	<ul style="list-style-type: none"> • Need to spread the word about meetings better; deliver notices door to door. She missed the previous meeting. 	<ul style="list-style-type: none"> • Chapter 2, <i>Introduction</i>
Jessica (last name inaudible)	<ul style="list-style-type: none"> • Soil • Water • Noise 	<ul style="list-style-type: none"> • Is soil, water & noise sampling being done? • Is groundwater safe in our area? • Does the City have the money for the project? [addressed at meeting] 	<ul style="list-style-type: none"> • Section 5.3, <i>Geology & Soils</i> • Section 5.6, <i>Hydrology and Water Quality</i> • Section 5.8, <i>Noise</i>

2. Introduction

**Table 2-2
Scoping Meeting Comment Summary**

Commenting Agency/Person	Comment Type	Comment Summary	Issue Addressed In:
Robert Hernandez	<ul style="list-style-type: none"> Public Outreach 	<ul style="list-style-type: none"> Warner widening will affect people in a 2-3,000 foot radius, not 500 feet. Adding a raised median will increase traffic because people have to drive farther. Traffic will be bad further away from Warner; well beyond the project site, so City must send notice to those people also. 	<ul style="list-style-type: none"> Chapter 2, <i>Introduction</i> Section 5.10, <i>Transportation and Traffic</i> Section 5.10, <i>Transportation and Traffic</i>
Vivian Martinez	<ul style="list-style-type: none"> Land Use: neighborhood Housing Bike trail Schools Churches 	<ul style="list-style-type: none"> Concerned about the neighborhood. Armory houses homeless; where will they go? Impacts to the bike trail How many homeowners are affected? Who is paying for the project? Impacts on schools and churches that service the neighborhood. 	<ul style="list-style-type: none"> Section 5.7, <i>Land Use and Planning</i> Section 5.9, <i>Population & Housing</i> Section 5.10, <i>Transportation and Traffic</i> Chapter 4, <i>Project Description and Section 5.9, Population & Housing</i> addressed at meeting Chapter 4, <i>Project Description and Section 5.9, Population & Housing</i>
Richard Garcia, Memorial Park Neighborhood	<ul style="list-style-type: none"> Traffic 	<ul style="list-style-type: none"> Project is good but doesn't show the whole picture; other streets will have increased traffic and speeding. Traffic will impact kids and bicyclists Cut through traffic will be an issue 	<ul style="list-style-type: none"> Section 5.10, <i>Transportation and Traffic</i> Section 5.10, <i>Transportation and Traffic</i> Section 5.10, <i>Transportation and Traffic</i>
Mike Pratt	<ul style="list-style-type: none"> Other transportation modes: wheelchair access 	<ul style="list-style-type: none"> Wheelchair access is important With no left turn at Cypress Ave. traffic will be diverted to surrounding streets and air quality will be impacted. How will wheelchairs cross the street with raised median? City needs a website to show where wheelchairs can be used on Warner Ave. To reduce carbon dioxide you should put in greenbelts, parks and maybe a dog park. 	<ul style="list-style-type: none"> Section 5.10, <i>Transportation and Traffic</i> Section 5.1, <i>Air Quality</i> Section 2.3.1, <i>Expanded Discussion and Section 5.10, Transportation and Traffic</i> Section 2.3.1, <i>Expanded Discussion</i> Section 2.3.1, <i>Expanded Discussion and Chapter 4, Project Description</i>
Name inaudible	<ul style="list-style-type: none"> Construction 	<ul style="list-style-type: none"> Is the EIR started? Questions about construction schedule. 	<ul style="list-style-type: none"> Yes Chapter 4, <i>Project Description</i>
Emma Diego	<ul style="list-style-type: none"> Housing 	<ul style="list-style-type: none"> Will my property be a full or partial take? Property has been in the family for ages don't want my property lost. 	<ul style="list-style-type: none"> Chapter 4, <i>Project Description and Section 5.9, Population & Housing</i> Section 2.3.1, <i>Expanded Discussion and Section 5.9, Population & Housing</i>



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**Table 2-2
Scoping Meeting Comment Summary**

Commenting Agency/Person	Comment Type	Comment Summary	Issue Addressed In:
Written Comments			
Carmen Gonzalez	<ul style="list-style-type: none"> Housing Cultural Resources 	<ul style="list-style-type: none"> Requests consideration for the seniors and children that have difficulty adjusting to new homes. Some families date back to the 1800s and the city founding. Requests that homes not be acquired 	<ul style="list-style-type: none"> Section 2.3.1, <i>Expanded Discussion</i> and Section 5.9, <i>Population & Housing</i> Section 2.3.1, <i>Expanded Discussion</i> and Section 5.2, <i>Cultural Resources</i> Section 2.3.1, <i>Expanded Discussion</i> and Section 5.9, <i>Population & Housing</i>
Lucy Hernandez	<ul style="list-style-type: none"> Traffic Pedestrian Safety Public Outreach 	<ul style="list-style-type: none"> Traffic will be impacted by people trying to cross the street. There will be a safety risk for children, families, & residents crossing Warner Ave. Standard Ave. will be congested with traffic. How will the city create a safer flow of traffic? Why doesn't "Complete Streets" concept work on the existing street? Outreach to community needs to be more effective: deliver notices by hand and go beyond the 500-foot radius. 	<ul style="list-style-type: none"> Section 5.10, <i>Transportation and Traffic</i> Section 5.10, <i>Transportation and Traffic</i> Section 5.10, <i>Transportation and Traffic</i> Section 5.10, <i>Transportation and Traffic</i> Section 5.10, <i>Transportation and Traffic</i> Section 5.10, <i>Transportation and Traffic</i> Comment taken under consideration. Community was also notified on City website and in newspaper.
Virginia Ambriz	<ul style="list-style-type: none"> Noise Traffic Flooding 	<ul style="list-style-type: none"> Too much noise starting at 5:00 AM: a lot of cars honking, there's a lot of arguing and fighting. There are a lot of car accidents. When it rains the water rises all the way up to the sidewalk. The cars making left turns slow down traffic. 	<ul style="list-style-type: none"> Sections 5.8, <i>Noise</i> Section 5.10, <i>Transportation and Traffic</i> Section 5.6, <i>Hydrology and Water Quality</i> Section 5.10, <i>Transportation and Traffic</i>

2.3.1 Expanded Discussion

This section provides additional explanation regarding some of the comments received during the NOP comment period along with written and oral comments at the public scoping meeting. Reference to this section is included in Table 2-2, as applicable. All comments will be considered by the City council prior to making a decision on the project.

Wheelchair crossing

Wheelchair access will be available throughout the project limits as safe crossing areas near traffic lights. The raised medial would prevent wheel chairs from crossing as unsafe midblock areas.

Greenbelts

The widening project would significantly increase the amount of landscaping. A 14-foot wide landscaped center median and parkways are included as part of the project.

Housing

Unfortunately some homes and commercial businesses would be removed during the construction of the street widening. The City of Santa Ana would provide relocation assistance and payments in accordance with the California Relocation Act and the Relocation Assistance and Real Property Acquisition Guidelines. The social and emotional cost of this project is not a physical environmental issue covered by the California Environmental Quality Act (CEQA) or this CEQA document.

Traffic

The project would reduce the number of accidents by eliminating cross-traffic left turns, installing a traffic light at Maple Avenue and bike lanes along both sides of the street. The raised center median would require people to cross Warner Avenue at a traffic signal where there are crosswalks. This is a significantly safer place to cross than between lights without the median. Left-turn lanes would only be located at traffic lights and would therefore not slow down traffic along Warner Avenue.

2.4 SCOPE OF THIS DRAFT EIR

Based upon the Initial Study and Environmental Checklist Form, the City of Santa Ana staff determined that a Draft EIR should be prepared for the proposed project. The scope of the Draft EIR was determined based upon the City's Initial Study, comments received in response to the NOP, and comments received at the scoping meeting conducted by the City of Santa Ana. Pursuant to Sections 15126.2 and 15126.4 of the State CEQA Guidelines, the Draft EIR should identify any potentially significant adverse impacts and recommend mitigation that would reduce or eliminate these impacts to levels of insignificance.

The information contained in the Project Description establishes the basis for analyzing future project-related environmental impacts. However, further environmental review by the City may be required as more detailed information and plans are submitted on a project-by-project basis.

2.4.1 Less Than Significant Impacts

During the scoping process, six environmental topics were identified as not significantly affected by the proposed project and these are not discussed in detail in this Draft EIR:

- Aesthetics
- Agriculture and Forestry Resources
- Biological Resources
- Mineral Resources
- Public Services
- Recreation



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2.4.2 Potentially Significant Impacts

Eleven environmental topics were been identified as potentially significant and are fully analyzed in this EIR:

- Air Quality
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Transportation and Traffic
- Utilities and Service Systems

2.4.3 Significant Unavoidable Impacts

This Draft EIR identifies two significant and unavoidable adverse impacts, as defined by CEQA, that would result from implementation of the proposed project. Unavoidable adverse impacts may be considered significant on a project-specific basis, cumulatively significant, and/or potentially significant. If the City of Santa Ana, as the lead agency, determines that unavoidable significant adverse impacts will result from the project, the City of Santa Ana must prepare a “Statement of Overriding Considerations” before it can approve the project. A Statement of Overriding Considerations states that the decision-making body has balanced the benefits of the proposed project against its unavoidable significant environmental effects and has determined that the benefits of the project outweigh the adverse effects and, therefore, the adverse effects are considered to be acceptable. The impacts that were found in the Draft EIR to be significant and unavoidable are:

- Transportation and Traffic (impacts during construction)
- Noise (impacts from construction noise)

2.5 INCORPORATION BY REFERENCE

The following documents are incorporated by reference in this Draft EIR, consistent with Section 15150 of the State CEQA Guidelines, and are available for review at the City of Santa Ana.

- Santa Ana General Plan

2.6 FINAL EIR CERTIFICATION

This Draft EIR is being circulated for public review for a period of 45 days. Interested agencies and members of the public are invited to provide written comments on the Draft EIR to the address shown on the title page of this document. Upon completion of the 45-day review period, the City of Santa Ana will review all written comments received and prepare written responses for each comment. A Final EIR (FEIR) will be prepared incorporating all of the comments received, responses to the comments, and any changes to the Draft EIR that result from the comments received. This FEIR will be presented to the City of Santa Ana City Council for potential certification as the environmental document for the project. All

2. Introduction

persons who commented on the Draft EIR will be notified of the availability of the FEIR and the date of the public hearing before the City.

The Draft EIR is available to the general public for review at the following locations:

- City of Santa Ana, City Hall, Clerk of the Council, 20 Civic Center Plaza, 8th Floor, Santa Ana
- City of Santa Ana, Public Works Agency, Ross Annex, 1st floor, 20 Civic Center Plaza, Santa Ana
- Santa Ana Public Library, Main Library, 26 Civic Center Plaza, Santa Ana

2.7 MITIGATION MONITORING

Public Resources Code Section 21081.6 requires that agencies adopt a monitoring or reporting program for any project for which it has made findings pursuant to Public Resources Code 21081 or adopted a Negative Declaration pursuant to 21080(c). Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR or Negative Declaration.

The Mitigation Monitoring and Reporting Program for the proposed project will be completed prior to consideration of the project by the City of Santa Ana City Council.



2. Introduction

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3. *Environmental Setting*

3.1 INTRODUCTION

The purpose of this section is to provide, pursuant to provisions of the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a “description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, from both a local and a regional perspective.” The environmental setting will provide a set of baseline physical conditions which the lead agency will determine the significance of environmental impacts resulting from the proposed project.

3.2 REGIONAL ENVIRONMENTAL SETTING

3.2.1 Regional Location

The City of Santa Ana is in central Orange County and surrounded by the cities of Garden Grove, Orange, Tustin, Costa Mesa, Irvine, Westminster, and Fountain Valley. It is a fully developed city, approximately 10 miles from the Pacific Ocean, and regional access is provided primarily by Interstate 5, State Route 22, and State Route 55. The project area is in the southeastern portion of the City, as shown in Figure 3-1, *Regional Location*.

3.3 LOCAL ENVIRONMENTAL SETTING

3.3.1 Project Location

The City of Santa Ana is proposing to widen Warner Avenue between Main Street on the west and Grand Avenue on the east (see Figure 3-2, *Local Vicinity*). The eastern end of the project area would actually be approximately 600 feet east of Grand Avenue where the widened section of the road transitions to the existing road.

3.3.2 Existing Roadway Conditions

Warner Avenue within the project limits is a four-lane undivided road with variable curb-to-curb and right-of-way (ROW) widths. The cross-sections vary by segment: Warner Avenue from Oak Street to Halladay Street and from Standard Avenue to Grand Avenue has striped turn lanes and other intersections do not. Warner Avenue is a four-lane undivided arterial that runs east and west through the study area. There are currently no striped bicycle lanes, and on-street parking is not allowed. The posted speed limit is 40 to 45 miles per hour, but this limit is reduced to 25 miles per hour between Orange Avenue and Standard Avenue when children are present because of the elementary school. Warner Avenue is classified as a Major Arterial in the City General Plan Circulation Element and Orange County Master Plan of Arterial Highways.

Warner Avenue currently serves about 23,000 to 28,000 vehicles per day through the project area. The following intersections along the Warner Avenue project area have a traffic signal.

- Main Street
- Bike trail
- Halladay Street (south of Warner Avenue)
- Standard Avenue



3. Environmental Setting

- Fire Station
- Grand Avenue

Unsignalized intersections include the following.

North of Warner Avenue:

- Cypress Avenue
- Orange Avenue
- Maple Street
- Oak Street
- Kilson Drive
- Hickory Street
- Halladay Street
- Cedar Street
- Evergreen Street
- Hathaway Street

South of Warner Avenue:

- Orange Avenue
- Maple Street
- Evergreen Street
- SCE substation and RV storage lot access road

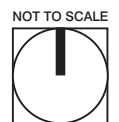
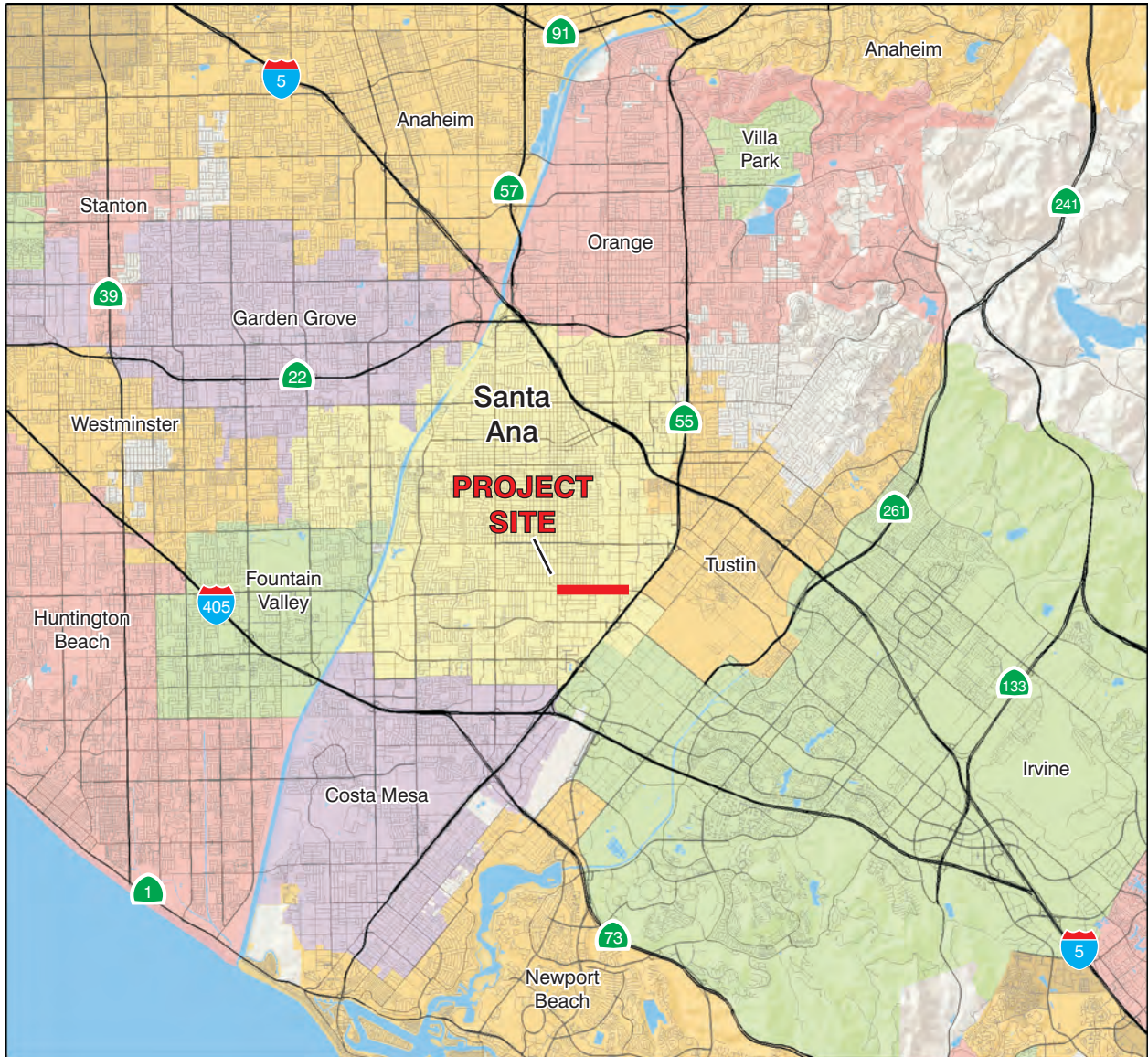
3.3.3 Existing Land Uses

Land uses along Warner Avenue within the project limits include a mixture of commercial/retail, residential, office, industrial, and public facilities (see Figure 3-3a and Figure 3-3b, *Existing Land Use*, for land uses and photo locations, and Figures 3-4, 3-5, and 3-6, Site Photographs). A listing of the land uses are provided below:

- Except for the gas station on the northeast corner of Warner Avenue and Main Street, the entire north side of the street from Main Street to Standard Avenue is lined with homes, which include driveway approaches either along Warner Avenue or adjacent cross streets.
- Homes line the south side of Warner Avenue between Orange Avenue and Rousselle Street and between Halladay Street and Standard Avenue.
- Commercial uses along Warner Avenue include a bank and a small neighborhood shopping center along the south side between Main Street and Orange Avenue. A small neighborhood shopping center is also located on the northwest corner of Main Street and Grand Avenue.
- From Maple Street to Halladay Street, Warner Avenue is fronted along the south side of the street by James Monroe Elementary School, a National Guard armory, and Delhi Park. The armory facility is between the school and the park.
- A mixture of small and large industrial uses line both sides of Warner Avenue from Standard Avenue to Grand Avenue. Some of the larger uses include Cherry Aerospace at 1224 Warner Avenue and Heritage Paper on the southwest corner of the Warner Avenue/Grand Avenue intersection.

3. Environmental Setting

Regional Location

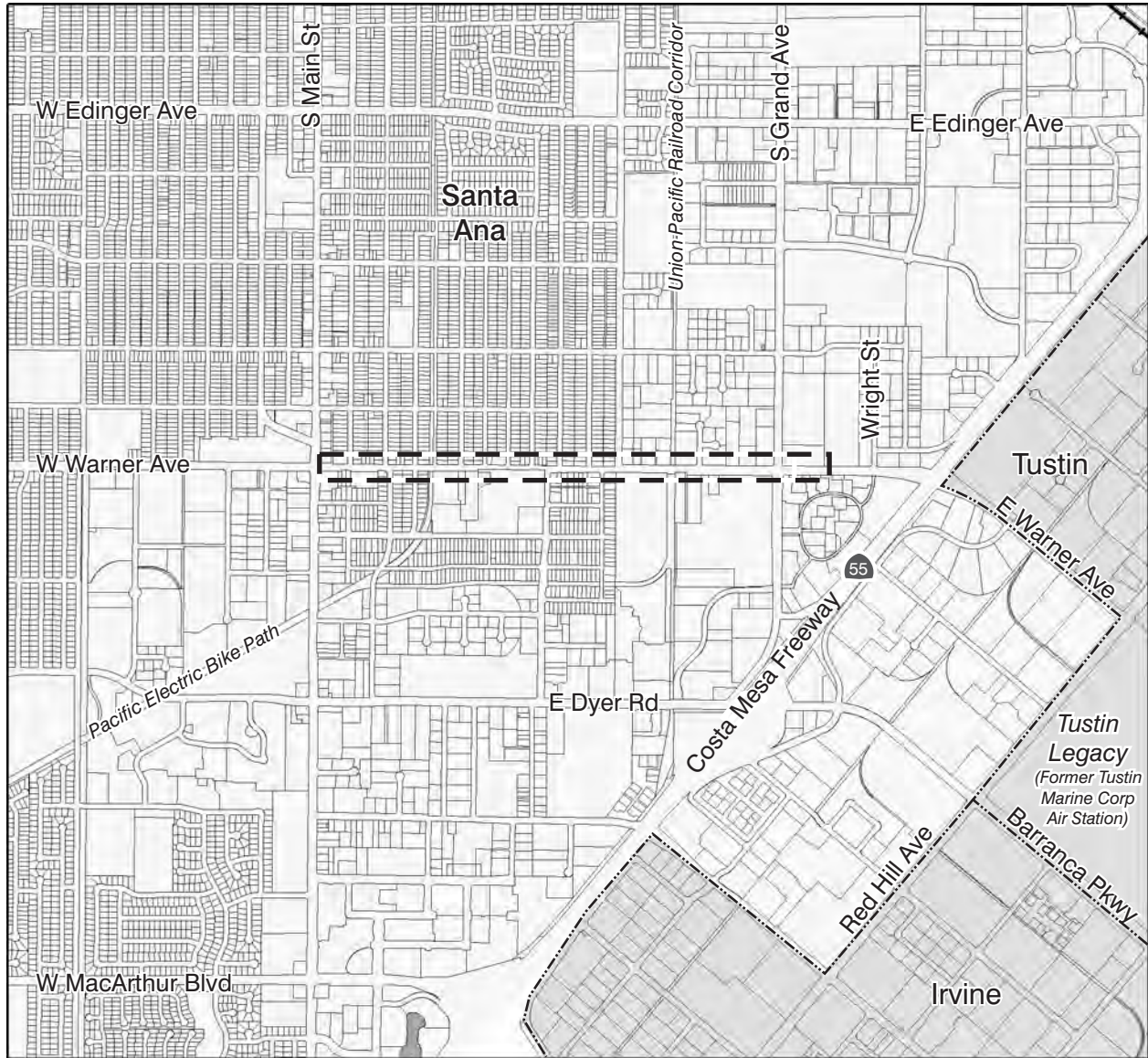


3. Environmental Setting

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3. Environmental Setting

Local Vicinity



- General Project Area
- - - - City Boundary

0 2,000
Scale (Feet)



3. Environmental Setting

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Existing Land Use



See Matchline Below



See Matchline Above

See Matchline Figure 3-3b

1 Photograph Location and Direction

28A Map Numbers to Assist Reader Locating Properties Described in Table 3-1.

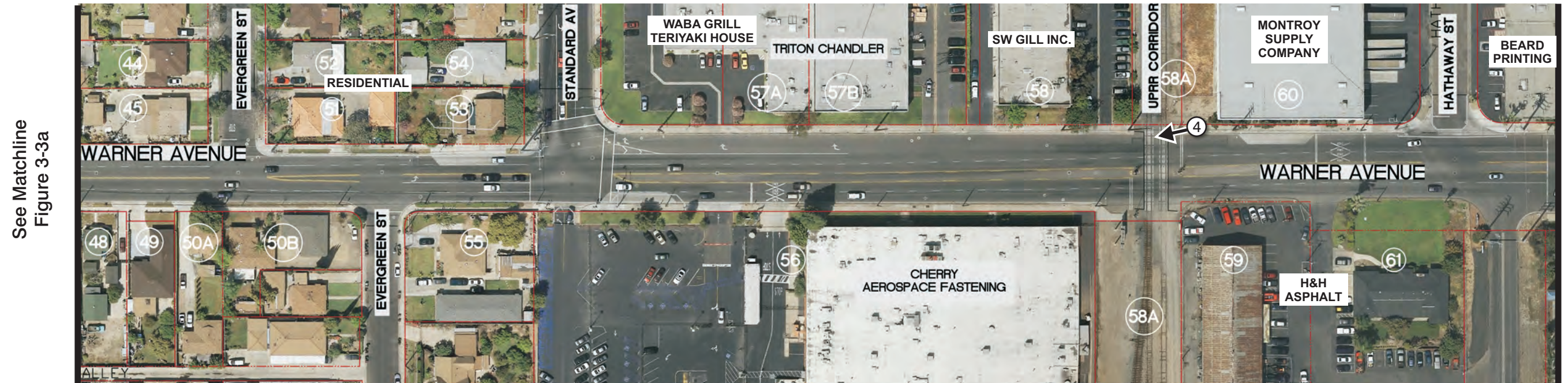


Source: City of Santa Ana 2014

3. Environmental Setting

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Existing Land Use



See Matchline
Figure 3-3a

See Matchline Below



See Matchline Above

① Photograph Location and Direction

28A Map Numbers to Assist Reader Locating Properties Described in Table 3-1.

0 150
Scale (Feet)



Source: City of Santa Ana 2014

3. Environmental Setting

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3. Environmental Setting

Site Photographs



① View looking west from south side of Warner Avenue just west of Orange Avenue. Residential uses are on both sides of the street; the intersection of Warner Avenue and Main Street is in the background.



② View looking east from south side of Warner Avenue just west of Orange Avenue. Residential uses along north side of Warner Avenue are in left background.

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3. Environmental Setting

Site Photographs



③ View looking southwest from intersection of Warner Avenue with Oak Street. Playfield at James Monroe Elementary School is opposite Warner Avenue.



④ View looking southwest from north side of Warner Avenue at Union Pacific Railroad grade crossing showing industrial use along south side of Warner Avenue.

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3. Environmental Setting

Site Photographs



⑤ View looking west from north side of Warner Avenue between Hathaway Street and Grand Avenue. Photo shows the Fire Station No. 9 (blue roof) and signal, Sakoika Farms Building, and SCE substation power lines crossing Warner Avenue.



⑥ View looking west from north side of Warner Avenue just west of intersection of Grand Avenue. Industrial uses line both sides of Warner Avenue.

3. Environmental Setting

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3. Environmental Setting

As shown on Table 3-1 and Figure 3-3, *Existing Land Use*, the land uses along Warner Avenue within the project limits include a mixture of commercial, residential, and industrial uses.

**Table 3-1
Existing Land Use**

Map No.¹	Assessor Parcel Number	Site Address	Existing Land Use	Note	General Plan	Zoning
North Side (Listed from West to East)						
1	403-141-08	2245 S Main St.	General Commercial	Arco Gas Station	GC	C2
3	403-141-09	2246 S Cypress Ave.	Multifamily Residential		LR-7	R2
7	403-142-13	2245 S Cypress Ave.	Single-family Residential		LR-7	R2
8	403-142-14	209 E Warner Ave.	Duplex		LR-7	R2
9	403-142-15	215 E Warner Ave.	Single-family Residential		LR-7	R2
10	403-142-16	219 E Warner Ave.	Single-family Residential		LR-7	R2
11	403-142-17	2246 S Orange Ave.	Single-family Residential		LR-7	R2
12	403-142-18	2242 S Orange Ave.	Multifamily Residential		LR-7	R2
14	403-143-12	2245 S Orange Ave.	Single-family Residential		LR-7	R2
15	403-143-11	2241 S Orange Ave.	Multifamily Residential		LR-7	R2
16	403-143-13	309 E Warner Ave.	Single-family Residential		LR-7	R2
17	403-143-14	315 E Warner Ave.	Single-family Residential		LR-7	R2
18	403-143-15	2246 S Maple St.	Single-family Residential		LR-7	R2
19	403-143-16	2242 S Maple St.	Multifamily Residential		LR-7	R2
23	403-144-12	2245 S Maple St.	Single-family Residential		LR-7	R2
23A	403-144-13	No Address.	Pacific Electric Bike Path (Maple Street Bike Trail)		OS	OS
24A	403-144-11	2243 S Maple St.	Single-family Residential		LR-7	R2
24B	403-144-10	2239 S Maple St.	Single-family Residential		LR-7	R1
25	016-101-29	2247 S Rouselle St.	Single-family Residential		LR-7	R1
26A	016-101-28	2246 S Oak St.	Single-family Residential		LR-7	R1
26B	016-101-12	2242 S Oak St.	Single-family Residential		LR-7	R1
27A	016-102-24	2245 S Oak St.	Single-family Residential		LR-7	R1
27B	016-102-11	2241 S Oak St.	Single-family Residential		LR-7	R1
29A	016-102-23	2246 S Kilson Dr.	Single-family Residential		LR-7	R1
29B	016-102-21	2242 S Kilson Dr.	Single-family Residential		LR-7	R1
30	016-103-22	2245 S Kilson Dr.	Duplex		LR-7	R1
31	016-103-23	705 E Warner Ave.	Single-family Residential		LR-7	R1
33	016-104-10	2241 S Hickory St.	Single-family Residential		LR-7	R1
32	016-104-28	2245 S Hickory St.	Single-family Residential		LR-7	R1
34	016-104-21	809 E Warner Ave.	Single-family Residential		LR-7	R1
35	016-104-29	2244 S Halladay St.	Single-family Residential		LR-7	R1
36	016-105-19	2245 S Halladay St.	Single-family Residential		LR-7	R1
37	016-105-20	905 E Warner Ave.	Single-family Residential		LR-7	R1
38	016-105-21	909 E Warner Ave.	Single-family Residential		LR-7	R1
38A	016-105-22		Open/Vacant	Traffic signal & utility pole	OS	R1
39A	016-214-12	2246 S Cedar St.	Single-family Residential		LR-7	R1
39B	016-214-11	2242 S Cedar St.	Single-family Residential		LR-7	R1
42	016-212-27	2243 S Cedar St.	Single-family Residential		LR-7	R1
43	016-212-26	2247 S Cedar St.	Single-family Residential		LR-7	R1
44	016-212-24	2242 S Evergreen St.	Single-family Residential		LR-7	R1
45	016-212-25	2246 S Evergreen St.	Single-family Residential		LR-7	R1
51	016-211-26	2247 S Evergreen St.	Single-family Residential		LR-7	R1



3. Environmental Setting

**Table 3-1
Existing Land Use**

Map No.¹	Assessor Parcel Number	Site Address	Existing Land Use	Note	General Plan	Zoning
52	016-211-27	2243 S Evergreen St.	Single-family Residential		LR-7	R1
53	016-211-25	2246 S Standard Ave.	Single-family Residential		LR-7	R1
54	016-211-24	2242 S Standard Ave.	Multifamily Residential		LR-7	R2
57A	016-120-52	1209 E Warner Ave.	Restaurant/Offices	Waba Grill Teriyaki House	IND	M1
	016-120-49	1201 E Warner Ave.	Restaurant/Offices		IND	M1
57B	016-120-48	1221 E Warner Ave.	Industrial/Office	Triton Chandelier (retail lighting fixtures)	IND	M1
58	016-120-53	1243 E Warner Ave.	Easement	Parking	IND	M1
	016-120-54	1231 E Warner Ave.	Industrial/Office	SW Gill Inc. (painting and paper hanging contractors)	IND	M1
58A	872-30-13F-173	No Address.	Union Pacific Rail Road (UPRR) tracks	Railroad	OS	O
60	014-281-19	1301 E Warner Ave.	Industrial/Office	Montroy Supply Co. (advertising sign supplies)	IND	M1
62	014-281-12	1331 E Warner Ave.	Industrial/Office	Beard Printing (digital, offset printing, and graphics)	IND	M1
63		1335 E Warner Ave.	Industrial/Office	National Electric Alloys (expansion controlled alloy supplies and distribution)	IND	M1
South Side (Listed from West to East)						
2	016-031-54	2301 S. Main St.	Bank	Wells Fargo Bank	GC	C2
	016-031-38	2301 S. Main St.	Bank	Parking lot	GC	C2
4	016-031-37	124 E Warner Ave.	Duplex		GC	C1
5	016-031-32	128 E Warner Ave.	Duplex		GC	C1
6A	016-031-33	204 E Warner Ave.	Retail Center	Oli's Bakery Building	GC	C1
6B	016-031-50	216 E Warner Ave.	Retail Center	Shopping Center (hair salon, market, laundry)	GC	C1
6C	016-031-51	222 E Warner Ave.	Retail Center	El Taco Vaquero	GC	C1
13	016-031-40	230 E Warner Ave.	Single-family Residential		LR-7	R1
20	016-034-01	302 E Warner Ave.	Single-family Residential		LR-7	R1
21	016-034-26	310 E Warner Ave.	Single-family Residential		LR-7	R1
22	016-035-01	402 E Warner Ave.	Single-family Residential		LR-7	R2
22A	016-090-26	417 E Central Ave.	Institutional	James Monroe Elementary School	INS	O
23A	016-035-14	No Address.	Pacific Electric Bike Path (Maple Street Bike Trail)	Pacific Electric Bike Path is an		

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**Table 3-1
Existing Land Use**

Map No.¹	Assessor Parcel Number	Site Address	Existing Land Use	Note	General Plan	Zoning
				off-road, paved trail that extends from the Santa Ana River at MacArthur Boulevard on the south approximately three miles to Chestnut Avenue on the north		
28A	016-090-25 016-090-24 016-090-21	612 E Warner Ave.	Military	California National Guard Armory	OS	O
28B	016-090-22	2314 S Halladay St.	Open Space	Delhi Park and Community Center	OS	O
40	016-133-44	2305 S Halladay St.	Multifamily Residential		LR-7	R2
41	016-133-33	910 E Warner Ave.	Multifamily Residential		LR-7	R2
46	016-133-32	1002 E Warner Ave.	Multifamily Residential		LR-7	R2
47	016-133-31	1008 E Warner Ave.	Multifamily Residential		LR-7	R2
48	016-133-29	1012 E Warner Ave.	Multifamily Residential		LR-7	R2
49	016-133-47	1016 E Warner Ave.	Multifamily Residential		LR-7	R2
50A	016-133-43	1020 E Warner Ave.	Multifamily Residential		LR-7	R2
50B	016-133-28	1106 E Warner Ave.	Single-family Residential		LR-7	R2
55	016-131-18	2301 S Evergreen St.	Single-family Residential		LR-7	R2
56	016-150-09	1224 E Warner Ave.	Industrial/Office	Cherry Aerospace, SPS Fastener Division, a PCC Company (design/manufacture of fastening systems for aerospace)	IND	M1
58A	872-30-13F-19	No Address.	Union Pacific Railroad (UPRR) tracks and Beeson Lane east of tracks	Railroad	OS	O
59	016-150-74	1312 E Warner Ave.	Industrial	Hardy & Harper Asphalt Paving Contractor (former Sakioka Farms warehouse building)	IND	M1



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**Table 3-1
Existing Land Use**

Map No.¹	Assessor Parcel Number	Site Address	Existing Land Use	Note	General Plan	Zoning
61	016-150-52	1312 E Warner Ave.	Industrial/Office	Hardy & Harper Asphalt Paving Contractor (former residential building)	IND	M1
		No Address.	Access road for RV Storage Depot (1316 E Warner Ave.) and the SCE power substation (1318 E Warner Ave.)			
64	016-150-70	1320 E Warner Ave.	Fire Station	City of Santa Ana Fire Station No. 9	IND	M1
65	016-150-71	2400 S Grand Ave.	Industrial/Office	Heritage Paper (industrial, retail and personal packaging)	IND	M1
66	016-221-01	1504 E Warner Ave.	Office	Parking lot along Warner Ave.	PAO	SD8
	016-221-31	1500 Brookhollow Dr.	Office	Parking lot along Warner Ave.	PAO	SD8
	016-221-30	1502 E Warner Ave.	Office	Parking lot along Warner Ave.	PAO	SD8
	016-221-07	1530 E Warner Ave.	Office	Parking lot along Warner Ave.	PAO	SD8
	016-221-08	1532 E Warner Ave.	Office	Parking lot along Warner Ave.	PAO	SD8

Notes:

Zoning (see Figure 3-7, *Zoning Districts*)

R2 (Two-Family Residence)
 R1 (Single-Family Residence)
 C2 (General Commercial)
 C1 (Community Commercial)
 M1 (Light Industrial)
 O (Open Space)
 SD8 (Specific Development)

General Plan (see Figure 3-8, *General Plan Designations*)

LR-7 (Low Density Residential)
 GC (General Commercial)
 OS (Open Space)
 IND (Industrial)
 PAO (Professional and Administrative Office)
 INS (Institutional)

¹ See Chapter 4, *Project Description*, Figure 4-1a and Figure 4-1b.

Most driveways and curb returns within the project limits do not meet Americans with Disabilities Act (ADA) clearance and slope requirements.

Pedestrian Mobility

There are sidewalks along both sides of Warner Avenue. In some areas the sidewalk is directly adjacent to the street, and parkways separate the sidewalk from the curb in other locations. Sidewalk widths vary from four to ten feet depending on the location; however, some sections restrict pedestrian space to between three to five feet wide between power poles and landscape shrubs or walls.

Bicycle Mobility

Bicycle lanes in the City vary in width from four feet to seven feet depending on the available ROW. The City has established the following two bikeway classifications, which generally correspond with the Orange County Transportation Authority (OCTA) bikeway classifications:

- **Class I Bikeway (Shared-use paths, bicycle paths, multi-use paths).** Provides for bicycle travel on a ROW completely separated from the street. Off-street paths are paved facilities on a separate ROW from roadways, and are usually shared by bicyclists and pedestrians. Shared paths are used for multiple purposes by many people with diverse experiences and levels of ability. Bike paths are generally constructed in corridors not served by the street network and where vehicular cross-flows are minimized.
- **Class II Bikeway (Bike lanes).** Provides for a striped lane for one-way travel within the street ROW. Bicycle lanes are on-street facilities that use painted stripes and stencils to delineate the ROW assigned to bicyclists and motorists, and to provide for more predictable movements by each. The bicycle lane is for exclusive use by bicyclists. Bicycle lanes can be striped adjacent to the curb where no parking exists, or to the left side of on-street parking lanes, and include pavement stencils.

Bike lanes are not provided along Warner Avenue within the project limits. A Class I bikeway runs north-south throughout the study area and crosses Warner Avenue about 150 feet east of Maple Street (see Figure 3-3, *Existing Land Use*) The bicycle path intersection at Warner Avenue is signalized, but remains green for motor vehicle traffic unless the button is pushed by a pedestrian or bicyclist. The bicycle path signal does not operate on a regular cycle.



Fire Station Signal

A fire station signal is on Warner Avenue about 700 feet west of the Grand Avenue intersection. Similar to the pedestrian/bicyclist-activated signal, it remains green for traffic on Warner Avenue unless activated by an emergency vehicle. The fire station signal does not operate on a regular cycle.

Railroad

A Union Pacific Railroad (UPRR) Railroad corridor crosses Warner Avenue between Standard Avenue and Grand Avenue. This freight corridor includes tracks that are a spur off the Metrolink railroad corridor, which serves the many industrial uses along this spur within the City of Santa Ana. The existing crossing at Warner Avenue is gated with crossings occurring approximately one to two times a day.

Transit

Warner Avenue within the project limits is served by three local OCTA bus routes: Routes 72 and 463, which run along Warner Avenue between Main Street and Grand Avenue; and Route 55, which runs between Halladay Street and Grand Avenue. OCTA Route 53 operates on Main Street. Route 59 operates on Grand Avenue. Bus stops with concrete bus pads are provided at the following locations (listed from west to east):

- Eastbound far side of the Main Street intersection
- Westbound far side of the Maple Street intersection
- Eastbound mid block between Maple and Oak Streets

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- Westbound far side of Halladay Street intersection
- Eastbound near side of Halladay Street intersection
- Eastbound and Westbound far side of Standard Avenue intersection
- Westbound between UPRR corridor and Hathaway Street
- Westbound and eastbound far side of Grand Avenue intersection

3.3.4 Storm Drains

Major drainage facilities within the project limits include:

- Curbs, gutters, and underground storm drains.
- 27-inch-diameter storm drain runs along the north side of Warner Avenue from Standard Avenue and connects to the 60-inch storm drain at Rousselle Street.
- 60- to 66-inch-diameter storm drain runs along the north side of Warner Avenue between Rousselle Street and Main Street and continues westerly along Warner Avenue.
- A 7-foot by 6-foot reinforced concrete box culvert runs along the north side of Warner Avenue from a junction structure from Grand Avenue to the UPRR corridor. Just east of the railroad tracks, the culvert turns to the north and continues along the east side of the railroad ROW.

3.3.5 Utilities

A variety of wet and dry utilities exist within the project limits, both underground and overhead. Major wet and dry utilities include the following.

Wet Utilities

- An 18-inch Metropolitan Water District water line runs along the south side of Warner Avenue.
- A 16-inch water line runs along the north side of Warner Avenue from Main Street to Rousselle Street, where it transitions to the south side, increases to a 20-inch line, and continues east past Grand Avenue.
- An 8-inch sewer line runs along the center of the street from Main Street to Orange Avenue, where it turns south and continues down Orange Avenue.

Dry Utilities

- 66 kilovolt (kV) overhead power lines run north to Warner Avenue from the Southern California Edison substation south of Warner Avenue and just east of the UPRR corridor. At Warner Avenue, the lines run both east and west along the north side of Warner Avenue, with the power poles on the north sidewalk. Street lights are mounted on the lower portions of the power poles, on traffic signal poles and on separate light standards. Telephone lines are also mounted on the power poles.
- Overhead cable lines (Time Warner Cable) run along the south sidewalk within the project limits.
- A 4-inch gas line (Southern California Gas Company) runs under the roadway and north sidewalk (depending on the segment) from Main Street to just east of Kilson Drive.

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- An AT&T telecommunications line runs under the south sidewalk from Main Street to Standard Avenue. An MCI/Verizon telecommunications line runs under the south side of the street from Main Street to just east of Cypress Avenue.

3.4 SURROUNDING LAND USE

Land uses surrounding the Warner Avenue Widening project site are similar to urban land uses adjacent to Warner Avenue and include commercial, industrial, institutional (schools and churches), parks, and residential uses.

3.5 EXISTING ZONING AND GENERAL PLAN LAND USE DESIGNATIONS

The City's General Plan establishes a road map to guide growth and development in the City by designating land uses and implementing goals and policies. It provides a long-term vision for the City.

Zoning is a device used by the City to designate permitted uses of land based on mapped zones that separate one set of land uses from another. Zoning regulates building height, lot coverage, and similar characteristics, or some combination of these for land uses throughout the City (Santa Ana Zoning Map 2007; Municipal Code 2012).

Although there are general plan and zoning designations for each parcel in the City, some of the actual land uses do not comply with the maps, such as a residential house on a parcel designated for commercial uses; these are minor inconsistencies and are typically conditionally permitted.

Warner Avenue is a public roadway and does not have a specific zoning or general plan land use designation. The City of Santa Ana General Plan Circulation Element classifies the roadway as a Major Arterial (Santa Ana Circulation Element 1998). The zoning and general plan land use designations for parcels fronting Warner Avenue between Main Street and Grand Avenue include the following (Santa Ana Zoning Map 2007; Santa Ana Land Use Element 1998).



Zoning (see Figure 3-7, *Zoning Districts*)

- R2 (Two-Family Residence)
- R1 (Single-Family Residence)
- C2 (General Commercial)
- C1 (Community Commercial)
- M1 (Light Industrial)
- O (Open Space)
- SD8 (Specific Development)

General Plan (see Figure 3-8, *General Plan Designations*)

- LR-7 (Low Density Residential)
- GC (General Commercial)
- OS (Open Space)
- IND (Industrial)
- PAO (Professional and Administrative Office)
- INS (Institutional)

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Santa Ana Neighborhoods

The City of Santa Ana is divided into 64 neighborhood associations (see Figure 3-9, *Santa Ana Neighborhoods*). A portion of the project site is in the Delhi Neighborhood: Warner Avenue between Main Street and Standard Avenue.

The City has a number of neighborhoods with historic resources, including French Park, Floral Park, Wilshire Square, West Floral Park, Washington Square, and Heninger Park. The City is also known for its original Mexican barrios, including the Logan, Lacy, Delhi, and Santa Anita neighborhoods, some of which date back to the later 1880s (Santa Ana Housing Element 2009). The Delhi Neighborhood was established around 1910 and is approximately 2.5 miles southeast of downtown Santa Ana. Warner Avenue (formerly Delhi Road) today forms the central east–west spine of the community.

“For many people who grew up in Delhi, bonds to the neighborhood began to form almost a century ago”. Some remember tales of relatives who settled there after fleeing the Mexican Revolution. Other families followed the railroad for jobs, moving in because it was one of the few places where Mexicans could buy land and plant lasting roots. Along with the immigrants who settled in neighborhoods like Placita Santa Fe in Placentia and El Modena near Orange, the early residents of Delhi spawned a Latino community that now comprises nearly a third of Orange County’s people (OC Register 2001).” Currently more than 100 names—from the Alcarazes to the Zaragozas—are engraved on a plaque for display inside the Delhi Community Center constructed in 2001.

Delhi is among a number of Mexican-American neighborhoods that formed in Orange County around the turn of the century and are still populated by the descendants of early founders.

The 1920 census counted about 500 people living in Delhi. Adults listed their birthplaces as Mexico, and most of their children were born in California. They all spoke Spanish, and a number of families reported owning their own homes, free and clear.

The Delhi of today resembles the old neighborhood. Small houses surround the elementary school, Our Lady of Guadalupe Church and the Delhi Community Center. A remnant of original residents still lives there, and many new Mexican immigrants have moved in.

Delhi’s history comes from the recollections of the people who grew up there. Although the neighborhood is one of the oldest in the city, it’s not featured in any books on Santa Ana history. But stories of what brought people to the area have been passed through the generations.

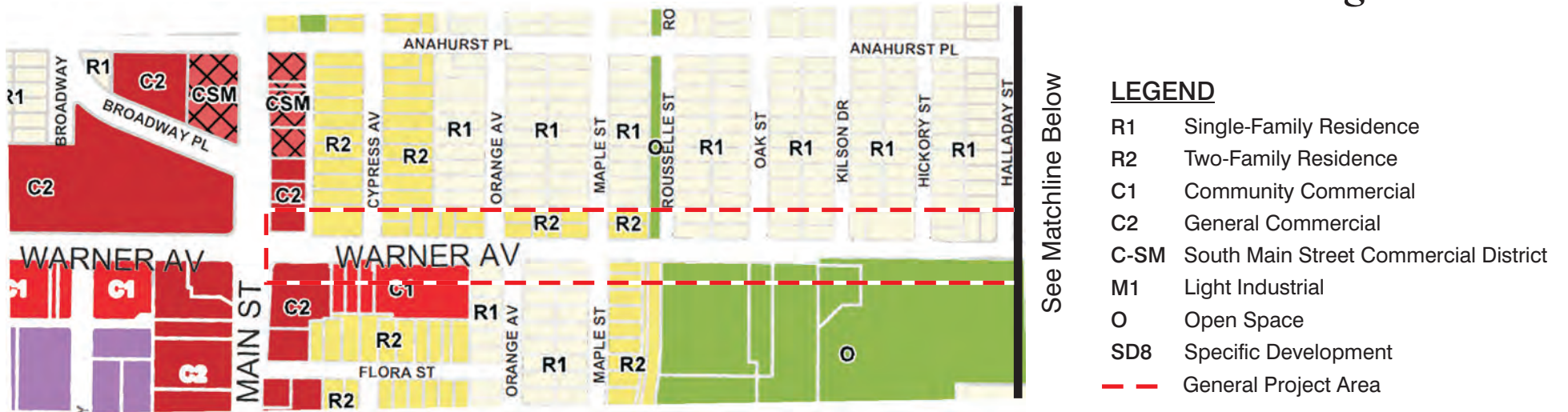
More information about the Delhi Neighborhood can be found in Chapter 5.2, *Cultural Resources*, Chapter 5.7, *Land Use and Planning*, and Appendix E, *Historical Resource Survey Report*.

3.6 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed where they are significant. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great a level of detail as that necessary for the project alone. Section 15355 of the Guidelines defines cumulative impacts to be “...two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Cumulative impacts represent the change caused by the incremental impact of a project when added to other proposed or committed projects in the vicinity.

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Zoning Districts



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General Plan Land Use Designations

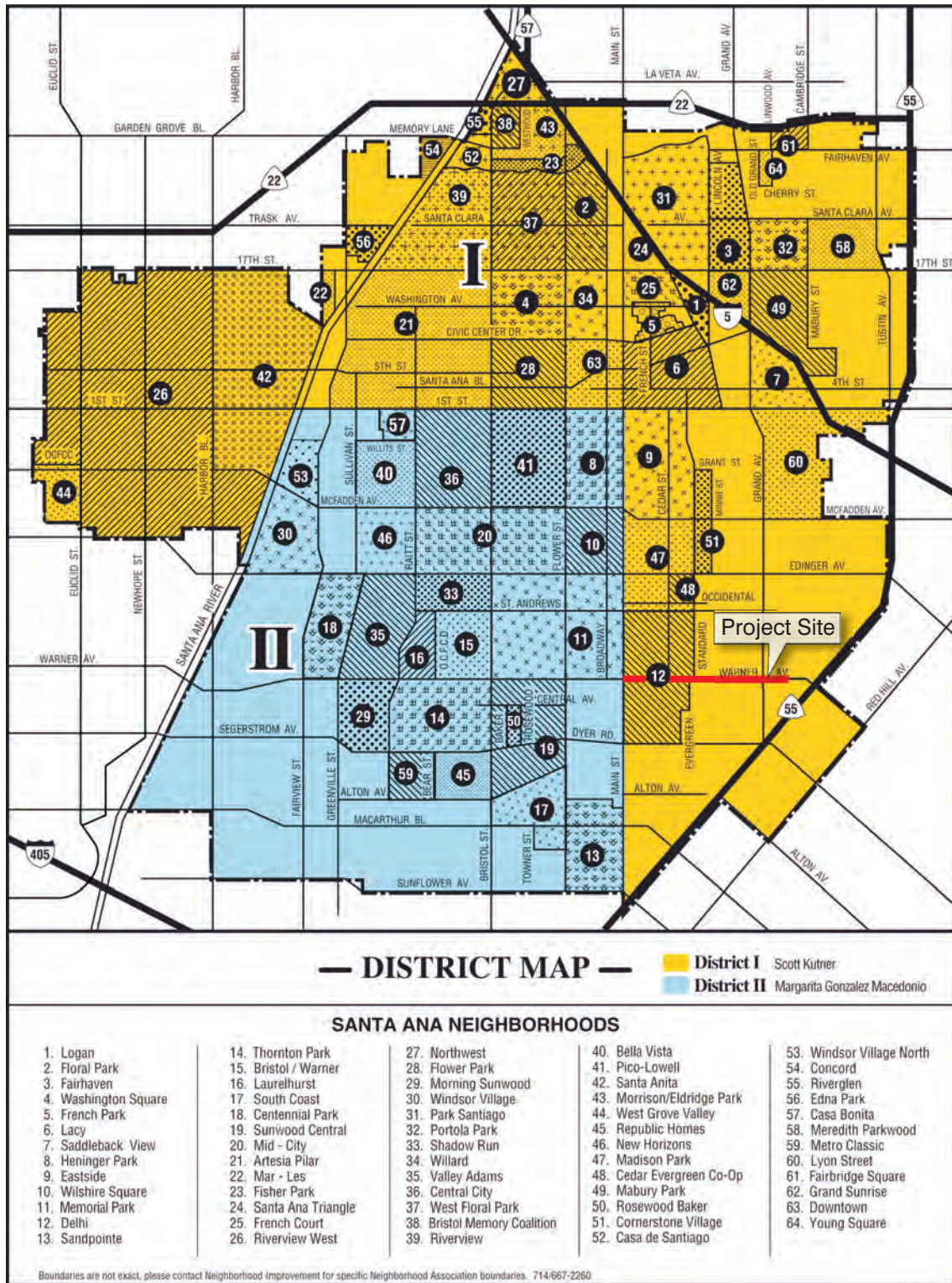


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Santa Ana Neighborhoods



Source: City of Santa Ana, July 2010

Warner Avenue Widening from Main Street to Grand Avenue Draft EIR

PlaceWorks • Figure 3-9

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The CEQA Guidelines (Section 15130 [b][1]) state that the information utilized in an analysis of cumulative impacts should come from one of two sources, either:

- 1) A list of past, present and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency; or
- 2) A summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions.

The cumulative impact analyses in Chapter 5, *Environmental Analysis*, of this Draft EIR uses a combination of both Method 1 and Method 2. The approach is discussed in each respective topical section. Following is a discussion of related projects as used to analyze cumulative impacts under Method 1.

The related projects list was compiled from several sources: City of Santa Ana list of past, present, approved and reasonably foreseeable projects in the city (Santa Ana 2013); the Draft Relocation Impact Report prepared by Overland, Pacific & Cutler that included a list of public work projects (see Appendix K); and the Traffic Study prepared by IBI Group.

1. Alton Overcrossing. The four-lane overcrossing will pass over SR-55 and connect the Alton Avenue segment at Standard Avenue in Santa Ana with Alton Parkway at Daimler Street in Irvine. Drop ramps will be provided from the overcrossing facility to the SR-55 high occupancy vehicle (HOV) lanes.
2. Grand Avenue Widening from First Street to Fourth Street
3. Grand Avenue Widening from Fourth Street to Seventeenth Street
4. Bristol Street Widening. The 3.9-mile segment of Bristol Street between Warner Avenue and Memory Lane will be widened from four undivided lanes to six divided lanes.
5. The Fixed Guideway Project
6. Grand Avenue Grade Separation
7. Santa Ana Blvd Extension. This project extends Santa Ana Boulevard as a four-lane primary arterial from Raitt Street to the west along the Pacific Electric ROW to SR-22.
8. Santa Ana Boulevard Grade Separation
9. Seventeenth Street Grade Separation
10. SR-55 Widening: I-5 to I-405
11. I-5 Widening: SR-57 to SR-55
12. Tustin Ranch Road Extension. This project will extend Tustin Ranch Road as a six-lane major arterial between Irvine Center Drive and Warner Avenue. This improvement will occur in the City of Tustin.
13. Warner Avenue Extension. Warner Avenue will be extended as a six-lane major arterial between Tustin Ranch Road and Red Hill Avenue. This improvement will occur in the City of Tustin.



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14. 1st and Cabrillo Towers. A 6-acre mixed-use project, with 320 units in 3 buildings. A 24-story tower will house 193 of the units, and the remaining units will be housed in 2 midrise buildings. There will be approximately 15,000 square feet of retail and restaurant space.
15. 4th District Court of Appeal. The new 4th District Court of Appeal building at the northwest corner of Santa Ana Boulevard and Ross Street was completed in 2009.
16. Bowers Museum Expansion. The Dorothy and Donald Kennedy Wing has more than doubled the museum's exhibit space and created a 300-seat auditorium, two 5,000-square-foot galleries, and a central atrium designed to host special events for up to 500 guests.
17. City Place. City Place is an urban-flavored village of townhomes, lofts, and retail at Main Street and Memory Lane, across from Westfield MainPlace and next to Santiago Park. In addition to three residential communities—The Lofts, The Courtyards, and The Park—second phase will develop City Place Sky Lofts, a 33-story residential tower with 350 new units.
18. Corinthian College. Corinthian College will occupy a four-story, 40,000 square-foot office building at Santa Ana Blvd and Ross Street. The school will offer degrees in the technical field and specialty trades that will complement professional services found in the downtown.
19. Discovery Science Center. Expansion plans include 30,000 square feet of exhibit area, office and warehouse space, and a parking structure.
20. Homeplace Shopping Center. Homeplace Shopping Center is west of Tustin Avenue on 17th Street. The center will feature an approximately 21,000-square-foot food court with patio space to accommodate the large professional and medical daytime population. Tenants will include Camille's Sidewalk Café, Chipotle, L&L Hawaiian BBQ, Pasta Gina, Upper Crust Pizza and more.
21. MainPlace. This 1.1 million-square-foot mall will be undergoing another major expansion and renovation. Major retailer J.C. Penney's recently opened in a fully renovated 145,000 square foot building that had been vacated. New tenants also include Chico's, Coldwater Creek & El Torito Restaurant.
22. Olson Lofts. Through a public/private partnership, the Santa Ana Redevelopment Agency and The Olson Company constructed 70 live-work lofts in Santa Ana's Artists Village. The City is currently reviewing plans for the final phase—Sycamore Street Lofts.
23. One Broadway Plaza. This "Class A" office tower will be Orange County's tallest building at 37 stories.
24. Promenade Pointe. Promenade Pointe near MacArthur Place will include 2 residential towers, an 8-story loft building, and an 18-story high-rise tower, with a combined total of 278 condominium units.
25. The Retreat. A project of luxury single-family homes near Floral Park. Houses range from approximately 3,100 to 4,400 square feet in size, with a minimum lot size of 6,000 square feet.
26. Santa Ana Auto Mall. The Community Redevelopment Agency embarked on this business retention and expansion effort several years ago to generate new jobs and revenues for the community. Crevier BMW new edition consists of over 170,000 square feet of service, sales and office space and

3. Environmental Setting

a six tier parking structure. Honda's expansion is in the planning stages. Recent renovations to the auto mall's interior including new signage and landscaping.

27. Santa Ana Residential Village. An 8-acre mixed-use project housing 423 residential units with 3- to 8-story live/work townhomes and flats. It will also be the home to 150 condominium units within a 24-story high-rise tower. Units will range from 700 to 2,000 square feet. Among the housing there will be 8,000 square feet of retail and restaurant space.
28. Santiago Street Lofts. Across the street from the Santa Ana Train Depot, this project consists of 108 loft-style units.
29. SKYLINE at MacArthur Place. Recently completed Skyline at MacArthur Place is composed of two 25-story towers.

The Orange County Transportation Analysis Model (OCTAM 3.4) network for 2035 also includes the following improvements:

- Freeway improvement projects (Renewed Measure M Early Action Plan)
- Transit Improvements (Balanced Alternative of OCTA's Long Range Transportation Plan (LRTP))



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4. Project Description

4.1 INTRODUCTION

Warner Avenue is a regionally significant east-west four-lane roadway through the City. The roadway varies between four and six lanes and links the City with the neighboring cities of Fountain Valley and Tustin. The City of Santa Ana (lead agency) is proposing to widen Warner Avenue between Main Street and Grand Avenue, from its existing four lanes to six lanes. The proposed improvements would also include on-street Class II bike lanes, a raised landscaped median, acquisition of partial and full properties, and the relocation of existing utilities along the project segment of Warner Avenue. The goal of the proposed project is to relieve existing and future projected congestion through the corridor due to current and anticipated growth trends and future traffic volumes.

4.2 PROJECT BACKGROUND

4.2.1 Tustin Legacy Project

The environmental and engineering effort for Warner Avenue originated as a mitigation measure for the proposed Tustin Legacy project, which would redevelop the former Tustin Marine Corps Air Station (MCAS). The air station is being converted from its former military use to mixed-use commercial, residential, institutional, and industrial uses. As part of the Tustin Legacy project, Warner Avenue would be extended as a six-lane major arterial from its existing terminus at Red Hill Avenue east through the former air base to Tustin Ranch Road. The environmental documents prepared by the City of Tustin for the Tustin Legacy project identified significant traffic impacts to Warner Avenue due to traffic generated by the proposed redevelopment.



4.2.2 Consistency with Roadway Design Standards

City of Santa Ana

Warner Avenue is designated a major arterial in the City's General Plan Circulation Element (GPCE) Master Plan of Streets and Highways (Santa Ana 1998). A major arterial is defined by the City as a six-lane, divided, 120-foot-wide arterial (GPCE 1998). As shown in Table 4-1, a four-lane arterial is designed to accommodate up to 30,000 vehicles per day if divided (center median) and 20,000 vehicles if undivided.

**Table 4-1
Roadway Segment Level of Service**

Street Classification	Lane Configuration	A	B	C	D	E	F
Principal Arterial	8 Lanes Divided	45,000	52,500	60,000	67,500	75,000	>75,000
Major Arterial	6 Lanes Divided	33,900	39,400	45,000	50,600	56,300	>56,300
Primary Arterial	4 Lanes Divided	22,500	26,300	30,000	33,800	37,500	>37,500
Secondary Arterial	4 Lanes Undivided	15,000	17,500	20,000	22,500	25,000	>25,000
Commuter Street	2 Lanes Undivided	7,500	8,800	10,000	11,300	12,500	>12,500

Source: IBI 2013

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Within the study area, Warner Avenue has a median (striped not raised) in some segments and no median in other segments; therefore, this four-lane section of Warner Avenue is designed to accommodate up to 20,000 vehicles per day.

Existing traffic volumes between Main Street and Halladay Street are currently 28,640 vehicles per day, and 23,814 vehicles per day between Standard Avenue and Grand Avenue (counts taken by IBI Group on June 13, 2012). By the year 2035 estimated traffic volumes along this segment are forecast to be between 30,000 to 31,900 vehicles per day. Both the existing and future daily traffic volumes exceed the acceptable level of service for a four-lane undivided roadway.

The City of Santa Ana also proposes to implement a Class II bikeway on Warner Avenue for the full distance between Main Street and Grand Avenue. The City's General Plan Circulation Element Bikeway Master Plan calls for a Class II on-street bikeway along Warner Avenue from Flower Street to the existing Class I bike trail that crosses Warner Avenue in the vicinity of Rousselle Street.

County of Orange

The OCTA Master Plan of Arterial Highways (MPAH) also designates Warner Avenue a major arterial—a six-lane, divided 120-foot-wide arterial designed to accommodate 45,000 to 60,000 vehicles per day. The MPAH establishes a countywide roadway network intended to ensure coordinated transportation system development among local jurisdictions in Orange County (OCTA 2011a).

Widening Warner Avenue from four to six lanes between Main Street and Grand Avenue would make this section of the street consistent with the City GPCE and the county MPAH.

The California Complete Streets Act (AB 1358)

On September 30, 2008, Governor Arnold Schwarzenegger signed Assembly Bill 1358, the California Complete Streets Act. The act states, "In order to fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health by encouraging physical activity, transportation planners must find innovative ways to reduce vehicle miles traveled (VMT) and to shift from short trips in the automobile to biking, walking and use of public transit" (AB 1358, Chapter 657, Statutes 2008).

The legislation impacts local general plans by adding the following language to Government Code Section 65302(b)(2)(A) and (B):

- (A) Commencing January 1, 2011, upon any substantial revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.
- (B) For the purposes of this paragraph, "users of streets, roads, and highways" means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.

The City is in the process of updating the GPCE and will comply with the complete streets principles (planning for all modes) as required by the Complete Streets Act. Following the widening, Warner

Avenue would be consistent with the circulation element and therefore would comply with the policies outlined in the Complete Streets Act.

4.2.3 Road Improvement Design Evolution

The City of Santa Ana considered a range of potential improvement alternatives in order to choose one that best meets the project's objectives, while minimizing impacts to the community, environment, and the existing infrastructure (overhead and underground utilities). In defining the scope of the proposed improvements, the following major design variables were considered:

- **Arterial Street Typical Cross-Section.** According to the City of Santa Ana Standard Plan 1103A, two standard roadway classifications can be applied for a six-lane divided arterial. The City's general plan shows this segment of Warner Avenue as a Major Arterial. A Major Arterial is one of the City's various standard classifications. It includes a 120-foot total right-of-way (ROW) width and provides a 14-foot raised median, 10-foot sidewalks, and 43-foot curb-to-curb widths in each direction. The 43-foot paved areas allow for three 12-foot lanes and a 7-foot bike lane in each direction. The original City project designs were developed to comply with the standard 120-foot cross-section.
- **Roadway Alignments.** As with customizing the ROW, the City evaluated several roadway alignment alternatives in an effort to minimize parcel take. Alternatives were developed for various cross-sections with the following alignment options:
 - Maintaining the existing roadway center line and widen the existing street on both sides. This results in ROW and construction impacts to both sides of the existing street.
 - Maintain the existing ROW line on the north or south side of the street, which restricts ROW impacts to one side only. The ROW could vary by segment along the corridor depending on the nature of the properties lining the street.



Several street sections and alignment variables were considered collectively as an initial step in the scoping of the proposed improvements for this project.

Initially 100-foot South, 120-foot North, 120-foot South and 120-foot Center was considered. The 100-foot South ROW footprint was discarded because it would not have enough width for a bike lane and would not comply with the MPAH and Santa Ana General Plan Circulation Element. In an effort to reduce ROW impacts, 120-foot Center was eliminated, and 120-foot South and 120-foot North were reduced to 110-foot South and 110-foot North, respectively. Then, in an effort to minimize impacts to public facilities (James Monroe Elementary School, fire station, Delhi Park, and National Guard armory), the 110-foot North alignment was selected as the preferred alignment. The City of Santa Ana has a low ratio of park, recreation, and open space to population compared to surrounding cities; therefore, reduction of impacts to these public facilities was essential. Project alternatives are analyzed in Chapter 7 of this Draft EIR.

4.3 PROJECT DESCRIPTION

4.3.1 Project Objectives

The following objectives have been established for the Warner Avenue Widening from Main Street to Grand Avenue Project and will aid decision makers in their review of the project, associated environmental impacts, and project alternatives.

4. Project Description

1. Design and construct Warner Avenue to be consistent with the City's General Plan Circulation Element and County of Orange Master Plan of Arterial Highways (MPAH) designation as a major arterial.
2. Alleviate traffic congestion and delays within the Warner Avenue project limits.
3. Provide roadway capacity to accommodate existing and future traffic volumes.
4. Increase vehicular safety and reduce accidents by removing left turn hazards.
5. Comply with the Complete Streets Act by providing safe and accessible travel for bicyclist, pedestrians, and wheelchairs through new bike lanes and wider parkway and sidewalks.
6. Minimize property acquisition including public facilities.
7. Improve stormwater drainage and water quality.

4.3.2 Project Characteristics

"Project," as defined by the CEQA Guidelines, means "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1)...enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100–65700" (14 Cal. Code of Reg. 15378[a]).

4.3.3 Roadway Configuration

The proposed project involves the widening of an approximately one-mile section of Warner Avenue from Main Street to Grand Avenue from its current four lanes to six lanes (see Figure 4-1a and Figure 4-1b, *Proposed Road Alignment*).

To meet the project objectives, a reduced ROW option was developed. The currently proposed project reflects two modified cross-sections: the majority of the roadway would be a modified 110-foot ROW, and a small portion would be a 106-foot ROW. Figure 4-2, *Proposed Street Cross Section* shows the 110-foot ROW street cross section. The 110' modified cross section consists of six 11-foot lanes, 5-foot bike lanes, 14-foot raised median, and 10-foot sidewalks (6-foot for sidewalk and 4-foot for parkway). The 106-foot cross section between Standard Avenue and the UPRR corridor, consists of six 11-foot lanes, 5-foot bike lanes, 10-foot raised median, and 10-foot sidewalks (6' for sidewalk and 4-foot for parkway). The project would include the following changes to existing traffic lane geometry.

Flower Street and Warner Avenue

The intersection of Flower Street and Warner Avenue would be improved to provide a dedicated westbound right turn lane, resulting in one left turn lane, two through lanes, and one right turn lane in the westbound direction.

Proposed Alignment



See Matchline Below



See Matchline Above

Matchline
See Figure 4-1b

LEGEND

- Full Acquisition
- Partial Acquisition
- Sidewalk and Parkway
- Median Landscape
- Existing Property Lines (Per Record Maps and Parcel Maps)

28A Map Numbers to Assist Reader Locating Properties Described in Table 4-2.

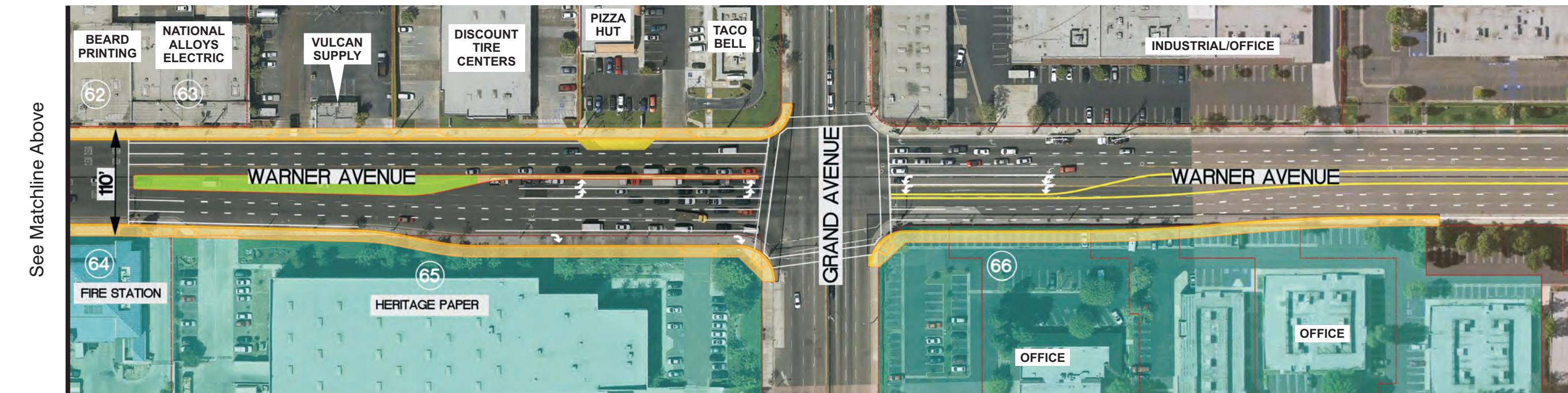
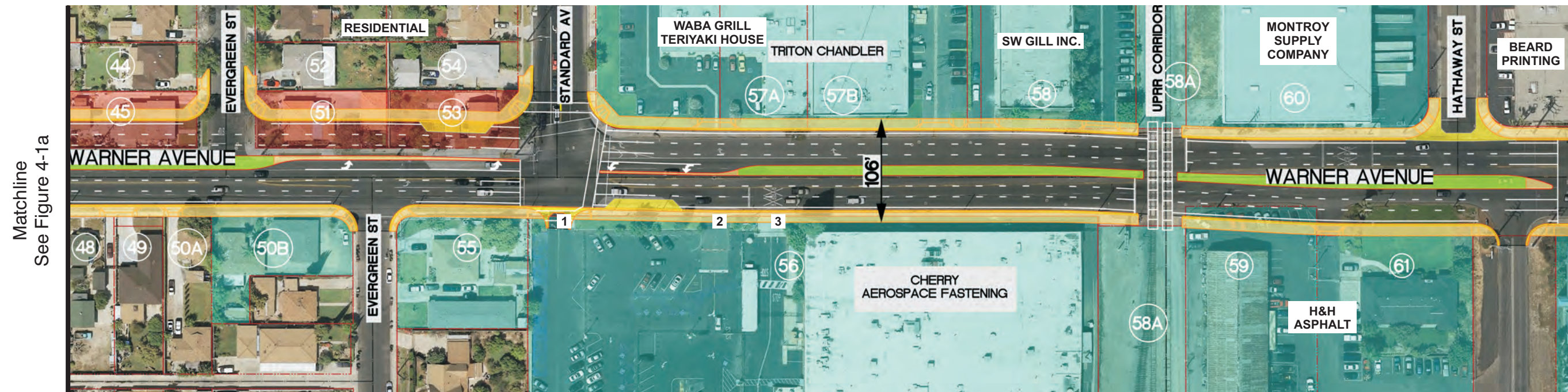


Source: City of Santa Ana 2014

4. Project Description

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Proposed Alignment



LEGEND

- Full Acquisition
- Sidewalk and Parkway
- Median Landscape
- Existing Property Lines (Per Record Maps and Parcel Maps)
- Driveways

28A Map Numbers to Assist Reader Locating Properties Described in Table 4-2.



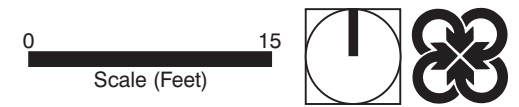
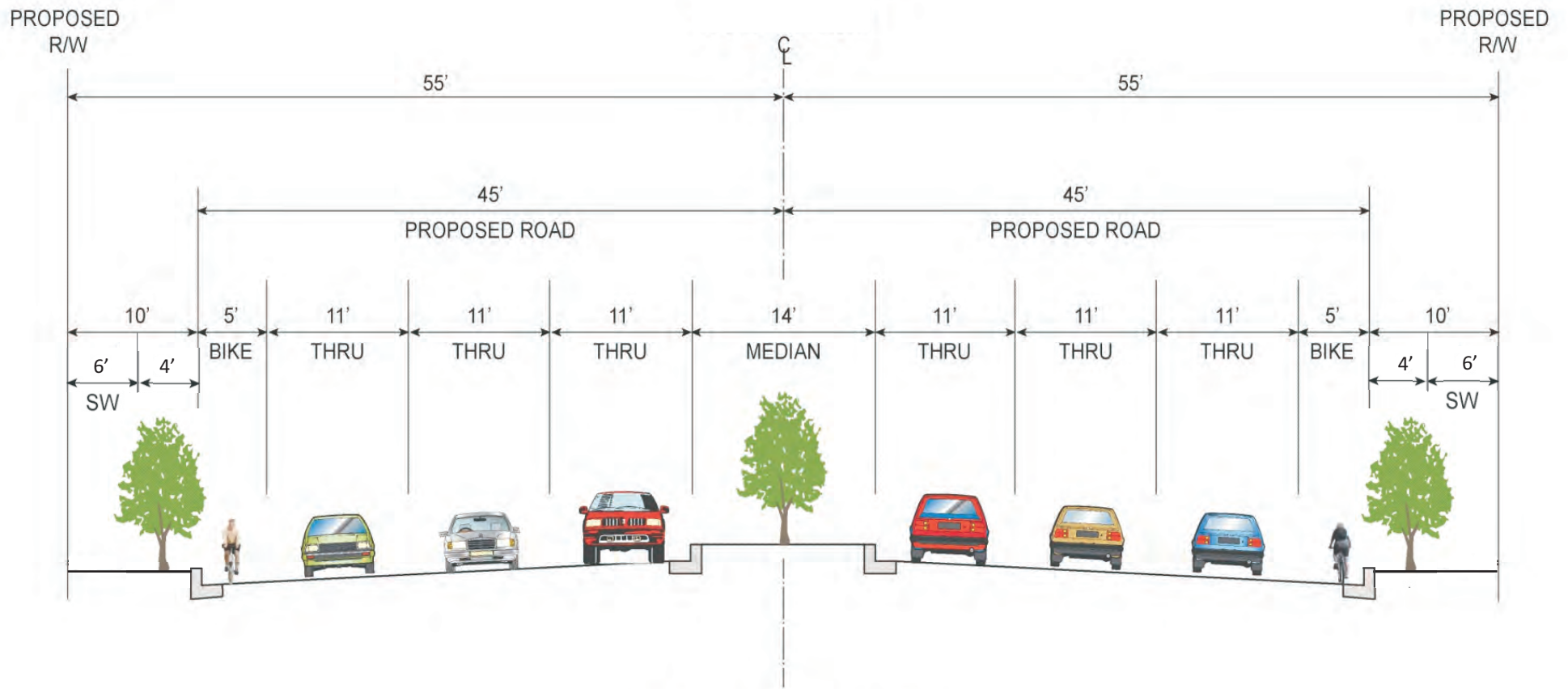
Source: City of Santa Ana 2014

4. Project Description

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4. Project Description

Proposed Street Cross-Section



4. Project Description

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Main Street and Warner Avenue

This intersection would be improved to provide dual eastbound and westbound left turn lanes. The east leg of the intersection would be widened to provide three westbound approach lanes and three eastbound departure lanes. There are currently three westbound departure lanes on the west leg of the intersection, so no additional enhancements would be required for this segment.

Halladay Street and Warner Avenue

In addition to widening this intersection to provide six through lanes on Warner Avenue, a westbound left turn pocket would be provided to access Halladay Street.

Standard Avenue and Warner Avenue

Currently there is a driveway on the south side of Warner Avenue that lines up with Standard Avenue and provides egress movements only for Cherry Aerospace (see Figure 4-1b). The project would change the existing driveways to Cherry Aerospace. To maximize employee and truck access to the site, the driveway at Standard Avenue (Driveway 1) would be reconfigured to include two-way access, with one inbound lane and three outbound lanes (one left-turn lane, one through lane, and one right-turn lane). The second driveway (Driveway 2) along Warner Avenue would be closed, and the third driveway (Driveway 3) would be maintained, designated for truck access only.

Warner Avenue would be widened to six through lanes, and a new westbound left turn pocket into the Driveway 1 would be provided. A raised median along Warner Avenue is proposed as part of the Warner Avenue from Main Street to Grand Avenue Widening Project. The proposed raised median would prevent trucks from parking along the center lane while obtaining clearance before entering the Cherry Aerospace parking lot. To address this issue, the City is proposing a truck pullout along eastbound Warner Avenue just west of Standard Avenue. This pullout would allow trucks to temporarily park their vehicle while getting clearance to enter through Driveway 3.



Grand Avenue and Warner Avenue

As part of the project, one additional through lane will be provided in the westbound direction on Warner Avenue. This would result in two left turn lanes, three through lanes, and one right turn lane in the westbound direction.

Maple Street and Warner Avenue

In the existing condition, Maple Street and Warner Avenue is an unsignalized intersection. As part of the project this intersection would be signalized, and the existing Class I bikeway crossing at Rouselle Street would be rerouted to this location. Left turn lanes from Warner Avenue to Maple Street would be provided in both directions.

Unsignalized Intersections

To improve traffic flow and reduce the potential for accidents, left turn access would be restricted at most of the unsignalized intersections. A raised landscaped median would be installed along Warner Avenue between Main Street and Grand Avenue as part of the project, with median breaks provided exclusively at signalized intersections. Unsignalized intersections where left turn movements are currently permitted

4. Project Description

would be restricted to right-turn-in and right-turn-out movements only. This includes the Warner Avenue intersections with:

- Cypress Avenue
- Orange Avenue
- Oak Street
- Kilson Drive
- Hickory Street
- Halladay Street north of Warner Avenue
- Cedar Street
- Evergreen Street
- All other access driveways within the corridor

Lighting

As part of the project, the existing street lights and any parking lot lights would be relocated along roadway sections that are widened. No additional street lights are anticipated. Relocated street lights would be upgraded with new LED luminaries. Where the City needs to acquire street frontage from adjacent parking lots, those lights would require relocation.

Sidewalks

All sidewalks, curb ramps, and driveways are designed to comply with the most current Americans with Disabilities Act (ADA) requirements per Caltrans Design Information Bulletin (DIB) 82, "Pedestrian Accessibility Guidelines for Highway Projects." Along a sidewalk, Caltrans requires a minimum horizontal clearance of four feet from the face of the curb to any obstructions. The project design and construction would comply with this requirement.

The existing driveway approaches are not compliant with ADA requirements. The ADA requires a minimum four-foot-wide area with a cross-slope of no greater than 2 percent across driveway approaches. The project includes partial reconstruction of driveways and portions of parking lots to accommodate the vertical transition required to comply with ADA.

Bicycle Lanes

The Warner Avenue widening would include 5-foot-wide Class II bicycle lanes on each side of the street. To reduce the impact on properties, the cul-de-sac at Rousselle Street would be restored with the minimum required 38-foot radius based on Orange County Fire Authority design guideline (the City standard is 40 feet). The Class I Bike Path east of Rousselle Street would be reconstructed in place, with the exception of the pedestrian/bike crossing signal, which would be removed. The bike path crossing would be realigned to the intersection of Maple Street, and a new signal and crosswalks would be installed.

Landscaping

The raised median and the expanded ROW would provide a significant opportunity to aesthetically upgrade the Warner Avenue corridor as part of the project. These upgrades would include the use of a landscape theme for both the center median and parkway area. A detailed urban design concept would be prepared and approved by the City prior to final design.

4.3.4 Property Acquisition

To implement the road widening, acquisition of public and private property cannot be avoided. As proposed, the majority of the full parcel (based on assessor parcel numbers, APNs) acquisition would occur along the north side of Warner Avenue from Main Street to Standard Avenue. On the south side of Warner Avenue, four parcels would require full acquisition. All other parcel acquisitions between Main Street and Grand would be partial only. The proposed project would also extend a third westbound through-lane past Grand Avenue to South Wright Street/Brookhollow Drive to continue the improved flow of traffic. Figure 4-1a and Figure 4-1b show that the proposed improvements would require City acquisition of 35 full parcels and a portion of 27 parcels, listed on Table 4-2. Note that multiple APN's comprise some single properties and that one property may have multiple businesses or addresses. Based on Draft Relocation Impact Statement (see Appendix K of this EIR) the total acquisition would be 34 full and 22 partial properties.

The City would comply with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the State of California Relocation Guidelines under Title 25, Division 1, Chapter 6, of the California Code of Regulations. A specific relocation plan would be prepared, and all displaced persons would be contacted by a relocation agent, who is responsible for ensuring that displaced persons receive full relocation benefits, including advisory assistance, and that all activities are conducted in accordance with federal and state regulations. A more complete description of the process is provided in Section 5.9, *Population and Housing*.



4. Project Description

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4. Project Description

**Table 4-2
Proposed Parcel Acquisition**

<i>Map No.¹</i>	<i>APN</i>	<i>Site Address</i>	<i>Existing Land Use</i>	<i>Note</i>	<i>Partial or Full Acquisition</i>	<i>Parking Impacted</i>	<i>Structures Impacted</i>	<i>General Plan</i>	<i>Zoning</i>
North Side (Listed from West to East)									
1	403-141-08	2245 S Main St.	General Commercial	Arco Gas Station + Smog Pros	Full	No	Yes	GC	C2
3	403-141-09	2246 S Cypress Ave.	Multifamily Residential		Full	Yes	Yes	LR-7	R2
7	403-142-13	2245 S Cypress Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R2
8	403-142-14	209 E Warner Ave.	Duplex		Full	Yes	Yes	LR-7	R2
9	403-142-15	215 E Warner Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R2
10	403-142-16	219 E Warner Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R2
11	403-142-17	2246 S Orange Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R2
12	403-142-18	2242 S Orange Ave.	Multifamily Residential		None	No	No	LR-7	R2
14	403-143-12	2245 S Orange Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R2
15	403-143-11	2241 S Orange Ave.	Multifamily Residential		None	No	No	LR-7	R2
16	403-143-13	309 E Warner Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R2
17	403-143-14	315 E Warner Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R2
18	403-143-15	2246 S Maple St.	Single-family Residential		Full	Yes	Yes	LR-7	R2
19	403-143-16	2242 S Maple St.	Multifamily Residential		None	No	No	LR-7	R2
23	403-144-12	2245 S Maple St.	Single-family Residential		Full	Yes	Yes	LR-7	R2
23A	403-144-13	No Address	Pacific Electric Bike Path (Maple Street Bike Trail)		None	No	No	OS	OS
24A	403-144-11	2243 S Maple St.	Single-family Residential		Partial- Southwest Corner and East Side	Yes	No	LR-7	R2
24B	403-144-10	2239 S Maple St.	Single-family Residential		None	No	No	LR-7	R1
25	016-101-29	2247 S Rouselle St.	Single-family Residential		Full	Yes	Yes	LR-7	R1
26A	016-101-28	2246 S Oak St.	Single-family Residential		Full	Yes	Yes	LR-7	R1
26B	016-101-12	2242 S Oak St.	Single-family Residential		None	No	No	LR-7	R1
27A	016-102-24	2245 S Oak St.	Single-family Residential		Full	Yes	Yes	LR-7	R1
27B	016-102-11	2241 S Oak St.	Single-family Residential		None	No	No	LR-7	R1
29A	016-102-23	2246 S Kilson Dr.	Single-family Residential		Full	Yes	Yes	LR-7	R1
29B	016-102-21	2242 S Kilson Dr.	Single-family Residential		None	No	No	LR-7	R1
30	016-103-22	2245 S Kilson Dr.	Duplex		Full	Yes	Yes	LR-7	R1
31	016-103-23	705 E Warner Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R1
33	016-104-10	2241 S Hickory St.	Single-family Residential		None	No	No	LR-7	R1
32	016-104-28	2245 S Hickory St.	Single-family Residential		Full	Yes	Yes	LR-7	R1

4. Project Description

**Table 4-2
Proposed Parcel Acquisition**

Map No.¹	APN	Site Address	Existing Land Use	Note	Partial or Full Acquisition	Parking Impacted	Structures Impacted	General Plan	Zoning
34	016-104-21	809 E Warner Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R1
35	016-104-29	2244 S Halladay St.	Single-family Residential		Full	Yes	Yes	LR-7	R1
36	016-105-19	2245 S Halladay St.	Single-family Residential		Full	Yes	Yes	LR-7	R1
37	016-105-20	905 E Warner Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R1
38	016-105-21	909 E Warner Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R1
38A	016-105-22	No Address	Open/Vacant	Traffic signal & utility pole	Full	N/A	N/A	OS	OS
39A	016-214-12	2246 S Cedar St.	Single-family Residential		Full	Yes	Yes	LR-7	R1
39B	016-214-11	2242 S Cedar St.	Single-family Residential		None	No	No	LR-7	R1
42	016-212-27	2243 S Cedar St.	Single-family Residential		None	No	No	LR-7	R1
43	016-212-26	2247 S Cedar St.	Single-family Residential		Full	Yes	Yes	LR-7	R1
44	016-212-24	2242 S Evergreen St.	Single-family Residential		None	No	No	LR-7	R1
45	016-212-25	2246 S Evergreen St.	Single-family Residential		Full	Yes	Yes	LR-7	R1
51	016-211-26	2247 S Evergreen St.	Single-family Residential		Full	Yes	Yes	LR-7	R1
52	016-211-27	2243 S Evergreen St.	Single-family Residential		None	No	No	LR-7	R1
53	016-211-25	2246 S Standard Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R1
54	016-211-24	2242 S Standard Ave.	Multifamily Residential		None	No	No	LR-7	R2
57A	016-120-52	1209 E Warner Ave.	Restaurant/Offices	Waba Grill	Partial-South Portion	No	No	IND	M1
	016-120-49	1201 E Warner Ave.	Restaurant/Offices	Waba Grill	Partial-South Portion			IND	M1
57B	016-120-48	1221 E Warner Ave.	Industrial/Office	Triton Chandelier (retail lighting fixtures)	Partial-South Portion	No	No	IND	M1
58	016-120-53	1243 E Warner Ave.	Easement	Access drive for building north of SW Gill Inc.	Partial-South Portion	No	No	IND	M1
	016-120-54	1231 E Warner Ave.	Industrial/Office	SW Gill Inc. (painting and paper hanging contractors)	Partial- South Portion			IND	M1
58A	872-30-13F-173	No Address	Union Pacific Railroad (UPRR) tracks	Railroad	Partial-South Portion	N/A	N/A	OS	O

4. Project Description

**Table 4-2
Proposed Parcel Acquisition**

Map No.¹	APN	Site Address	Existing Land Use	Note	Partial or Full Acquisition	Parking Impacted	Structures Impacted	General Plan	Zoning
60	014-281-19	1301 E Warner Ave.	Industrial/Office	Montroy Supply Co. (advertising sign supplies)	Partial-South Portion	No	No	IND	M1
62	014-281-12	1331 E Warner Ave.	Industrial/Office	Beard Printing (digital, offset printing, and graphics)	None	No	No	IND	M1
63		1335 E Warner Ave.	Industrial/Office	National Electric Alloys (expansion controlled alloy supplies and distribution)	None	No	No	IND	M1
Subtotal (APN)		FULL: 30			PARTIAL: 8				
South Side (Listed from West to East)									
2 ²	016-031-54	2301 S. Main St.	Bank	Wells Fargo Bank	Full	No	Yes	GC	C2
	016-031-38	2301 S. Main St.	Bank	Parking lot	Full			GC	C2
4	016-031-37	124 E Warner Ave.	Duplex		Full	Yes	Yes	GC	C1
5	016-031-32	128 E Warner Ave.	Duplex		Full	Yes	Yes	GC	C1
6A	016-031-33	204 E Warner Ave.	Retail Center	Oli's Bakery Building	Partial-North Portion	No	No	GC	C1
6B	016-031-50	216 E Warner Ave.	Retail Center	Shopping Center (hair salon, market, laundry)	Partial-North Portion	No	No	GC	C1
6C	016-031-51	222 E Warner Ave.	Retail Center	El Taco Vaquero	Partial-North Portion	No	No	GC	C1
13	016-031-40	230 E Warner Ave.	Single-family Residential		Partial-North Portion	No	No	LR-7	R1
20	016-034-01	302 E Warner Ave.	Single-family Residential		Partial-Northwest Corner	No	No	LR-7	R1
21	016-034-26	310 E Warner Ave.	Single-family Residential		Partial-Northeast Corner	No	No	LR-7	R1
22 ³	016-035-01	402 E Warner Ave.	Single-family Residential		Full	Yes	Yes	LR-7	R2
22A	016-090-26	417 E Central Ave.	Institutional	James Monroe Elementary School	None	No	No	INS	O

4. Project Description

**Table 4-2
Proposed Parcel Acquisition**

Map No.¹	APN	Site Address	Existing Land Use	Note	Partial or Full Acquisition	Parking Impacted	Structures Impacted	General Plan	Zoning
23A	016-035-14	No Address	Pacific Electric Bike Path (Maple Street Bike Trail)	Pacific Electric Bike Path is an off-road, paved trail that extends from the Santa Ana River at MacArthur Boulevard on the south approximately three miles to Chestnut Avenue on the north	None	No	No	N/A	N/A
28A	016-090-25	612 E Warner Ave.	Military	California National Guard Armory	None	No	No	OS	O
	016-090-24				None				
	016-090-21				None				
28B	016-090-22	2314 S Halladay St.	Open Space	Delhi Park and Community Center	None	No	No	OS	O
40	016-133-44	2305 S Halladay St.	Multifamily Residential		None	No	No	LR-7	R2
41	016-133-33	910 E Warner Ave.	Multifamily Residential		None	No	No	LR-7	R2
46	016-133-32	1002 E Warner Ave.	Multifamily Residential		None	No	No	LR-7	R2
47	016-133-31	1008 E Warner Ave.	Multifamily Residential		None	No	No	LR-7	R2
48	016-133-29	1012 E Warner Ave.	Multifamily Residential		None	No	No	LR-7	R2
49	016-133-47	1016 E Warner Ave.	Multifamily Residential		None	No	No	LR-7	R2
50A	016-133-43	1020 E Warner Ave.	Multifamily Residential		None	No	No	LR-7	R2
50B	016-133-28	1106 E Warner Ave.	Single-family Residential		Partial-Northeast Corner	No	No	LR-7	R2
55	016-131-18	2301 S Evergreen St.	Single-family Residential		Partial-North Portion	No	No	LR-7	R2
56	016-150-09	1224 E Warner Ave.	Industrial/Office	Cherry Aerospace, SPS Fastener Division, a PCC Company (design & manufacture of	Partial-North Portion	No	No	IND	M1

4. Project Description

**Table 4-2
Proposed Parcel Acquisition**

<i>Map No.¹</i>	<i>APN</i>	<i>Site Address</i>	<i>Existing Land Use</i>	<i>Note</i>	<i>Partial or Full Acquisition</i>	<i>Parking Impacted</i>	<i>Structures Impacted</i>	<i>General Plan</i>	<i>Zoning</i>
				fastening systems for aerospace)					
58A	872-30-13F-19	No Address	Union Pacific Railroad (UPRR) tracks and Beeson Lane east of tracks	Railroad	Partial-Northeast Corner	N/A	N/A	OS	O
59	016-150-74	1312 E Warner Ave.	Industrial	Hardy & Harper Asphalt Paving Contractor (former Sakioka Farms warehouse building)	Partial-North Portion	Yes (13 spaces)	No	IND	M1
61	016-150-52	1312 E Warner Ave.	Industrial/Office	Hardy & Harper Asphalt Paving Contractor (former residential building)	Partial-North Portion	No	No	IND	M1
		No Address	Access road for RV Storage Depot (1316 E Warner Ave.) and the SCE power substation (1318 E Warner Ave.)						
64	016-150-70	1320 E Warner Ave.	Fire Station	City of Santa Ana Fire Station No. 9	Partial-Northeast Corner	No	No	IND	M1
65	016-150-71	2400 S Grand Ave.	Industrial/Office	Heritage Paper (industrial, retail and personal packaging	Partial-North Portion	No	No	IND	M1

4. Project Description

**Table 4-2
Proposed Parcel Acquisition**

Map No.¹	APN	Site Address	Existing Land Use	Note	Partial or Full Acquisition	Parking Impacted	Structures Impacted	General Plan	Zoning
66 ⁴	016-221-01	1504 E Warner Ave.	Office	Parking lot along Warner Ave.	Partial-North Portion	Yes (approx. 49 spaces)	No	PAO	SD8
	016-221-31	1500 Brookhollow Dr.	Office	Parking lot along Warner Ave.	Partial-North Portion			PAO	SD8
	016-221-30	1502 E Warner Ave.	Office	Parking lot along Warner Ave.	Partial-North Portion			PAO	SD8
	016-221-07	1530 E Warner Ave.	Office	Parking lot along Warner Ave.	Partial-North Portion			PAO	SD8
	016-221-08	1532 E Warner Ave.	Office	Parking lot along Warner Ave.	Partial-North Portion			PAO	SD8
Subtotal (APN)			FULL: 5	PARTIAL: 19					
ACQUISITION TOTAL (based on property)¹ = 56			FULL: 34	PARTIAL: 22					
ACQUISITION TOTAL (based on APNs) = 62			FULL: 35	PARTIAL: 27					

¹ See Figure 4-1a and Figure 4-1b.

² Reconstruction of curb return at southeast corner of Warner and Main per the City's standard radius of 35 feet would effect the northeast corner of the existing Wells Fargo Bank building. This would require the partial demolition and reconstruction of the building to accommodate the curb return or the full acquisition of the parcel and demolition of the building. If the building is modified to accommodate the curb return, a partial take of the existing setback area along the parcel in front of the building and parking lot would be required. This parcel was assumed as a full take for the purpose of this study.

³ Requires full acquisition of the parcel on the southeast corner of the Warner and Maple intersection to accommodate the realigned Class I Bike Path.

⁴ One of these five parcels may require City acquisition depending on final design parameters and parking allocation.

Notes:

Zoning (see Figure 3-7, *Zoning Districts*)

R2 (Two-Family Residence)
R1 (Single-Family Residence)
C2 (General Commercial)
C1 (Community Commercial)
M1 (Light Industrial)
O (Open Space)
SD8 (Specific Development)

General Plan (see Figure 3-8, *General Plan Designations*)

LR-7 (Low Density Residential)
GC (General Commercial)
OS (Open Space)
IND (Industrial)
PAO (Professional and Administrative Office)
INS (Institutional)

¹ Note that multiple APN's comprise some single properties and that one property may have multiple businesses or addresses. Based on Draft Relocation Impact Statement (see Appendix K of this EIR) the total acquisition would be 34 full and 22 partial properties.

4.3.5 Project Phasing

Depending on the funding availability, this project is planned to be complete in several phases. Road-widening construction is anticipated to take place in quarter-mile sections; therefore, within the one-mile project length, there would be four quarter-mile sections. Road construction would follow acquisition of the required properties; however, it is currently unknown how long it would take to acquire all the properties in each segment. Upon acquisition of properties and required demolition, improvements could occur within 16 months. Segments may be delayed because of the lack of funding or other parcel acquisition issues. It is assumed that within each quarter-mile section, construction activities related to roadway widening would be performed along one side of the street in the entirety before beginning construction work on the other side. Each segment would have two phases, as shown below and in Table 4-3.

**Table 4-3
Construction Phasing and Equipment**

<i>Activity</i>	<i>Area</i>	<i>Duration</i>	<i>Construction Equipment</i>
1. ROW acquisition, demolition, and clearance			
Demolition of structures and building pads	Entire ROW	3 months ¹	2 backhoes and 1 front-end loader
Remove and relocate overhead electrical (OHE)	Entire ROW	6 months ¹	2 cranes and 1 pole-pulling machine
2. Road Widening			
Demolition of asphalt, concrete, curb, and gutter	¼-mile segment	3 days ²	1 front-end loader with breaker attachment
Excavation/removal of fill and subbase material	¼-mile segment	5 days ²	2 backhoes and 1 front-end loader
Foundation (aggregate base and base)	¼-mile segment	17 days ²	1 paver & 2 rollers
Pavement (topcoat)	¼-mile segment	17 days ²	1 paver & 2 rollers

Note: Duration of each phase is approximate.

¹ ROW clearance, demolition, and removal of buildings, pads, and poles would be done over 3 to 5 years as parcels are acquired by the City.

² Duration is for each side of the street if required for widening. For example, laying pavement would take 17 days for a 0.25-mile section on the north side of Warner Avenue and another 17 days for a 0.25-mile section on the south side of Warner Avenue.

1. ROW acquisition, demolition, and clearance for the first phase are anticipated to start early 2016:

- The City would acquire the necessary parcels and assist in the relocation of impacted residents and businesses.
- Structure demolition would occur as properties are acquired. Houses, businesses, walls and fences, and landscaping on acquired parcels would be demolished. Prior to demolition, structures would be surveyed and properly abated for asbestos-containing material and lead-based paint, as required.



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- An estimated 996 tons of building demolition debris, 2,361 tons of building pad debris, and 51,645 tons of asphalt debris for the entire 1-mile segment would be collected during demolition and need to be removed from the site.²
2. Road widening (approximately 4 months to construct a ¼-mile segment):
- All overhead power transmission poles and lines, street light poles, and gas and water valves along Warner Avenue would be relocated to align with the new ROW. No disruption of services is anticipated.
 - Relocate above-ground utilities and utility poles. Underground utilities would remain in place; however, some may require minor relocation to ensure they are deep enough under the road grade. All relocation would take place concurrently with roadway widening construction.
 - Remove asphalt, pavement, sidewalk, curb, and gutter; excavate road bed.
 - Approximately 24,725 cubic yards of soil export haul and 24,725 cubic yards of soil import haul will be required for the demolition, clearance, and road widening of the entire 1-mile segment.
 - Rough grading and aggregate base as foundation would be laid, followed by asphalt paving and top-coat pavement at utility grade. Curb, gutter, and sidewalks would also be installed.

The estimated material quantities and construction trips required to import and export the estimated amount of demolition debris and construction material is summarized below in Table 4-4:

Table 4-4
Construction Material Quantities and Construction Trips

Materials	Quantity¹	Daily Haul Trip Ends	Worker Daily Trip Ends	Vendor Daily Trip Ends	Duration (days)
Demolished Materials ²					
Buildings	249 tons	15	10	4	17
Building Pads	590 tons	35	0	0	17
Demo Structures/ Building Pads Overlap	N/A	55	10	4	NA
Overhead Electrical Removal	N/A	0	8	0	33
Asphalt Debris	12,911 tons	409	5	0	5
Grading (Subbase/ Fill)	N/A	412	8	0	10
Paving (Aggregate Base)	N/A	0	8	10	33
Pavement (Topcoat)	N/A	0	8	10	33

Notes: bsf = building square feet ; N/A = not available

¹ Materials quantity is average per ¼ mile segment.

² Demolished materials include building, concrete, asphalt, and landscape materials.

² Estimated pounds of demolition debris per square foot are 158 pounds for nonresidential demolition and 4.34 pounds for residential demolition (USEPA 200)

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The City of Santa Ana Municipal Code states that construction activities are permitted between 7:00 AM and 8:00 PM on weekdays and Saturdays; no construction is permitted on Sundays or federal holidays. In compliance with the City Standard Specifications and Special Provisions the contractor's activities will be confined to the following hours:

- From 7:00 a.m. to 5:00 p.m., Monday through Friday, within work areas having either no lane closures or having continuous lane closures, i.e. 24-hour closures lasting more than one day.
- From 9:00 a.m. to 3:00 p.m., Monday through Friday, for work requiring temporary lane closures, i.e. those having less than a 24-hour duration, and for work at major intersections. As an alternative, construction at major intersections may be permitted at night or on weekends.

Construction Staging

During demolition and construction, vehicle, equipment, and materials staging and storage would be located on one or more of the acquired lots. No permanent staging of construction equipment and materials would occur in the active public ROW. Fencing around the construction staging area would ensure safety and separation of the public from construction equipment and materials.

Traffic Control

Construction would be completed in linear segments so the entire length of Warner Avenue within the project limits is not disrupted at once. The number of intersecting cross-streets that require closure during construction would be minimized. This would reduce access challenges for residents who live on the north side of Warner Avenue. If a cross-street must be closed during construction, motorists could use a nearby open road.

During demolition and construction, the four existing travel lanes on Warner Avenue would be narrowed to two lanes, one lane in each direction, along the side opposite the area of construction.

If temporary lane closures are required, they would be limited to nonpeak hours, and travelers would be directed to alternate routes; closures are not anticipated to last more than 24 hours.

A detailed traffic control plan for roadway traffic would be prepared based on the most recent version of "The Greenbook: Standard Specifications for Public Works Construction" (federal); California Department of Transportation, "California Manual on Uniform Traffic Control Devices" (state); Southern California Chapter of the American Public Works Association, "Work Area Traffic Control Handbook" (local); and City special provisions (local). The traffic control plan would be prepared by a licensed traffic engineer prior to the beginning of any construction work. The traffic control plan would include extensive public outreach and public awareness through the use of mailers and notices in local papers and other publications.

4.4 INTENDED USES OF THE EIR

This Draft EIR examines the environmental impacts of the proposed road widening project. It is the intent of this Draft EIR to enable the City of Santa Ana, other responsible agencies, and interested parties to evaluate the environmental impacts of the proposed project, thereby enabling them to make informed decisions with respect to the requested entitlements. The anticipated approvals required for this project are as follows:



4. Project Description

Lead Agency	Action
City of Santa Ana	<ul style="list-style-type: none"> • Certify environmental impact report • Adopt mitigation monitoring and reporting program • Make findings of fact and adopt a statement of overriding considerations • Approve project
Responsible Agencies	Action
California Public Utilities Commission	<ul style="list-style-type: none"> • Review and approve relocation of privately owned electric, natural gas, telecommunications, and water utilities
California Public Utilities Commission, Rail Crossings Engineering Section	<ul style="list-style-type: none"> • Evaluate and approve request to modify existing railroad crossing
South Coast Air Quality Management District	<ul style="list-style-type: none"> • Issue air quality permits to implement the project prior to and during construction
Santa Ana Regional Water Quality Control Board	<ul style="list-style-type: none"> • Issue NPDES permit

5. *Environmental Analysis*

5.1 **AIR QUALITY**

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for the Warner Avenue Widening from Main Street to Grand Avenue project (proposed project) to impact air quality in a local and regional context. The air quality model output sheets are included in Appendix D of this DEIR.

5.1.1 **Environmental Setting**

South Coast Air Basin

The project site lies within the South Coast Air Basin (SoCAB), which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (SCAQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the project site is the Santa Ana Fire Station Monitoring Station (ID No. 047888). The average low is reported at 43.1°F in January, and the average high is 84.7°F in August (WRCC 2013).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages 13.69 inches per year in the project area (WRCC 2013).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 2005).



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Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (SCAQMD 2005).

Air Pollutants of Concern

Criteria Air Pollutants

Pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb) are primary air pollutants. Of these, CO, SO₂, NO₂, PM₁₀, and PM_{2.5} are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and NO₂ are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the SoCAB. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005). The SoCAB is

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designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2011).

Volatile Organic Compounds (VOC) are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of VOCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of O₃, the South Coast Air Quality Management District (SCAQMD) has established a significance threshold for this pollutant (SCAQMD 2005).

Nitrogen Oxides (NO_x) are a byproduct of fuel combustion and contribute to the formation of O₃, PM₁₀, and PM_{2.5}. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂). The principal form of NO₂ produced by combustion is NO. NO reacts with oxygen to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 part per million (ppm). NO₂ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure (SCAQMD 2005). The SoCAB is designated as an attainment area for NO₂ under the National AAQS and nonattainment under the California AAQS (CARB 2011).

Sulfur Dioxide (SO₂) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO₂ (SCAQMD 2005). When sulfur dioxide forms sulfates (SO₄) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO₂ is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO₂ may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO₂ may do greater harm by injuring lung tissue. The SoCAB is designated as attainment under the California and National AAQS (CARB 2011).

Suspended Particulate Matter (PM₁₀ and PM_{2.5}) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM₁₀, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or PM_{2.5}, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on arid landscapes also contributes substantially to local particulate loading (i.e., fugitive dust). Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems (SCAQMD 2005).

The US Environmental Protection Agency's (EPA) scientific review concluded that PM_{2.5}, which penetrates deeply into the lungs, is more likely than PM₁₀ to contribute to health effects and at concentrations that extend well below those allowed by the current PM₁₀ standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease



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(children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. Diesel particulate matter (DPM) is classified by the California Air Resources Board (CARB) as a carcinogen. The SoCAB is a nonattainment area for PM_{2.5} and PM₁₀ under California and National AAQS (CARB 2011).¹

Ozone (O₃) is commonly referred to as “smog” and is a gas that is formed when VOCs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O₃ is a secondary criteria air pollutant. O₃ concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for the formation of this pollutant. O₃ poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, O₃ has been tied to crop damage, typically in the form of stunted growth and premature death. O₃ can also act as a corrosive, resulting in property damage such as the degradation of rubber products (SCAQMD 2005). The SoCAB is designated as extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2011).

Lead (Pb) concentrations decades ago exceeded the state and federal AAQS by a wide margin, but have not exceeded state or federal air quality standards at any regular monitoring station since 1982 (SCAQMD 2005). However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.² As a result of these localized violations, the Los Angeles County portion of the SoCAB was designated in 2010 as nonattainment under the California and National AAQS for lead (CARB 2011). The project is not characteristic of industrial-type projects that have the potential to emit lead. Therefore, lead is not a pollutant of concern for the project.

Toxic Air Contaminants

The public’s exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.” A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code § 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics “Hot Spot” Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a

¹ CARB approved the SCAQMD’s request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the National AAQS on March 25, 2010, because the SoCAB has not violated federal 24-hour PM₁₀ standards during the period from 2004 to 2007. However, the EPA has not yet approved this request.

² Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 identified that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2010).

formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an “airborne toxics control measure” for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

In 2000, SCAQMD conducted a study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71 percent of the air toxics risk. In 2008, SCAQMD conducted its third update to its study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in one million. The largest contributor to this risk was diesel exhaust, accounting for approximately 84 percent of the air toxics risk (SCAQMD 2008).



Regulatory Setting

AAQS have been promulgated at the local, state, and federal levels for criteria pollutants. The project site is in the SoCAB and is subject to the rules and regulations imposed by SCAQMD as well as the California AAQS adopted by CARB and federal AAQS.

Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

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These National AAQS and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect “sensitive receptors” most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 5.1-1, these pollutants include O₃, NO₂, CO, SO₂, PM₁₀, PM_{2.5}, and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

**Table 5.1-1
Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O ₃)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO ₂)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	*	0.030 ppm ²	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm ¹	
	24 hours	0.04 ppm	0.014 ppm ²	
Respirable Coarse Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m ³	150 µg/m ³	
Respirable Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	15 µg/m ^{3,3}	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m ³	
Lead (Pb)	Monthly	1.5 µg/m ³	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 µg/m ³	
	3-Month Average	*	0.15 µg/m ³	
Sulfates (SO ₄)	24 hours	25 µg/m ³	*	Industrial processes.

**Table 5.1-1
Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Visibility-Reducing Particles	8 hours	ExCo = 0.23/km visibility of 10 ≥ miles ¹	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H ₂ S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2012.

Notes: ppm: parts per million; μg/m³: micrograms per cubic meter

¹ When relative humidity is less than 70 percent.

² On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

³ On December 14, 2012, EPA lowered the federal primary PM_{2.5} annual standard from 15.0 μg/m³ to 12.0 μg/m³. The new annual standard will become effective 60 days after publication in the Federal Register. EPA made no changes to the primary 24-hour PM_{2.5} standard or to the secondary PM_{2.5} standards.

* Standard has not been established for this pollutant/duration by this entity.



Air Quality Management Planning

SCAQMD is responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2012 AQMP

On December 7, 2012, SCAQMD adopted the 2012 AQMP, which employs the most up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources. It also addresses several state and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological

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air quality models. The 2012 AQMP builds upon the approach identified in the 2007 AQMP for attainment of federal PM and ozone standards and highlights the significant amount of reductions needed and the urgent need to engage in interagency coordinated planning to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria air pollutant standards within the timeframes allowed under the CAA. The 2012 AQMP demonstrates attainment of federal 24-hour PM_{2.5} standard by 2014 and the federal 8-hour ozone standard by 2023. It includes an update to the revised EPA 8-hour ozone control plan with new commitments for short-term NO_x and VOC reductions. The plan also identifies emerging issues of ultrafine (PM₁₀) particulate matter and near-roadway exposure, and an analysis of energy supply and demand.

Lead State Implementation Plan

In 2008 EPA designated the Los Angeles County portion of the SoCAB nonattainment under the federal lead (Pb) classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the new standard. The remainder of the SoCAB, outside the Los Angeles County nonattainment area, remain in attainment of the new standard. On May 24, 2012, CARB approved the state implementation plan (SIP) revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to EPA for approval.

Nonattainment Areas

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through SIP. Areas are classified attainment or nonattainment for particular pollutants, depending on whether they meet ambient air quality standards. Severity classifications for ozone nonattainment range from marginal, moderate, and serious to severe and extreme.

Transportation conformity for nonattainment and maintenance areas is required under the federal CAA to ensure federally supported highway and transit projects conform to the SIP. The EPA approved California's SIP revisions for attainment of the 1997 8-hour O₃ National AAQS for the SoCAB in March 2012. Findings for the new 8-hour O₃ emissions budgets for the SoCAB and consistency with the recently adopted 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) were submitted to the EPA for approval.

The attainment status for the SoCAB is shown in Table 5.1-2. The SoCAB is also designated in attainment of the California AAQS for sulfates. The SoCAB will have to meet the new federal 8-hour O₃ standard by 2023, and the federal 24-hour PM_{2.5} standards by 2014 (with the possibility of up to a five-year extension to 2019, if needed). SCAQMD has recently designated the SoCAB nonattainment for NO₂ (entire basin) and lead (Los Angeles County only) under the California AAQS.

Table 5.1-2
Attainment Status of Criteria Pollutants in the South Coast Air Basin

<i>Pollutant</i>	<i>State</i>	<i>Federal</i>
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Severe-17 Nonattainment ¹
PM ₁₀	Serious Nonattainment	Nonattainment ²
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO ₂	Nonattainment	Attainment/Maintenance
SO ₂	Attainment	Attainment
Lead	Nonattainment (Los Angeles County only) ³	Nonattainment (Los Angeles County only) ³
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2011.

¹ SCAQMD may petition for Extreme Nonattainment designation.

² Annual standard revoked September 2006. CARB approved SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the National AAQS on March 25, 2010, because the SoCAB has not violated federal 24-hour PM₁₀ standards from 2004 to 2007. However, the EPA has not yet approved this request.

³ The Los Angeles portion of the SoCAB was designated nonattainment for lead under the new federal and existing state AAQS as a result of large industrial emitters. Remaining areas within the SoCAB are unclassified.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site and project area are best documented by measurements made by SCAQMD. The project site is in Source Receptor Area (SRA) 17 – Inland Orange County (Central Orange County). The air quality monitoring station closest to the project is the Anaheim-Pampa Lane Monitoring Station. This station does not have information for SO₂, so the information for this criteria air pollutant was obtained from the Costa Mesa-Mesa Verde Drive monitoring station. Data from these stations are summarized in Table 5.1-3. The data show that the concentration levels of O₃, PM₁₀, and PM_{2.5} of the area regularly exceed the state and federal one-hour and eight-hour O₃ standards as well as the state PM₁₀ and federal PM_{2.5} standards. The CO, SO₂, and NO₂ standards have not been exceeded in the last five years in the project vicinity.



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**Table 5.1-3
Ambient Air Quality Monitoring Summary**

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2007	2008	2009	2010	2011
Ozone (O₃)¹					
State 1-Hour ≥ 0.09 ppm	2	2	0	1	0
State 8-hour ≥ 0.07 ppm	7	10	2	1	1
Federal 8-Hour > 0.075 ppm	1	5	1	1	0
Max. 1-Hour Conc. (ppm)	0.127	0.105	0.093	0.104	0.088
Max. 8-Hour Conc. (ppm)	0.099	0.086	0.077	0.088	0.072
Carbon Monoxide (CO)¹					
State 8-Hour > 9.0 ppm	0	0	0	0	0
Federal 8-Hour ≥ 9.0 ppm	0	0	0	0	0
Max. 8-Hour Conc. (ppm)	2.91	3.44	2.73	1.98	2.08
Nitrogen Dioxide (NO₂)¹					
State 1-Hour ≥ 0.18 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.086	0.093	0.068	0.073	0.074
Sulfur Dioxide (SO₂)²					
State 1-Hour ≥ 0.04 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.004	0.003	0.004	0.002	0.002
Coarse Particulates (PM₁₀)¹					
State 24-Hour > 50 µg/m ³	6	3	1	0	2
Federal 24-Hour > 150 µg/m ³	1	0	0	0	0
Max. 24-Hour Conc. (µg/m ³)	489.0	111.5	97.4	43.0	53.0
Fine Particulates (PM_{2.5})¹					
Federal 24-Hour > 35 µg/m ³	14	5	5	0	2
Max. 24-Hour Conc. (µg/m ³)	79.4	67.8	64.5	31.7	39.2

Source: CARB 2013.

ppm: parts per million; µg/m³: or micrograms per cubic meter.

¹ Data obtained from the Anaheim – Pampa Lane Monitoring Station at 1630 Pampas Lane in the City of Anaheim.

² Data obtained from the Costa Mesa – Mesa Verde Drive Monitoring Station at 2850 Mesa Verde Drive East in the City of Costa Mesa.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because the majority of the workers tend to stay indoors most of the time. In addition, the workforce is generally the healthiest segment of the population. The closest sensitive receptors to the project site are the residences along proposed project corridor.

5.1.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.
- AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- AQ-3 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- AQ-4 Expose sensitive receptors to substantial pollutant concentrations.
- AQ-5 Create objectionable odors affecting a substantial number of people.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following threshold would be less than significant:

- Threshold AQ-5

This impact will not be addressed in the following analysis.



South Coast Air Quality Management District Thresholds

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's *CEQA Air Quality Handbook* and the significance thresholds on SCAQMD's website.³ CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation. In addition to the daily thresholds listed above, projects are also subject to the AAQS. These are addressed through an analysis of localized CO impacts and localized significance thresholds (LSTs).

Regional Significance Thresholds

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 5.1-4 lists SCAQMD's regional significance thresholds.

³ SCAQMD's Air Quality Significance Thresholds are current as of March 2011 and can be found at: <http://www.aqmd.gov/ceqa/hdbk.html>.

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**Table 5.1-4
SCAQMD Significance Thresholds**

<i>Air Pollutant</i>	<i>Construction Phase</i>	<i>Operational Phase</i>
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Nitrogen Oxides (NO _x)	100 lbs/day	55 lbs/day
Sulfur Oxides (SO _x)	150 lbs/day	150 lbs/day
Particulates (PM ₁₀)	150 lbs/day	150 lbs/day
Particulates (PM _{2.5})	55 lbs/day	55 lbs/day

Source: SCAQMD 2011a.

CO Hot Spots

Areas of vehicle congestion have the potential to create pockets of CO called hot spots, which have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. Typically, for an intersection to exhibit a significant CO concentration, it would operate at level of service (LOS) E or worse without improvements (Caltrans 1997).

Localized Significance Thresholds

SCAQMD developed localized significance thresholds (LSTs) to determine if emissions of NO₂, CO, PM₁₀, and PM_{2.5} generated at the project site (offsite mobile-source emissions are not included the LST analysis) would expose sensitive receptors to substantial concentrations of criteria air pollutants. LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS and are shown in Table 5.1-5.

**Table 5.1-5
SCAQMD Localized Significance Thresholds**

<i>Air Pollutant (Relevant AAQS)</i>	<i>Concentration</i>
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO ₂ Standard (CAAQS)	0.18 ppm
24-Hour PM ₁₀ Standard – Construction (SCAQMD) ¹	10.4 µg/m ³
24-Hour PM _{2.5} Standard – Construction (SCAQMD) ¹	10.4 µg/m ³
24-Hour PM ₁₀ Standard – Operation (SCAQMD) ¹	2.5 µg/m ³
24-Hour PM _{2.5} Standard – Operation (SCAQMD) ¹	2.5 µg/m ³

ppm – parts per million; µg/m³ – micrograms per cubic meter

¹ Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM₁₀ and PM_{2.5}, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

To assist lead agencies, SCAQMD developed screening-level LSTs to back-calculate the mass amount (lbs. per day) of emissions generated onsite that would trigger the levels shown in Table 5.1-6. LSTs are based on the ambient concentrations of that pollutant within the project SRA and the distance to the nearest sensitive receptor. Screening-level LST analyses for construction are the localized significance

thresholds for all projects of five acres and less; however, it can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required to compare concentrations of air pollutants generated by the project to the localized concentrations in Table 5.1-5.

**Table 5.1-6
SCAQMD Construction Screening-Level Localized Significance Thresholds**

<i>Air Pollutant</i>	<i>Threshold (lbs/day)</i>
	<i>Construction</i>
Nitrogen Oxides (NO _x)	98
Carbon Monoxide (CO)	600
Coarse Particulates (PM ₁₀)	5
Fine Particulates (PM _{2.5})	4

Source: SCAQMD 2003; SCAQMD 2006; SCAQMD 2011b, for receptors 82 feet (25 meters) from the source in SRA 17. Construction LSTs are based on 1.5 acres disturbed per day.

In accordance with SCAQMD’s LST methodology, screening-level construction LSTs are based on the acreage disturbed per day based on equipment use. Based on the anticipated equipment use, construction activities would disturb approximately 1.5 acres per day. Therefore, the 1.5-acre LSTs are the screening thresholds for construction of the proposed project in the analysis included under Section 5.1.3, *Environmental Impacts*. The construction screening-level LSTs in SRA 17 are shown in Table 5.1-6 for sensitive receptors within 82 feet (25 meters).

The five-acre LSTs are also applicable for project operation. However, because the project is not an industrial project that has the potential to emit substantial sources of stationary emissions, operational LSTs are not an air quality impact of concern associated with the project.

5.1.3 Environmental Impacts

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with the type and scale of development associated with the Warner Avenue Widening from Main Street to Grand Avenue project. SCAQMD publishes the *CEQA Air Quality Handbook* (Handbook), with updates on its Web site that are intended to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts. The Handbook provides standards, methodologies, and procedures for conducting air quality analyses in environmental impact reports and was used extensively in the preparation of this analysis.

SCAQMD has published two additional guidance documents—“Localized Significance Threshold Methodology for CEQA Evaluations” (2003) and “Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology” (2006)—that provide guidance in evaluating localized effects from emissions during construction. These documents were used to prepare this analysis, as was the California Emissions Estimator Model (CalEEMod), Version 2011.1.1, for determination of daily construction emissions, and guidance in the SCAQMD Final Localized Significance Threshold Methodology for localized construction impacts. Operation-related emissions were calculated using EMFAC2011. Construction emissions are based on the construction schedule, activities, and equipment mix provided by the City and IBI Group. Where specific information regarding project-related construction fleet mix was not available, construction assumptions were based on CalEEMod defaults (see Appendix D). Operational emissions impacts are based on the traffic information provided by IBI Group.



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The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.1-1: THE PROJECT WOULD NOT AFFECT REGIONAL POPULATION, HOUSING, AND EMPLOYMENT GROWTH PROJECTIONS IN THE SCAG REGION AND WOULD THEREFORE BE CONSISTENT WITH THE AIR QUALITY MANAGEMENT PLAN. [THRESHOLD AQ-1]

Impact Analysis: A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals contained in the AQMP.

The regional emissions inventory for the SoCAB is compiled by SCAQMD and SCAG. Regional population, housing, and employment projections developed by SCAG are based, in part, on the county's general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP. These demographic trends are incorporated into the Regional Transportation Plan (RTP)/ Sustainable Communities Strategy (SCS), compiled by SCAG to determine priority transportation projects and vehicle miles traveled (VMT) within the SCAG region. The proposed project is not a regionally significant project as defined by SCAG. Because the proposed project is not regionally significant, changes in the population, housing, or employment growth projections do not have the potential to substantially affect SCAG's demographic projections and therefore the assumptions in SCAQMD's AQMP. Furthermore, the project is consistent with the Orange County Transportation Authority's (OCTA) Master Plan of Arterial Highways (MPAH). OCTA traffic forecasts are the basis of traffic modeling within the county and are based on a six-lane roadway. Therefore, the proposed project would not exceed the assumptions in the AQMP and would be consistent with the AQMP.

IMPACT 5.1-2: SHORT-TERM CONSTRUCTION EMISSIONS WOULD NOT EXCEED SCAQMD'S REGIONAL SIGNIFICANCE THRESHOLDS AND WOULD NOT CUMULATIVELY CONTRIBUTE TO THE NONATTAINMENT DESIGNATIONS OF THE SOUTH COAST AIR BASIN. [THRESHOLDS AQ-2 AND AQ-3]

Impact Analysis: Construction activities produce combustion emissions from various sources, such as onsite heavy-duty construction vehicles, vehicles hauling materials to and from the site, and vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM₁₀ and PM_{2.5}) from demolition and soil-disturbing activities, such as grading and excavation. Air pollutant emissions from construction activities onsite would vary daily as construction activity levels change.

As part of the roadway widening effort, the City would acquire and subsequently demolish residential and commercial properties. Other construction activities include the removal and relocation of the existing overhead electrical lines (OHE). For purposes of this modeling, it is assumed that the roadway improvements would be completed in quarter-mile sections at a time. Improvements to the roadway would commence after demolition of the structures within the right-of-way and removal and relocation of the OHE. Duration to complete the roadway widening improvements for each quarter-mile section is anticipated at four months. An estimate of maximum daily construction emissions for the proposed project is provided in Table 5.1-7. As shown in the table, project-related construction activities would not generate criteria air pollutants that would exceed the SCAQMD regional emissions thresholds. Therefore,

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project-related short-term emissions would not significantly contribute to the nonattainment designations of the SoCAB and its impacts to the regional air quality would be less than significant.

**Table 5.1-7
Maximum Daily Construction Regional Emissions
(in pounds per day)**

Construction Phase	Pollutants ^{1,2}					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Demolition (Structures and Building Pads)	3	22	18	<1	3	1
Overhead Electrical Removal	1	11	6	<1	1	<1
Demolition (Asphalt/Curb/Gutter)	10	88	70	<1	31	4
Grading (Removal Fill/Sub-base)	4	48	29	<1	6	2
Paving (Aggregate Base)	2	11	8	<1	1	1
Paving (Topcoat)	2	11	8	<1	1	1
Maximum Daily Emissions	10	88	70	<1	31	4
SCAQMD Regional Construction Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod, Version 2011.1.1. Totals may not total to 100 percent due to rounding.

¹ Based on construction information provided and verified by the City and IBI Group. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.

² Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186-compliant sweepers.



IMPACT 5.1-3: THE PROJECT WOULD NOT GENERATE AN INCREASE IN MOBILE SOURCES OF AIR POLLUTION THAT EXCEED SCAQMD'S REGIONAL OPERATIONAL SIGNIFICANCE THRESHOLDS. [THRESHOLDS AQ-2 AND AQ-3]

Impact Analysis: The proposed project would widen an approximately one-mile stretch of Warner Avenue from four to six lanes from Main Street to Grand Avenue. Operation of the proposed project would not generate new stationary or mobile sources of air pollution. However, the project has the potential to redistribute traffic on the local roadway network as a result of an increase in capacity on Warner Avenue. To estimate the increase in air pollutant emissions from the increase in traffic volumes on Warner Avenue associated with the project, air pollutant emissions generated along the one-mile stretch of Warner Avenue were estimated using EMFAC2011. The analysis was based on the future projected traffic volumes compared to the existing traffic volumes of 23,814 and 28,640 as provided in the project traffic study, Appendix L. Air pollutant emissions generated along Warner Avenue with and without the project at year 2012, opening year 2020, and forecast year 2035 are shown in Table 5.1-8. As shown in this table, the increase in air pollutant emissions on Warner Avenue would not exceed the SCAQMD regional significance thresholds. Therefore, emissions would not significantly contribute to the nonattainment designations of the SoCAB. Impacts from air pollutant emissions from the operational phase would be less than significant.

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**Table 5.1-8
Maximum Daily Operational Regional Emissions**

Construction Phase	Criteria Air Pollutant Emissions (lbs/day)					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Year 2012						
Without Project	19	44	176	0	4	2
With Project	20	46	184	0	4	2
Increase Due to the Project	1	2	8	0	0	0
SCAQMD Standard	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No
Opening Year 2020						
Without Project	12	23	97	0	4	2
With Project	12	23	98	0	4	2
Increase Due to the Project	0	0	1	0	0	0
SCAQMD Standard	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No
Forecast Year 2035						
Without Project	9	14	66	0	4	2
With Project	9	15	69	0	4	2
Increase Due to the Project	0	1	3	0	0	0
SCAQMD Standard	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Source: EMFAC2011.

IMPACT 5.1-4: CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROPOSED PROJECT COULD EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS OF COARSE PARTICULATE MATTER (PM₁₀). [THRESHOLD AQ-4]

Impact Analysis: The proposed project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevated levels. Unlike the mass of construction emissions shown in the regional emissions analysis in Table 5.1-8, described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or $\mu\text{g}/\text{m}^3$) and can be correlated to potential health effects (see Table 5.1-5). LSTs are the amount of project-related emissions (lbs/day) at which localized concentrations (ppm or $\mu\text{g}/\text{m}^3$) could exceed the ambient air quality standards for criteria air pollutants for which the SoCAB is designated nonattainment. LSTs are based on the size of the project site and distance to the nearest sensitive receptor. Thresholds are based on the California AAQS, which are the most stringent AAQS, established to provide a margin of safety in the protection of the public health and welfare. They are designed to protect sensitive receptors most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise.

Localized Construction Analysis

Construction LSTs are based on the size of the project site, distance to the nearest sensitive receptor, and Source Receptor Area (SRA). Receptors near the project site include the surrounding residential and commercial uses. Air pollutant emissions generated by construction activities are anticipated to cause temporary increases in air pollutant concentrations.

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Onsite construction emissions generated are shown in Table 5.1-9. As shown in the table, maximum daily construction emissions would not exceed the SCAQMD LSTs for NO_x, CO, and PM_{2.5}. However, the maximum daily emissions of PM₁₀ generated during demolition and debris-hauling activities would exceed the PM₁₀ LST. Consequently, impacts to localized air quality from project-related construction activities would be potentially significant. Implementation of Mitigation Measure AQ-1, which would limit the daily amount of demolition debris that can be hauled, would reduce this impact to less than significant.

**Table 5.1-9
Maximum Daily Onsite Construction Localized Emissions**

Source	Pollutants ^{1,2}			
	NO _x	CO	PM ₁₀	PM _{2.5}
Demolition (Structures and Building Pads)	13	12	2	1
Overhead Electrical Removal	11	6	<1	<1
Demolition (Asphalt/Curb/Gutter)	8	7	24	1
Grading (Removal Fill/Sub-base)	7	7	1	1
Paving (Aggregate Base)	10	7	1	1
Paving (Topcoat)	10	7	1	1
Maximum Daily Emissions	13	12	24	1
SCAQMD LST	98	600	5	4
Exceeds Threshold?	No	No	Yes	No

Source: CalEEMod Version 2011.1.1., and SCAQMD, Localized Significance Methodology, 2006, October, Appendix A.

Notes: Construction NO_x, CO, PM₁₀, and PM_{2.5} LSTs are based on 1.5 acres disturbed per day with receptors within 82 feet (25 meters) in SRA 17. In accordance with SCAQMD methodology, only onsite stationary sources and mobile equipment occurring on the project site are included in the analysis.

¹ Air quality modeling based on a construction schedule and equipment mix provided and verified by the City and IBI Group. Where specific construction information was not available, construction assumptions were based on CalEEMod defaults.

² Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186-compliant sweepers.



IMPACT 5.1-5: REDISTRIBUTION OF TRAFFIC IN VICINITY OF WARNER AVENUE WOULD NOT EXPOSE OFFSITE SENSITIVE RECEPTORS TO SUBSTANTIAL CONCENTRATIONS OF AIR POLLUTANTS. [THRESHOLD AQ-4]

Impact Analysis: Land uses that have the potential to generate substantial stationary sources of emissions and would require a permit from SCAQMD include industrial land uses, such as chemical processing, and warehousing operations where substantial truck idling could occur onsite. The proposed project is a roadway improvement project and would not result in construction of stationary sources. Therefore, operation of the proposed project would not generate substantial quantities of emission from onsite stationary sources and no significant impacts would occur.

CO Hotspot Analysis

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. At the time of the 1993 Handbook, the SoCAB was designated nonattainment under the California AAQS and National AAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the

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state have steadily declined. In 2007, the SoCAB was designated in attainment for CO under both the California and National AAQS. SCAQMD conducted a CO hot spot analysis for attainment at the busiest intersections in Los Angeles during the peak morning and afternoon periods and did not predict a violation of CO standards.⁴ As identified in SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in previous years, prior to redesignation, were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection.

Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2011). The proposed project would not generate new trips, although it would redistribute trips. However, the redistribution of trips due to proposed project would not result in the volume of traffic required to generate a CO hotspot (IBI Group 2013). Therefore, CO hotspots are not an environmental impact of concern for the proposed project. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

5.1.4 Cumulative Impacts

In accordance with SCAQMD's methodology, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment contributes to the cumulative impact. Cumulative projects include new development and general growth in the project area. The greatest source of emissions in the SoCAB is mobile sources. Due to the extent of the area potentially impacted from cumulative project emissions (i.e., the SoCAB), SCAQMD considers a project cumulatively significant when project-related emissions exceed the SCAQMD regional emissions thresholds shown in Table 5.1-4.

Construction

The SoCAB is designated nonattainment for O₃, PM_{2.5}, PM₁₀, and lead (Los Angeles County only) under the California and National AAQS and nonattainment for NO₂ under the California AAQS.⁵ Construction of cumulative projects will further degrade the regional and local air quality. Air quality will be temporarily impacted during construction activities. However, with implementation of Mitigation Measure AQ-1, construction emissions associated with the proposed project would not exceed the SCAQMD's regional construction emissions thresholds. In consideration of the preceding factors, the project's contribution to cumulative short term construction-related air quality impacts would be rendered less than considerable, and therefore less than cumulatively significant.

Operation

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by the SCAQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. The project would not generate either

⁴ The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

⁵ CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ under the national AAQS on March 25, 2010, because the SoCAB has not violated federal 24-hour PM₁₀ standards during the period from 2004 to 2007. However, the EPA has not yet approved this request.

stationary or mobile sources of air pollutants. However, the project would cause traffic volumes in the local vicinity to be redistributed. The increase in traffic on Warner Avenue would not generate a substantial increase in air pollutants along this roadway segment. No significant cumulative impacts were identified with regard to CO hotspots. In consideration of the preceding factors, the project's contribution to cumulative long term operation-related air quality impacts would be rendered less than considerable, and therefore less than cumulatively significant.

5.1.5 Existing Regulations

- SCAQMD Rule 201: Permit to Construct
- SCAQMD Rule 402: Nuisance Odors
- SCAQMD Rule 403: Fugitive Dust
- SCAQMD Rule 1113: Architectural Coatings
- SCAQMD Rule 1403: Asbestos Emissions from Demolition/Renovation Activities
- SCAQMD Rule 1186: Street Sweeping
- CARB Rule 2480 (13 CCR 2480): Airborne Toxics Control Measure to Limit School Bus Idling and Idling at Schools: limits nonessential idling for commercial trucks and school buses within 100 feet of a school.
- CARB Rule 2485(13 CCR 2485): Airborne Toxic Control Measure to Limit Diesel-Fuel Commercial Vehicle Idling: limits nonessential idling to five minutes or less for commercial trucks.
- CARB Rule 2449(13 CCR 2449): In-Use Off-Road Diesel Idling Restricts: limits nonessential idling to five minutes or less for diesel-powered off-road equipment.
- Motor Vehicle Standards (AB 1493).



5.1.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.1-1, 5.1-2, 5.1-3 and 5.1-5.

Without mitigation, the following impact would be **potentially significant**:

- | | |
|--------------|---|
| Impact 5.1-4 | Construction activities associated with the proposed project would expose sensitive receptors to substantial pollutant concentrations of coarse particulate matter (PM ₁₀). |
|--------------|---|

5.1.7 Mitigation Measures

Impact 5.1-4

- | | |
|------|--|
| AQ-1 | Prior to construction contract award, the City of Santa Ana shall specify in the construction special provisions that the construction contractor shall include limitations on the amount of |
|------|--|

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roadway debris to be removed from the site. During demolition of the roadway including asphalt, roadbed, curb, gutter, and sidewalks, the contractor shall limit the daily amount of demolition debris haul to a maximum of 38 trucks per day if 12-ton capacity haul trucks are used, assuming a one-way haul distance of 9 miles. If truck haul distance for roadway debris is greater than 9 miles, then hauling shall be restricted to no more than 684 miles per day. The demolition debris hauling phase shall not overlap with any other construction phases, including grading. These requirements shall be noted on all construction management plans and verified by the City of Santa Ana during demolition and grading activities.

5.1.8 Level of Significance After Mitigation

Impact 5.1-4

As shown in Table 5.1-10, Mitigation Measure AQ-1 would reduce construction-related PM₁₀ emissions to below the PM₁₀ LST. This measure would limit the amount of demolished roadway debris (i.e., asphalt, curb, gutter, etc.) that can be hauled offsite per day in order to reduce PM₁₀ fugitive dust emissions from hauling operations. Therefore, construction emissions would not exceed the California AAQS and construction of the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Impact 5.1-4 would be less than significant with implementation of mitigation.

**Table 5.1-10
Maximum Daily Onsite Construction Localized Emissions: Mitigated**

Source	Pollutants ^{1,2,3}			
	NO _x	CO	PM ₁₀	PM _{2.5}
Demolition (Structures and Building Pads)	13	12	2	1
Overhead Electrical Removal	11	6	<1	<1
Demolition (Asphalt/Curb/Gutter)	8	7	4.84	1
Grading (Removal Fill/Sub-base)	7	7	1	1
Paving (Aggregate Base)	10	7	1	1
Paving (Topcoat)	10	7	1	1
Maximum Daily Emissions	13	12	4.84	1
SCAQMD LST	98	600	5.00	4
Exceeds Threshold?	No	No	No	No

Source: CalEEMod Version 2011.1.1., and SCAQMD, Localized Significance Methodology, 2006, October, Appendix A.

Notes: Construction NO_x, CO, PM₁₀, and PM_{2.5} LSTs are based on 1.5 acres disturbed per day with receptors within 82 feet (25 meters) in SRA 17. In accordance with SCAQMD methodology, only onsite stationary sources and mobile equipment occurring on the project site are included in the analysis.

¹ Air quality modeling based on a construction schedule and equipment mix provided and verified by the City and IBI Group. Where specific construction information was not available, construction assumptions were based on CalEEMod defaults.

² Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186-compliant sweepers.

³ Incorporates Mitigation Measure AQ-1 which limits the amount of demolished roadway debris (i.e., asphalt, curb, gutter, et) to be hauled offsite to a maximum of 461 tons per day.

5.2 CULTURAL RESOURCES

Cultural resources include places, objects, and settlements that reflect group or individual religious, archaeological, or architectural activities, as well as fossils and human remains. Such resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements. This section of the draft environmental impact report (Draft EIR) evaluates the potential for the proposed road widening to impact cultural resources in the City of Santa Ana.

The analysis in this section is based in part on the following two technical studies.

- *Historical Resource Survey Report, Warner Avenue Road Widening Project*, Urbana Preservation & Planning, LLC, November 2009. Revised May 2013. Revised May 2014.
- *Archaeological Assessment for the Warner Avenue from Main Street to Grand Avenue Widening Project*, Cogstone Paleontology-Archaeology-History, May 2009. Revised May 2013.

Complete copies of these studies are included as Appendices E and F to this Draft EIR.

Methodology

Historical Resource Analysis

The historical resource analysis consisted of four major tasks:

- Field survey: observed and photographed all buildings and structures in the project site.
- Archival research included a review of relevant records and references resources on file at the Santa Ana Public Library History Room, the San Ana Historical Preservation Society, the City of Santa Ana Planning Division's Historic Preservation Program, and the Los Angeles Public Library.
- Technical analysis consisted of reviewing the survey area buildings under the eligibility criteria of the National Register of Historic Places, the California Register of Historical Resources, and the City of Santa Ana Register of Historic Properties. These eligibility criteria establish a threshold under which a property may be determined to meet the definition of a historical resource for the purposes of CEQA and the local planning and development discretionary review process.
- Preparation of the historical resource survey report.



Archaeological Assessment

The archaeological assessment consisted of a cultural records search at the South Central Coastal Information Center at California State University, Fullerton; a sacred lands file search by the California Native American Heritage Commission; 14 letters of inquiry to Native American tribal representatives (no responses were received); and a foot survey with visual inspection of the ground surface.

5. Environmental Analysis

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5.2.1 Environmental Setting

Native American Cultural Setting

Timeline

Three prehistoric periods are defined in studies of Native American habitation of the region.

Milling Stone Period dates back well over 6,000 years ago (8,000–3,000 radiocarbon years ago) and is characterized by plant collecting, hunting, and fishing. Sites from this period appear to be part of an expansion of settlement to take advantage of new habitats and resources that became available as sea levels stabilized between about six to five thousand years ago. Mortars and pestles were used to process plant materials.¹ Most sites were in coastal areas. Around 3,500 years ago, there is thought to have been a shift to more reliance on hunting. Sites attributed to this period appear to have been occupied by small groups of people.

Intermediate Period dates from roughly 3,000 to 1,000 years ago. Sites attributed to this period indicate an increased reliance on coastal resources and continued reliance on hunting and collecting. The bow and arrow were developed in this period. Mortars and pestles and bone tools appeared in greater quantities.

Late Prehistoric Period dates from approximately 1,400 years ago to 1769. Villages tend to be larger, and there appears to be an increase in smaller satellite sites, established to support the main village and reflecting seasonal use of a particular area. There seems to be greater use of localized resources and increased trade and social interaction. There is an increase in the number of sites in the area, which some researchers believe is due to population increase. Settlement was expanded into the hills and canyons inland.

Cultures

The project region was inhabited by the Juaneño, and possibly the Gabrielino, at the time of European contact. After European contact, many Juaneño at Mission San Juan Capistrano and many Gabrielino were induced to live at Mission San Gabriel in the present-day City of San Gabriel in Los Angeles County. Both groups became known by the names of missions built in their territories. The Juaneño and Gabrielino suffered population decline due to introduced diseases and restrictions on their native reproductive practices by the padres. Most mission Indians were trained as vaqueros (cattle herders), sheepshearers, farm laborers, and domestic laborers and continued in those professions after the missions were secularized.

Acjachemen (Juaneño) Culture

The Juaneño territory was bounded by Aliso Creek, the Santa Ana Mountains, San Onofre Creek, and the coastline. Archaeologists and linguists believe the Juaneño were a subdivision of the Luiseño because the Juaneño spoke a dialect of Luiseño at European contact.

The Juaneño were organized into villages of 50 to 150 people headed by a hereditary chief and generally located near permanent water sources. Each village used a specific territory and included

¹ A metate is a stone slab; a mano is slid by hand against a metate. By contrast, a mortar is a bowl and a pestle is rotated within a pestle (Gust 2013).

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satellite locations used for seasonal food gathering. Families and groups lived seasonally in temporary camps set up to use specific resources such as groves of oak trees, abundant game, or source rocks for stone tools.

The modern Juaneño Band of Mission Indians is very politically active and has been since the formation of the California Mission Indian Federation in the early 1900s. A formal tribal government was established in the 1980s and an official petition for federal recognition was filed. The Juaneño Band members are part of the Acjachemen Nation.

Tongva (Gabrielino) Culture

The Tongva (Gabrielino) have overlapping ethnographic boundaries with the Juaneño to the south and Chumash to the north, but they inhabited the entire Los Angeles basin, including most of Orange County. The name “Gabrielino” is Spanish in origin and was used in reference to the Native Americans associated with the Mission San Gabriel. It is unknown what these people called themselves before the Spanish arrived, but today they call themselves “Tongva,” meaning “people of the earth.”

Villages comprised 50 to 100 people. Each community included one or more extended families or lineal kinship groups (clans). Each village was united under the leadership of a chief who inherited the position from his father. The chief was the leader of the religious and secular life of the community. Shamans were also important as doctors, therapists, philosophers, and intellectuals.

Like the Juaneño, the Gabrielino tribe used local plants and animals and coastal resources. Rabbit and deer were hunted, and acorns, buckwheat, chia, berries, fruits, and many other plants were collected. Artifacts associated with their villages include a wide array of chipped stone tools, including knives and projectile points, wooden tools like digging sticks and bows, and ground stone tools like bedrock and portable mortars and pestles. Local plants were used to build shelters as well as for medicines.



Historical Setting

Santa Ana

The town of Santa Ana was founded in 1869 by William Spurgeon, who, with a partner, purchased 74 acres from the Rancho Santiago de Santa Ana. The town was originally 24 blocks of about 10 lots each. Santa Ana grew slowly at first. The Southern Pacific Railroad reached Santa Ana from Los Angeles in 1877; it extended from Los Angeles through Santa Ana to San Diego 10 years later. The City of Santa Ana incorporated in 1886 at the height of a real estate boom. The County of Orange was incorporated in 1889; and Santa Ana was named the county seat.

Santa Ana’s economy was mainly agricultural until the 1940s. The City’s population was 37,000 in 1940. Housing construction overtook agriculture among the region’s industries after World War Two.

Delhi Neighborhood

The existing Delhi neighborhood extends from Main Street on the west to Standard Avenue on the east, and extends from Warner Avenue south to Dyer Road and north to St. Andrew Place.

Originally called Delhi Road, Warner Avenue developed as an east–west thoroughfare and was intersected by the Pacific Electric Railway Lines along present-day Rouselle Street. The City of Santa Ana’s first official zone map (1927) shows the east City boundaries at Main Street next to the project area. The first listings for residential addresses on Delhi Road appeared in the 1929 Orange County

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Directory, indicating that although the area was outside of City boundaries, it was recognized as a developed residential community of Santa Ana.

In the 1940s the City limits were extended east of Main Street to include all of Delhi Road between Main Street and Standard Avenue. A 1940s street map for Santa Ana delineates the expanded network of residential blocks that led to the industrial sections of the City in the vicinity of Standard Avenue and the Southern Pacific Railroad tracks. This street map shows Delhi Elementary School, established in 1915 at 402 E. Delhi Road, next to the intersection of Delhi Road and Oak Street.

Surrounding the school was a block of land identified as “City Yard,” which was later renamed Delhi Park. The original four-room Delhi Elementary School was eventually replaced with a modern school campus, and in 2003 James Monroe Elementary School was built immediately south of the old school grounds fronting Central Avenue.

By 1949, a four-acre portion of the City Yard property (Delhi Park) was acquired by the California National Guard for use as the National Guard Armory. In 1956–1957, a new armory building was constructed on the site of the Delhi Elementary School, fronting the south side of Delhi Road between Rouselle Street and Oak Street. The armory building is at 612 E. Warner Avenue. Also in the 1950s, industrial uses emerged east of Standard Avenue, including the Townsend Company’s Cherry Rivet Plant, built in 1952 at 1224 E. Warner Avenue, and the Sakioka Packing Company plant, built in 1953 at 1302 E. Warner Avenue.

According to historical aerial photographs, the surrounding area was used largely for agricultural purposes prior to being developed with residential and commercial uses.

Cultural Resources

Historical Resources

Historic resources are defined as buildings, structures, objects, sites, and districts of significance in history, archaeology, architecture, and culture. These resources include intact structures of any type that are 50 years or more of age. These resources are sometimes called the “built environment” and can include, in addition to houses, structures such as irrigation works and engineering features. Historic resources are preserved because they provide a link to a region’s past as well as a frame of reference for a community. Often these sites are a source of pride for a city.

As part of the historical resource study, the proposed project area was surveyed at an intensive level to identify, document, and evaluate all buildings or structures observed to be at least 45 years of age. The historical resource survey boundaries included all parcels proposed for partial or full acquisition as identified in the Draft Relocation Impact Statement (April 2013) prepared for the project (see Appendix K). As part of the proposed project 56 properties are proposed for full or partial acquisition. Of these 56 properties 42 are developed with buildings or structures built before 1969 and are at least 45 years of age. 11 properties are developed with buildings or structures built before between 1970 and 2013, and three properties are vacant without buildings or structures. Within the proposed project area:

- 2 buildings or structures were constructed between 1900 and 1929
- 15 buildings or structures were constructed between 1940 and 1949
- 20 buildings or structures were constructed between 1950 and 1959
- 5 buildings or structures were constructed between 1960 and 1969
- 11 buildings or structures were constructed between 1970 and the present.

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The records search did not identify any significant events associated with properties in the survey area. Similarly, no direct association with important persons in local, state, regional, or national history was substantiated for any of the survey area properties, and none of the historic-era buildings (constructed prior to 1965) observed in the survey area was found to be a significant example of domestic, commercial, or industrial/utilitarian architecture. Some of the historic-era buildings have undergone alterations through the decades, which has compromised individual integrity such that any potential for eligibility has been removed. Other buildings are considered ordinary and do not embody the distinctive characteristics of a specific style, type, period, or method of construction. Therefore, none of the survey area properties have the potential to yield further information important to local, state, regional, or national history.

The survey area was found to have been primarily undeveloped and utilized for agricultural purposes until the speculative land development activities began to occur in a comprehensive manner in the 1940s. Prior to the 1940s few houses were constructed in the area, with at least two of the circa 1920s properties observed having been relocated to parcels within the survey area in approximately 1935 and 1955. In the 1940s residential subdivision development began to occur on the streets immediately north and south of Warner Avenue with homes built in the Modern Minimal Traditional and transitional Ranch styles. In the 1950s commercial strip shopping centers were built at the southwest and northeast ends of the survey area, with additional commercial business buildings and industrial complexes installed at the northeast and southeast sections of the survey area.

No properties were identified as being historically or architecturally significant within the proposed project area and survey boundaries. Historical research did not reveal any significant events associated with any other properties in the survey area. Similarly, a direct association with important persons in local, state, regional, or national history was not substantiated for any of the survey area properties. None of the historic-era buildings observed in the project boundaries were found to be significant examples of domestic, commercial, or industrial/utilitarian architecture. Some of the buildings have undergone alterations through the decades that appear to have compromised individual integrity such that any potential for eligibility has been removed, and other buildings were considered ordinary and not embodying the distinctive characteristics of a specific style, type, period, or method of construction. None of the survey area properties were identified as having the potential to yield future information important to local, state, regional, or national history.

Although not registered, the California National Guard Armory Building at 612 East Warner Avenue is associated with Cold War Era military activities in Santa Ana and is used as a community center for local community groups and public-serving organizations. The proposed project would not result in any physical alteration of the California National Guard Armory Building or property; therefore it is not analyzed in the historical resource study.

None of the buildings or structures within the survey area are included on the National Register of Historic Places, the California Register of Historical Resources, or the City of Santa Ana Register of Historic Places, nor have any survey area buildings been previously surveyed or evaluated for eligibility on the local, state or national registers. No survey area properties are listed as California Historic Landmarks or Points of Historical Interest, and none of the survey area properties are included on the California State Office of Historic Preservation's Historic Property Data File for Orange County. None of the properties appear to have been previously presented to or discussed by the State Historic Resources Commission. No buildings or structures in the survey boundaries were identified as being eligible for inclusion on the National Register, the California Register, or the Local Register. No historical resources are present within the survey boundaries.



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Archaeological Resources

The nearest prehistoric archaeological site identified in the cultural records search is approximately one mile from the site. No archaeological resources were identified in the foot survey by Cogstone on April 6, 2009. Shallow soils in most of the project site have been previously disturbed by construction of Warner Avenue, other paved areas including parking lots, driveways, and sidewalks, and buildings.

Regulatory Setting

Federal and State Regulations

National Historic Preservation Act

The National Historic Preservation Act of 1966 authorized the National Register of Historic Places and coordinates public and private efforts to identify, evaluate, and protect the nation's historic and archaeological resources. The National Register includes districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

Section 106 (Protection of Historic Properties) of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to take into account the effects of their undertakings on historic properties. Section 106 review refers to the federal review process designed to ensure that historic properties are considered during federal project planning and implementation. The Advisory Council on Historic Preservation, an independent federal agency, administers the review process, with assistance from state historic preservation offices.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 regulates the protection of archaeological resources and sites on Federal lands and Indian lands.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) is a federal law passed in 1990 that provides a process for museums and federal agencies to return certain Native American cultural items, such as human remains, funerary objects, sacred objects, or objects of cultural patrimony, to lineal descendants and culturally affiliated Indian tribes.

California Public Resources Code

Archaeological, paleontological, and historical sites are protected pursuant to a wide variety of state policies and regulations enumerated under the California Public Resources Code. In addition, cultural and paleontological resources are recognized as nonrenewable resources and therefore receive protection under the California Public Resources Code and CEQA.

- California Public Resources Code 5020–5029.5 continued the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. The commission oversees the administration of the California Register of Historical Resources and is responsible for the designation of state historical landmarks and historical points of interest.
- California Public Resources Code 5079–5079.65 defines the functions and duties of the Office of Historic Preservation (OHP). The OHP is responsible for the administration of federally and state-mandated historic preservation programs in California and the California Heritage Fund.

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- California Public Resources Code 5097.9–5097.991 provides protection to Native American historical and cultural resources, and sacred sites and identifies the powers and duties of the Native American Heritage Commission (NAHC). It also requires notification of discoveries of Native American human remains to descendants and provides for treatment and disposition of human remains and associated grave goods.

Local Ordinances

The City of Santa Ana Historic Preservation Ordinance is in Municipal Code Section 30. It provides for the local designation of individual historic properties and historic districts and provides a process for rehabilitation, modification, and demolition of historic properties. In order to be included on the City's Register of Historic Properties (local register), any building, structure, object, or site must be at least 50 years of age and must meet one of the following eligibility conditions pursuant to Section 30-2:

- Buildings, structures, or objects with distinguishing characteristics of an architectural style or period, that exemplify a particular architectural style or design feature;
- Works of notable architects, builders, or designers whose style influenced architectural development;
- Rare buildings, structures, objects, or original designs;
- Buildings, structures, objects, or sites of historical significance which include places:
 - Where important events occurred;
 - Associated with famous people, original settlers, renowned organizations and businesses;
 - Which were originally present when the city was founded;
 - That served as important centers for political, social, economic, or cultural activity.
- Sites of archaeological importance;
- Buildings or structures that were connected with a business or use which was once common, but is now rare.



Upon designation by the City's Historic Resources Commission, a property included in the local register shall be categorized as a landmark, key, or contributive property according to the following definitions and guidelines included in Section 30-2.2.

- **Landmark Category**
 - The property is included on the National Register of Historic Places or appears to be eligible for inclusion on the National Register;
 - The property is listed on the California Register of Historical Places or appears to be eligible to be listed on the California Register;
 - The property has a historical/cultural significance to the city;
 - The property has a unique architectural significance.
- **Key Category**
 - The property has a distinctive architectural style or quality;
 - The property is characteristic of a significant period in the history of the city;
 - The property is associated with a significant person or event in the city.

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- Contributive Category
 - The property contributed to the overall character and history of a neighborhood or district and is a good example of period architecture.

5.2.2 Thresholds of Significance

According to CEQA Guidelines Appendix G, a project would normally have a significant effect on the environment if the project would:

- CUL-1 Cause a substantial adverse change in the significance of an historical resource pursuant to Section 15064.5.
- CUL-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- CUL-3 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- CUL-4 Disturb any human remains, including those interred outside of formal cemeteries.

CEQA Guidelines Section 15064.5 provides direction for determining significance of impacts to archaeological and historical resources. Generally, a resource is considered “historically significant” if it meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code Sections 5024.1, Title 14 CCR, Section 4852), including the following:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values;
- Has yielded, or may be likely to yield, information important in prehistory or history.

The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources, or is not included in a local register of historical resources, does not preclude a lead agency from determining that the resource may be a historical resource.

The Initial Study, included as Appendix A of this EIR, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold CUL-3, impacts to fossils and unique geological features
- Threshold CUL-4, accidental discovery of human remains

These impacts will not be addressed in the following analysis.

5.2.3 Environmental Impacts

Impacts to cultural resources include impacts to resources on or above the ground surface, including buildings; and inadvertent impacts to buried resources during excavation, grading, and/or construction.

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.2-1: THE PROJECT WOULD NOT ADVERSELY IMPACT A HISTORICALLY SIGNIFICANT RESOURCE. [THRESHOLD CUL-1]

Impact Analysis:

The proposed project would require the removal of 33 buildings, listed in Table 5.2-1. None of the buildings have been identified as meeting the definition of a historical resource. None of the buildings proposed for City acquisition and removal were determined to be eligible for listing in the California Register of Historic Resources; the eligibility criteria are listed above in Section 5.2.2. No impact to historical resources would occur.

**Table 5.2-1
Potentially Impacted Properties**

<i>Address</i>	<i>Property Type</i>	<i>Year Built</i>
2245 Main Street	Gas Station	1962
2246 Cypress Street	Single-Family	1955
2245 Cypress Street	Single-Family	1946
209 Warner Avenue	Multi-Family	1961
215 Warner Avenue	Multi-Family	1946
219 Warner Avenue	Single-Family	1946
2246 Orange Avenue	Single-Family	1958
2245 Orange Avenue	Single-Family	1946
309 Warner Avenue	Single-Family	1946
315 Warner Avenue	Single-Family	1946
2246 Maple Avenue	Single-Family	1950
2301 Main Street	Commercial	1968
128 Warner Avenue	Single-Family	1920
124 Warner Avenue	Single-Family	1922/1935
204-216 Warner Avenue	Commercial*	1955
230 Warner Avenue	Single-Family*	1954
302 Warner Avenue	Single-Family*	1946
310 Warner Avenue	Single-Family*	1954
2243 Maple Street	Single-Family*	1946
2245 Maple Street	Single-Family	1946
2247 Rouselle Street	Single-Family	1948
2246 Oak Street	Single-Family	1946
2245 Oak Street	Single-Family	1946
2246 Kilson Drive	Single-Family	1946
2245 Kilson Drive	Single-Family	1961
705 Warner Avenue	Single-Family	1946
402 Warner Avenue	Single-Family	1954



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**Table 5.2-1
Potentially Impacted Properties**

<i>Address</i>	<i>Property Type</i>	<i>Year Built</i>
2245 Hickory Street	Single-Family	1950
809 Warner Avenue	Single-Family	1946
2244 Halladay Street	Single-Family	1948
2245 Halladay Street	Single-Family	1951
905 Warner Avenue	Single-Family	1955
909 Warner Avenue	Single-Family	1955
909 Warner Avenue	N/A	N/A
2246 Cedar Street	Single-Family	1952
2247 Cedar Street	Single-Family	1952
2246 Evergreen Street	Single-Family	1952
2247 Evergreen Street	Single-Family	1952
1106 Warner Avenue	Multi-Family*	1958
2246 Standard Avenue	Single-Family	1952
1201-1215 Warner Avenue	Commercial*	1979
1221 Warner Avenue	Commercial*	1979
1231-1243 Warner Avenue	Commercial*	1980
None None	Railroad*	Unknown
1301-1307 Warner Avenue	Commercial*	1970
2301 Evergreen Street	Single-Family*	1952
1224 Warner Avenue	Commercial*	1952
1312 Warner Avenue	Commercial*	1960
1320 Warner Avenue	Civic Fire Station*	1987
2400 Grand Avenue	Commercial*	1990
1504 Warner Avenue	Commercial*	1975
1500 Brookhollow Drive	Commercial*	1975
1502 Warner Avenue	Commercial*	2003
1530 Warner Avenue	Commercial*	2003
1532 Warner Avenue	Commercial*	2003

Note: * = Partial property acquisition proposed; building impact not anticipated

IMPACT 5.3-2: PROJECT-RELATED EARTHWORK MAY RESULT IN A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE. [THRESHOLD CUL-2]

Impact Analysis:

The project would involve ground disturbance up to a depth of about 30 inches. The total area that would be paved, including the roadway, curb and gutter, bicycle lanes, and sidewalks, is about 13.3 acres. The total area of disturbance is estimated as 24.7 acres. Considering the disturbed nature of the project site and the depth of grading necessary to widen Warner Avenue the likelihood of discovering archaeological resources during construction is low. However, because of the early development in this area, previously undiscovered archaeological resources could be damaged during construction. The possible destruction of archaeological resources is considered a significant impact. Implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3 would reduce impacts to less than significant.

5.2.4 Cumulative Impacts

The project site does not contain any historically significant properties. The proposed project, in conjunction with other planned and pending development in Santa Ana, would cumulatively increase the potential for cultural resources to be altered or damaged. Because the potential to create adverse impacts to such resources depends on the nature of each proposed project, including its specific site and surroundings, cultural resource issues must be addressed on a case-by-case basis. Each development proposal received by the City is required to undergo environmental review. If there is a potential for significant impacts on cultural resources, an investigation will be required to determine the nature and extent of the resources and identify appropriate mitigation measures. Neither the proposed project nor cumulative development is expected to result in significant impacts to cultural resources, provided site-specific surveys and evaluations are conducted to determine whether the resources are unique resources, and appropriate mitigation measures are implemented prior to demolition and during grading and excavation. Implementation of the appropriate mitigation measures would reduce cumulative impacts to less than significant.

In consideration of the preceding factors, the project's contribution to cumulative cultural resource impacts would be rendered less than considerable, and therefore less than cumulatively significant.

5.2.5 Existing Regulations and Standard Conditions

Federal

- United States Code, Title 16, Sections 470 et seq.: National Historic Preservation Act
- United States Code, Title 16, Sections 470aa et seq.: Archaeological Resources Protection Act
- United States Code, Title 25, Sections 3001 et seq.: Native American Graves Protection and Repatriation Act

State

- California Public Resources Code Sections 5020–5029.5: Authorized State Historical Resources Commission.
- California Public Resources Code Sections 5079–5079.65: Authorized Office of Historic Preservation.
- California Public Resources Code Sections 5097.9–5097.99: Protections for Native American historical and cultural resources and sacred sites; authorized Native American Heritage Commission (NAHC); prescribes responsibilities respecting discoveries of Native American human remains.

5.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, Impact 5.3-1 would be less than significant.

Without mitigation, the following impact would be **potentially significant**:



5. Environmental Analysis

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- Impact 5.3-2 Project-related earthwork may result in a substantial adverse change in the significance of an archaeological resource.

5.2.7 Mitigation Measures

Impact 5.3-2

CUL-1 Prior to the initiation of project-related earthmoving activities, the City of Santa Ana project manager or their designee shall retain a county-certified qualified archaeologist. The archaeologist must have knowledge of both prehistoric and historical archaeology, and shall remain on call in the event of a discovery.

CUL-2 Prior to the start of ground-disturbing activities on the project site, the City of Santa Ana project manager or their designee shall ensure that a qualified archaeologist or another mitigation program staff member has conducted cultural resources sensitivity training for all construction workers involved in moving soil or working near soil disturbance.

- Construction personnel, including heavy-equipment operators, shall be briefed on procedures to be followed in the event that cultural remains are encountered by earthmoving activities.
- Preconstruction training shall include:
 - Review the types of archaeological resources that might be found
 - Review of laws and applicable requirements concerning the protection of cultural resources
 - Prehistoric or historic cultural resource discovery procedures
- The briefing shall be presented to new contractor personnel as necessary
- Names and telephone numbers of the monitor and other mitigation program personnel shall be provided to appropriate construction personnel

CUL-3 During project-related earthmoving activities, if cultural resources are discovered, a qualified archaeologist shall prepare a cultural resource monitoring plan. The cultural resource monitoring plan shall outline when and for how long monitoring shall occur; where on the site monitoring shall be required; methods of monitoring; types of artifacts anticipated; procedures for temporary stop and redirection of work to permit sampling, identification, and evaluation of possible resources; procedures for additional analysis; and accommodation and procedures for Native American monitors, if any.

5.2.8 Level of Significance After Mitigation

Mitigation Measures CUL-1, CUL-2, and CUL-3 would reduce potential impacts associated with archaeological resources to a level that is less than significant.

5.3 GEOLOGY AND SOILS

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for implementation of the Warner Avenue Widening from Main Street to Grand Avenue project to impact geological and soil resources in the City of Santa Ana. The analysis in this section is based in part on the following technical report:

- *Geotechnical Reconnaissance, Proposed Warner Avenue Widening between Main Street and Grand Avenue, Santa Ana, California*, GeoLogic Associates, July 20, 2009, updated March 26, 2013.

The geotechnical study is included as Appendix G of this Draft EIR.

The Geotechnical Reconnaissance in 2009, and updated Geotechnical Reconnaissance in 2013, each consisted of a literature review; foot reconnaissance; and compilation and analysis of geotechnical data from previous investigations and laboratory testing.

5.3.1 Environmental Setting

Geologic Setting

The site is in the Los Angeles Basin, a coastal plain consisting of thick layers of sediment deposited by local rivers and with a slight south-to-southwest slope. The basin is in the northwestern end of the Peninsular Ranges geomorphic province, a region of northwest-trending mountains and valleys that extends from southwestern California south into the Baja California peninsula in Mexico.

The project site is underlain by Quaternary Young Alluvial Fan and Valley Deposits. The upper areas include the subgrade of the roadway, which are recent (Holocene age) alluvial sediments deposited by the Santa Ana River. Pavement evaluation studies included 14 core holes that identified a subgrade consisting of clay-rich subgrade soils with moisture contents ranging from 5 to 20 percent.

The project site is over the Main Orange County Groundwater Basin (OCWD 2009). Groundwater near Standard Avenue north of Warner Avenue was reported at 5 to 12 feet below ground surface (bgs); near the intersection of Main Street and Warner Avenue it was reported at 8 to 10 feet bgs.

Geologic Hazards

Faults and Ground Shaking

Southern California is a seismically active region. Seven active faults within 25 miles of the project site are described below in Table 5.3-1 and are shown on Figure 5.3-1, *Fault Map*.

The amount of energy released by an earthquake determines the size of the waves that the earthquake generates. The Richter scale is a logarithmic scale of the size of earthquake waves as measured at a specific location. Each one-point increase in magnitude represents a 10-fold increase in wave amplitude and a 32-fold increase in energy. That is, a magnitude 7 earthquake produces 100 times (10 x 10) the ground motion amplitude of a magnitude 5 earthquake, and releases approximately 1,000 times (32 x 32) more energy. Another measure of earthquake size is the seismic intensity scale, which is a subjective, qualitative assessment of an earthquake's effects at a given location. The most commonly used measure of seismic intensity is called the Modified Mercalli Intensity (MMI) scale, a 12-point scale where Intensity I earthquakes are generally not felt by people; in Intensity XII earthquakes damage is



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total, and objects are thrown into the air. A given earthquake will have one magnitude; however, one earthquake will produce many levels of intensity because intensity effects vary with the location and the perceptions of the observer.

**Table 5.3-1
Active Faults within 25 Miles of the Project Site**

<i>Fault</i>	<i>Approximate Distance from Project Site, miles</i>	<i>Maximum Credible Earthquake</i>	
		<i>Moment Magnitude¹</i>	<i>Peak Ground Acceleration at Project Site (g)</i>
San Joaquin Hills Blind Thrust	1.7	6.6	0.56
Newport-Inglewood (Los Angeles Basin)	7.7	7.1	0.32
Chino – Central Avenue (Elsinore)	13.7	6.7	0.21
Whittier	13.7	6.8	0.19
Puente Hills Blind Thrust	14.6	7.1	0.25
Palos Verdes	18.9	7.3	0.19
San Jose	22.4	6.4	0.13

¹ Magnitude scales are logarithmic. Each one-point increase in magnitude represents a tenfold increase in amplitude of the waves as measured at a specific location, and a 32-fold increase in energy.

The peak horizontal ground acceleration expected to occur on the site during a maximum credible earthquake (MCE) on the San Joaquin Hills Blind Thrust is 0.56 g, where g is the acceleration of gravity. An MCE is an earthquake with a 2 percent chance of exceedance in 50 years, that is, an average return period of 2,475 years.

Ground acceleration of 0.56g correlates with intensity VIII on the MMI Scale (Wald 1999). In an intensity VIII earthquake, damage is slight in specially designed structures; considerable damage occurs in ordinary substantial buildings with partial collapse. Damage is great in poorly built structures. Chimneys, factory stacks, columns, monuments, and walls fall. Heavy furniture is overturned (USGS 2012).

Liquefaction

Liquefaction refers to loose, saturated sand or silt deposits that lose their load-supporting capability when subjected to intense shaking. Three factors contribute to susceptibility to liquefaction: (1) strong seismic ground shaking; (2) poorly compacted sediments consisting of sand or silty sand, with a clay content of less than 15 percent; and (3) shallow groundwater, with groundwater shallower than 10 feet associated with the highest risk of liquefaction.

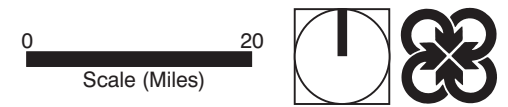
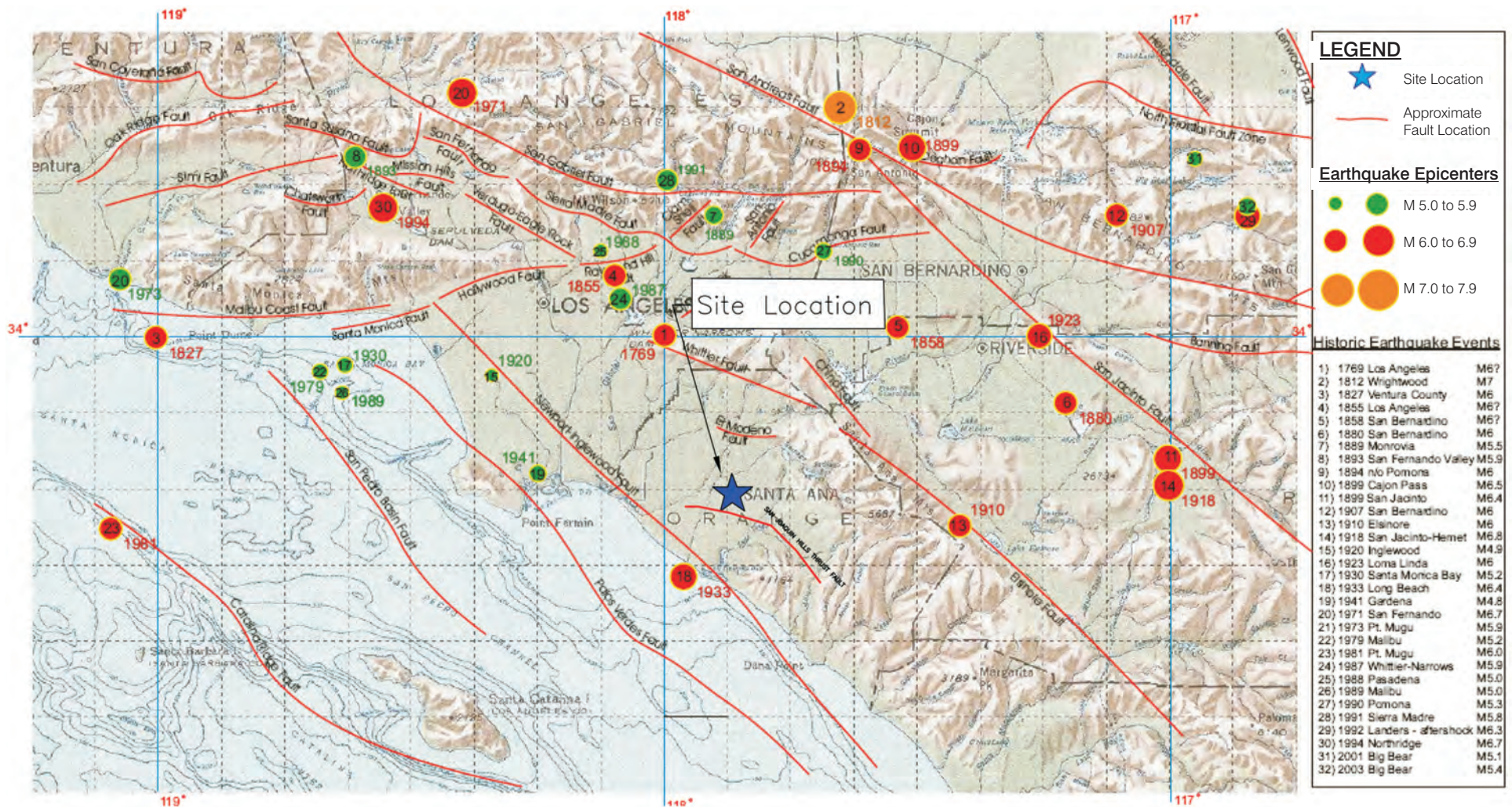
The site may be prone to liquefaction due to shallow groundwater; the site is also within a Zone of Required Investigation for Liquefaction designated by the California Division of Mines and Geology.

Lateral Spreading

Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer; the downslope movement is due to gravity and earthquake shaking combined. Such movement can occur on slope gradients of as little as one degree. Lateral spreading typically damages pipelines, utilities, bridges, and structures. Lateral spreading on the project site is not considered a substantial hazard (GeoLogic 2009).

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Fault Map



Source: Geo-Logic 2013

Warner Avenue Widening from Main Street to Grand Avenue Draft EIR

PlaceWorks • Figure 5.3-1

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Dynamic Settlement

Dynamic settlement of dry sands can occur because sand particles tend to settle and densify as a result of an earthquake. Loose, saturated, granular soils are susceptible to dynamic settlement, but silty clays and clays are not adversely affected by vibrating motion. There is some hazard of dynamic settlement onsite due to the shallow groundwater under the site.

Ground Subsidence

Common causes of soil subsidence include withdrawal of oil and groundwater from subsurface sediments. The potential for ground subsidence on the site is considered minimal, as there is no substantial pumping of shallow groundwater on or near the site (Luka 2009).

Hydrocollapse

A collapsible soil shrinks considerably when wetted, when a load is placed atop the soil, or under both conditions. Such shrinkage can damage structures built on the soil or structures such as pipelines within the soil. Given the alluvial soils and shallow groundwater onsite, most potential soil collapse has probably already occurred, and the potential for further soil collapse is considered low. It is recommended that this estimate be confirmed by subsurface investigation and testing during final geotechnical investigation (Luka 2009).

Regulatory Setting

State, regional, and local laws, regulations, plans, or guidelines related to geology and soils that are potentially applicable to the proposed project are summarized below.



State

California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into state law in 1972, as amended, with its primary purpose to mitigate the hazard of fault rupture by prohibiting the location of structures for human occupancy across the trace of an active fault. The act requires the State Geologist to delineate “Earthquake Fault Zones” along faults that are “sufficiently active” and “well defined.” The act also requires that cities and counties withhold development permits for sites within an earthquake fault zone until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting. Pursuant to this act, structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act was adopted by the state in 1990 to the public from the effects of nonsurface fault rupture earthquake hazards, including strong ground shaking, liquefaction, seismically induced landslides, or other ground failure caused by earthquakes. The goal of the act is to minimize loss of life and property by identifying and mitigating seismic hazards. The California Geological Survey (CGS) prepares and provides local governments with seismic hazard zones maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures.

California Building Code

Current law states that every local agency enforcing building regulations, such as cities and counties, must adopt the provisions of the California Building Code (CBC) within 180 days of its publication. The

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publication date of the CBC is established by the California Building Standards Commission, and the code is also known as Title 24, Part 2 of the California Code of Regulations. The most recent building standard adopted by the legislature and used throughout the state is the CBC, often with local, more restrictive amendments that are based upon local geographic, topographic, or climatic conditions. These codes provide minimum standards to protect property and the public welfare by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The procedures and limitations for the design of structures are based on site characteristics, occupancy type, configuration, structural system height, and the strength of ground motion with specified probability of occurring at the site.

California Geological Survey Special Publication 117

California Geological Survey (CGS) Special Publication 117 “Guidelines for Evaluating and Mitigating Seismic Hazards in California,” provides criteria for the evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigations. Special Publication 117 has two objectives: 1) To assist in the evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigations; and, 2) To promote uniform and effective statewide implementation of the evaluation and mitigation elements of the Seismic Hazards Mapping Act. The document includes: recommended content for site investigation reports within zones of required investigations; earthquake ground-motion parameters; analysis of earthquake-induced landslide hazards; analysis of liquefaction hazards; guidelines for mitigating seismic hazards; guidelines for reviewing site-investigation reports.

City of Santa Ana

The City of Santa Ana adopted the current California Building Code by reference, with certain amendments, into Chapter 8, Article 2, Division 1 of the City’s Municipal Code. The City of Santa Ana General Plan Seismic Safety Element, adopted in 1982, identifies seismic hazards affecting the City and delineates goals, policies, and programs aimed at minimizing the effects of seismic hazards (Santa Ana 1982).

5.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- GEO-1 Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42.)
 - ii) Strong seismic ground shaking.
 - iii) Seismic-related ground failure, including liquefaction.
 - iv) Landslides.

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GEO-2 Result in substantial soil erosion or the loss of topsoil.

GEO-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

GEO-4 Be located on expansive soil, as defined in Table 18-1B of the Uniform building Code (1994), creating substantial risks to life or property.

GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold GEO-1(i. surface rupture of a known active fault) and (iv. earthquake-induced landslides)
- Threshold GEO-4 (hazards arising from expansive soils)
- Threshold GEO-5 (soils impacts arising from septic tanks)

These impacts will not be addressed in the following analysis.

5.3.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.3-1: THE PROJECT WOULD NOT EXPOSE PEOPLE OR BUILDINGS TO STRONG GROUND SHAKING. [THRESHOLD GEO-1.ii]

Impact Analysis: The nearest known active regional fault is the San Joaquin Hills Blind Thrust fault, approximately 1.7 miles from the project site. This fault, with a peak horizontal ground surface acceleration of 0.56 g during the maximum credible earthquake event, would have the most significant ground shaking effect on the project site. The proposed project would not involve the development of any habitable structures, and therefore would not increase safety hazards to residents associated with ground shaking. Additionally, vehicles traveling on Warner Avenue would not be at greater risk from earthquakes than other roads in Santa Ana. Impacts would be less than significant.

IMPACT 5.3-2: THE PROJECT WOULD NOT EXPOSE PEOPLE TO HAZARDS ARISING SEISMIC-RELATED GROUND FAILURE, INCLUDING LIQUEFACTION. [THRESHOLD GEO-1.iii]

Impact Analysis: The project site is within a liquefaction zone identified in the State California Seismic Hazard Zones Map (Tustin Quadrangle) and has shallow groundwater, especially during wetter years, which is associated with high liquefaction potential. Therefore, an unknown risk of ground deformation due to liquefaction exists. Liquefaction in subsurface soils could cause settlement of the ground surface and sand boils at Warner Avenue. A sand boil is water and sand that are expelled from subsurface soil onto the ground surface due to liquefaction in subsurface soil. Since no habitable structure development is involved, the impact of liquefaction is normally not considered for street improvements. A roadway can



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typically tolerate a few inches of differential settlement over a long horizontal distance due to its inherent flexibility (Franzone 2013). However, there would still be some possibility that liquefaction in soils under the project site could cause damage to the pavement; such damage could cause injuries to people or could impede emergency responses on Warner Avenue and to surrounding neighborhoods.

City would conduct assessments as required by California Code of Regulations Title 24, California Geological Survey (CGS) Special Publication 117 “Guidelines for Evaluating and Mitigating Seismic Hazards in California,” and the City Building Code. As part of this compliance, during the engineering process for the project a detailed geotechnical investigation would be conducted. The investigation will include sampling and testing of the subgrade and analysis based on current traffic index values to establish the depth of removals and moisture conditions necessary to provide adequate support for the pavement. Seismic and liquefaction risks would be accounted for during final design. Quantification of liquefaction risk would be completed, as determined by a professional geotechnical engineer or engineering geologist. The investigation will include drilling equipment or cone penetration testing (CPT) to determine whether soil settlement due to liquefaction would be greater than a few inches. If so, engineered fill soil, typically reinforced with a geogrid, or geotextile, would be used to reduce potential damage to the roadway from liquefaction. Geotextiles and geomats are permeable fabrics made of polypropylene plastic (CASQA 2003). Seismic-related ground failure, including liquefaction impacts would be less than significant.

IMPACT 5.3-3: THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL SOIL EROSION OR LOSS OF TOPSOIL. [THRESHOLD GEO-2]

Impact Analysis: The project site would be subject to exposed soils during construction; thus accelerated erosion and loss of top soil is anticipated. Storm runoff from Warner Avenue discharges to the Santa Ana Delhi Channel near the intersection of Warner Avenue and Flower Street, and the Santa Ana Delhi Channel discharges into Upper Newport Bay, then into the Pacific Ocean. Greatly accelerated soil erosion can create aesthetic and engineering problems by undermining structures, blocking storm drains, and depositing silt, sand, or mud in road. Eroded materials are eventually deposited into local waterways where the carried silt remains suspended in the water for some time, constituting a pollutant and altering the normal balance of plant and animal life.

However, the proposed project would be required to comply with a National Pollutant Discharge System (NPDES) permit and consequently the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which is further discussed in Chapter 5.6, *Hydrology and Water Quality*. Compliance with best management practices as standard mitigation to control erosion impacts as well as with state codes and requirements for stabilizing disturbed areas—such as sandbags to direct runoff away from disturbed areas and trap sediments onsite. Compliance with the requirements set forth by the NPDES permit to help minimize potential fugitive dust would ensure that erosion impacts resulting from the project would be less than significant.

IMPACT 5.3-4: THE PROJECT IS NOT EXPECTED TO RESULT IN SUBSTANTIAL HAZARDS ARISING FROM UNSTABLE SOILS, SUCH AS GROUND SUBSIDENCE OR HYDROCOLLAPSE. [THRESHOLD GEO-3]

Impact Analysis: The project would not result in on- or offsite landslide, lateral spreading, or subsidence. Ground subsidence is not expected to be a substantial hazard onsite, since there is no substantial pumping of shallow groundwater on or near the site. Considering the alluvial soils and shallow groundwater onsite, hydrocollapse is not considered a substantial hazard. Hydrocollapse and

other soil conditions would be verified through subsurface investigation and testing during final geotechnical investigation.

5.3.4 Cumulative Impacts

Impacts to geology and soils are specific to the conditions on a particular project site. Mitigation of geologic, seismic, and soil impacts of development projects would also be specific to each site and based on geotechnical studies. Compliance with modern building standards, such as the CBC, serves to reduce seismic-related risks. Therefore, no adverse cumulative impacts related to soils and geology are anticipated. In consideration of the preceding factors, the project's contribution to cumulative geology and soils impacts would be rendered less than considerable, and therefore less than cumulatively significant.

5.3.5 Existing Regulations

State

- California Public Resources Code Sections 2621 et seq.:Alquist-Priolo Earthquake Fault Zoning Act
- California Public Resources Code Section 2695: Seismic Hazard Mapping Act
- California Code of Regulations Title 24, Part 2: 2010 California Building Code
- California Geological Survey (CGS) Special Publication 117 "Guidelines for Evaluating and Mitigating Seismic Hazards in California,"



City of Santa Ana

- Municipal Code, Chapter 8, Article 2, Division 1: City Building Code: Adoption of 2010 California Building Code, with specified amendments.

5.3.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.3-1, 5.3-2, 5.3-3, and 5.3-4.

5.3.7 Mitigation Measures

No mitigation measures are required.

5.3.8 Level of Significance After Mitigation

Impacts would be less than significant.

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5.4 GREENHOUSE GAS EMISSIONS

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for the Warner Avenue Widening from Main Street to Grand Avenue project (proposed project) to cumulatively contribute to greenhouse gas (GHG) emissions. Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of a project are considered on a cumulative basis.

The chapter evaluates consistency of the project with the strategies outlined in the California Air Resources Board's (CARB) Scoping Plan in accordance with the GHG reduction goals of Assembly Bill 32 (AB 32) and strategies proposed by the Southern California Association of Governments (SCAG) to reduce vehicle miles traveled (VMT) in the region, in accordance with Senate Bill 375 (SB 375). This chapter also considers policies and mitigation suggested by the California Attorney General and the California Air Pollution Control Officer's Association (CAPCOA) to reduce GHG emissions. GHG modeling is included in Appendix D.

5.4.1 Environmental Setting

Greenhouse Gases and Climate Change

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,¹ carbon (CO₂), methane (CH₄), and ozone (O₃)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001). Table 5.4-1 lists the GHG applicable to the proposed project and their relative global warming potentials (GWP) compared to CO₂. The major GHG are briefly described below.

Carbon dioxide (CO₂) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH₄) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

Nitrous oxide (N₂O) is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

¹ Water vapor (H₂O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant.



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GREENHOUSE GAS EMISSIONS

Table 5.4-1
GHG and Their Relative Global Warming Potential Compared to CO₂

<i>GHG</i>	<i>Atmospheric Lifetime (years)</i>	<i>Global Warming Potential Relative to CO₂¹</i>
Carbon Dioxide (CO ₂)	50 to 200	1
Methane (CH ₄) ²	12 (±3)	21
Nitrous Oxide (N ₂ O)	120	310
Hydrofluorocarbons:		
HFC-23	264	11,700
HFC-32	5.6	650
HFC-125	32.6	2,800
HFC-134a	14.6	1,300
HFC-143a	48.3	3,800
HFC-152a	1.5	140
HFC-227ea	36.5	2,900
HFC-236fa	209	6,300
HFC-4310mee	17.1	1,300
Perfluoromethane: CF ₄	50,000	6,500
Perfluoroethane: C ₂ F ₆	10,000	9,200
Perfluorobutane: C ₄ F ₁₀	2,600	7,000
Perfluoro-2-methylpentane: C ₆ F ₁₄	3,200	7,400
Sulfur Hexafluoride (SF ₆)	3,200	23,900

Source: USEPA 2012, IPCC 2001.

¹ Based on 100-Year Time Horizon of the Global Warming Potential (GWP) of the air pollutant relative to CO₂.

² The methane GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO₂ is not included.

Fluorinated gases are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but they are potent GHGs, sometimes referred to as high GWP gases.

- **Chlorofluorocarbons (CFCs)** are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other GHG compounds covered under the Kyoto Protocol.
- **Perfluorocarbons (PFCs)** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF₄] and perfluoroethane [C₂F₆]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.
- **Sulfur Hexafluoride (SF₆)** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF₆ is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

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- **Hydrochlorofluorocarbons (HCFCs)** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
- **Hydrofluorocarbons (HFCs)** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (USEPA 2009).

California's GHG Sources and Relative Contribution

California is the second largest emitter of GHG in the United States, only surpassed by Texas, and the tenth largest GHG emitter in the world. However, California also has over 12 million more people than the state of Texas. Because of more stringent air emission regulations, in 2001 California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO₂ emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services) (CEC 2006a).

CARB's latest update to the statewide GHG emissions inventory was conducted in 2012 for year 2009 emissions.² In 2009, California produced 457 million metric tons (MMTons) of CO₂-equivalent (CO₂e) GHG emissions.³ California's transportation sector is the single largest generator of GHG emissions, producing 37.9 percent of the state's total emissions. Electricity consumption is the second largest source, comprising 22.7 percent. Industrial activities are California's third largest source of GHG emissions, comprising 17.8 percent of the state's total emissions. Other major sources of GHG emissions include commercial and residential, recycling and waste, high global warming potential GHGs, agriculture, and forestry (CARB 2012b).



Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHG in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and climate change pollutants that are attributable to human activities. The amount of CO₂ has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million (ppm) per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006).

Climate change scenarios are affected by varying degrees of uncertainty. IPCC's 2007 Fourth Assessment Report projects that the global mean temperature increase from 1990 to 2100, under different climate-change scenarios, will range from 1.4 to 5.8°C (2.5 to 10.4°F). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic timeframe but within a human lifetime (CAT 2006).

² Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (AB 32).

³ CO₂-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

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Potential Climate Change Impacts for California

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are also hard to predict. In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures, 2) a smaller fraction of precipitation is falling as snow, 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones, 4) an advance snowmelt of 5 to 30 days earlier in spring, and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). According to the California Climate Action Team (CAT), even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.4-2), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks are shown in Table 5.4-2 and include impacts to public health, water resources, agriculture, sea level, forest and biological resources, and electricity impacts. Specific climate change impacts that could affect the project include health impacts from a reduction in air quality, water resources impacts from a reduction in water supply, and increased energy demand.

Table 5.4-2
Summary of Global Climate Change Risks to California

Impact Category	Potential Risk
Public Health Impacts	<ul style="list-style-type: none"> • Poor air quality made worse • More severe heat
Water Resources Impacts	<ul style="list-style-type: none"> • Decreasing Sierra Nevada snow pack • Challenges in securing adequate water supply • Potential reduction in hydropower • Loss of winter recreation
Agricultural Impacts	<ul style="list-style-type: none"> • Increasing temperature • Increasing threats from pests and pathogens • Expanded ranges of agricultural weeds • Declining productivity • Irregular blooms and harvests
Coastal Sea Level Impacts	<ul style="list-style-type: none"> • Accelerated sea level rise • Increasing coastal floods • Shrinking beaches • Worsened impacts on infrastructure
Forest and Biological Resource Impacts	<ul style="list-style-type: none"> • Increasing risk and severity of wildfires • Lengthening of the wildfire season • Movement of forest areas • Conversion of forest to grassland • Increasing threats from pest and pathogens • Declining forest productivity • Shifting vegetation and species distribution • Altered timing of migration and mating habits • Loss of sensitive or slow-moving species
Electricity	<ul style="list-style-type: none"> • Potential reduction in hydropower • Increased energy demand

Sources: CEC 2006a; CEC 2008.

Regulatory Setting

Regulation of GHG Emissions on a National Level

The United States Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (EPA 2009).

The EPA's endangerment finding covers emissions of six key GHGs—CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, and SF₆—which have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world (the first three are applicable to the proposed project).

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 metric tons (MTons) or more per year are required to submit an annual report.

Regulation of GHG Emissions on a State Level

Current State of California law, guidance, and goals for reductions in GHG emissions are generally embodied in AB 32, the Global Warming Solutions Act, and Executive Order S-03-05. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05, signed June 1, 2005. Executive Order S-03-05 set the following GHG reduction targets for the state:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

AB 32 directed CARB to adopt discrete early action measures to reduce GHG emissions and outline additional reduction measures to meet the 2020 target. Based on the GHG emissions inventory conducted for the Scoping Plan by CARB, GHG emissions in California by 2020 are anticipated to be approximately 596 million metric tons (MMTons). In December 2007, CARB approved a 2020 emissions limit of 427 MMTons for the state. The 2020 target requires a total emissions reduction of 169 MMTons, 28.5 percent from the projected emissions of the business-as-usual (BAU) scenario for the year 2020 (i.e., 28.5 percent of 596 MMTons) (CARB 2008).⁴

Since release of the 2008 Scoping Plan, CARB has updated the statewide GHG emissions inventory to reflect GHG emissions in light of the economic downturn and measures not previously considered within

⁴ CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.



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the 2008 Scoping Plan baseline inventory. The updated forecast predicts emissions to be 507 MMTons by 2020. The new inventory identifies that an estimated 80 MMTons of reductions are necessary to achieve the statewide emissions reduction of AB 32 by 2020, 15.7 percent of the projected emissions compared to BAU in year 2020 (i.e., 15.7 percent of 507 MMTons) (CARB 2012b).

In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 MTons per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012. The Climate Action Registry Reporting Online Tool was established through the Climate Action Registry to track GHG emissions. Key elements of CARB's GHG reduction plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards (adopted and cycle updates in progress);
- Achieving a mix of 33 percent for energy generation from renewable sources (anticipated by 2020);
- A California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system for large stationary sources (adopted 2011);
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted);
- Adopting and implementing measures pursuant to state laws and policies, including California's clean car standards (amendments to the Pavley Standards adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (LCFS) (adopted 2009);⁵
- Creating target fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation (in progress).

Table 5.4-3 shows the proposed reductions from regulations and programs outlined in the Scoping Plan. While local government operations were not accounted for in achieving the 2020 emissions reduction, CARB estimates that land use changes implemented by local governments that integrate jobs, housing, and services result in a reduction of 5 MMTons, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments play in successful implementation of AB 32, in 2008 CARB recommended GHG reduction goals of 15 percent of today's levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target.⁶ Pursuant to the Scoping Plan Appendix C, "The Role of Local Government," and Table C, local

⁵ On December 29, 2011, the U.S. District Court for the Eastern District of California issued several rulings in the federal lawsuits challenging the LCFS. One of the court's rulings preliminarily enjoins the CARB from enforcing the regulation during the pendency of the litigation. In January 2012, CARB appealed the decision and on April 23, 2012, the Ninth Circuit Court granted CARB's motion for a stay of the injunction while it continues to consider CARB's appeal of the lower court's decision.

⁶ While the Scoping Plan references a goal for local governments to reduce community GHG emissions by 15 percent from current (interpreted as 2008) levels by 2020, the Scoping Plan does not rely on local GHG reduction targets established by local governments to meet the state's GHG reduction target of AB 32. Table 5.4-3 lists the recommended reduction measures, which do not include additional reductions from local measures.

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governments are encouraged to take a number of potential actions to reduce local GHG emissions, which include shifts in land use patterns that are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer VMT (CARB 2008).

**Table 5.4-3
Scoping Plan GHG Reduction Measures and
Reductions toward 2020 Target**

<i>Recommended Reduction Measures</i>	<i>Reductions Counted toward 2020 Target of 169 MMT CO₂e</i>	<i>Percentage of Statewide 2020 Target</i>
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets ¹	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	146.7	87%
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	27.3	16%
Total Reductions Counted toward 2020 Target	174	100%
Other Recommended Measures – Not Counted toward 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations	To Be Determined	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted toward 2020 Target	42.8	NA

Source: CARB 2008.

Notes: The percentages in the right-hand column add up to more than 100 percent because the emissions reduction goal is 169 MMTons and the Scoping Plan identifies 174 MMTons of emissions reductions strategies.

MMTCO₂e: million metric tons of CO₂e

¹ Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target.

² According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 million metric tons of CO₂e (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 target.

Since the Scoping Plan was adopted, CARB implemented and continues to implement of the reduction measures. The legislature has also passed legislation implementing the reduction measures. For example, the cap-and-trade regulations became effective January 2, 2012, and the compliance



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obligation for GHG emissions begins on January 1, 2013. The legislature also passed Senate Bill X1-2 (SBX1-2) in 2011, increasing the amount of electricity generated from eligible renewable energy resources to at least 33 percent per year by December 31, 2020.

Energy Conservation Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (CEC) in June 1977 and most recently revised in 2008 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the CEC adopted the 2013 Building and Energy Efficiency Standards, which go into effect on January 1, 2014. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 24 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in home and businesses.

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances. While these regulations are now often viewed as “business-as-usual,” they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

On July 17, 2008, the California Building Standards Commission adopted the nation’s first green building standards. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). The green building standards that became mandatory in the 2010 edition of the code established voluntary standards on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011.

Renewable Power Requirements

A major component of California’s Renewable Energy Program is the renewable portfolio standard (RPS), established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. CARB has now approved an even higher goal of 33 percent by 2020. In 2011, the state legislature adopted this higher standard in SBX1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Vehicle Emission Standards/Improved Fuel Economy

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I) and the LCFS. Pavley I is a clean-car standard that reduced GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards

through a waiver granted to California by the EPA.⁷ In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020.

Regulation of GHG Emissions on a Regional Level

2012 Regional Transportation Plan/ Sustainable Communities Strategy

In 2008, SB 375 was adopted to achieve the GHG reduction targets in the Scoping Plan for the transportation sector through local land use decisions that affect travel behavior. Implementation is intended to reduce VMT and GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations with local land use planning. Specifically, SB 375 requires CARB to establish GHG emissions reduction targets for each of the 17 regions in California managed by a metropolitan planning organization (MPO). Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG is the MPO for the southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035.

The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's existing transportation network. The proposed targets would result in 3 MMTons of GHG reductions by 2020 and 15 MMTons of GHG reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

SB 375 requires the MPOs to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plan. For the SCAG region, the SCS was adopted April 2012 (SCAG 2012). The SCS establishes a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. The SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. If the SCS is unable to achieve the regional GHG emissions reduction targets, the MPO is required to prepare an Alternative Planning Strategy that shows how the GHG emissions reduction target could be achieved through other development patterns, infrastructure, and/or transportation measures.

5.4.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

⁷ California's Pavley I fuel economy and GHG emissions standards for light-duty vehicle standards are more efficient than those adopted by the EPA in 2010 for model years 2012 through 2016.



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- GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

- GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

South Coast Air Quality Management District

SCAQMD has adopted a significance threshold of 10,000 metric tons (MTon) per year for permitted (stationary) sources of GHG emissions for which SCAQMD is the designated lead agency. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on Working Group Meeting No. 15 in September 2010, SCAQMD may adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

Tier 1. If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

Tier 2. If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD is proposing a "bright-line" screening-level threshold of 3,000 MTons annually for all land use types or the following land-use-specific thresholds: 1,400 MTons for commercial projects, 3,500 MTons for residential projects, or 3,000 MTons for mixed-use projects. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

Tier 3. If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

Tier 4. If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

SCAQMD has proposed an efficiency target for projects that exceed the screening threshold. The current recommended approach is per capita efficiency targets. SCAQMD is not recommending use of a percent emissions reduction target. Instead, SCAQMD proposes a 2020 efficiency target of 4.8 MTons per year per service population (MTons/year/SP) for project-level analyses and 6.6 MTons/year/SP for plan level projects (e.g., program-level projects such as general plans). Service population is defined as the sum of the residential and employment populations provided by a project. The per capita efficiency targets are

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based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.⁸

For purposes of this project, if project-related emissions exceed the screening threshold of 3,000 MTons per year, project emissions would be considered significant. The per capita targets are not applicable to the proposed project. The proposed project is a roadway improvement project and not a land use project that would generate a service population.

5.4.3 Environmental Impacts

Construction-related GHG emissions were calculated SCAQMD's California Emissions Estimator Model (CalEEMod). Life cycle emissions are not included in this analysis because not enough information is available for the proposed project, and therefore life cycle GHG emissions would be speculative.⁹

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.4-1: THE PROJECT WOULD RESULT IN A NOMINAL INCREASE IN GREENHOUSE GAS EMISSIONS AND WOULD NOT EXCEED THE PROPOSED SCAQMD SCREENING THRESHOLD. [THRESHOLD GHG-1]

Impact Analysis: As described previously, a project does not generate enough GHG emissions on its own to influence global climate change; therefore, this impact analysis measures the project's contribution to the cumulative environmental impact.

The proposed project would not introduce new land uses, and therefore would not directly result in creation of new vehicle trips. Consequently, the project would not result in direct or indirect GHG emissions from onsite area sources, offsite energy production required for onsite activities, and vehicle trips generated by the project. Table 5.4-4 is included for informational purposes only and provides an inventory of GHG emissions generated by vehicles traveling along the one-mile Warner Avenue segment between Main Street and Grand Avenue. As shown in the table, implementation of the proposed project would result in a minimal increase in GHG emissions compared to the no-project baseline conditions. However, even though VMT would increase by 2020 and 2035, when the 2020 and 2035 with-project conditions are compared to existing conditions (the 2012 no-project baseline), the overall GHG emissions along this segment would decrease. The decrease in GHG emissions would be attributable to existing regulations to reduce GHG emissions, such as improved fuel economy standards (i.e., with Pavley and 33 percent RPS), the LCFS, and turnover of older vehicle fleets. In addition, the proposed project would improve overall traffic flow. As vehicles typically generate higher GHG emissions at lower

⁸ SCAQMD took the 2020 statewide GHG reduction target for land use only GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

⁹ Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).



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speeds, particularly from idling and acceleration, the improved traffic flow would contribute to reducing GHG emissions.

**Table 5.4-4
Roadway GHG Emissions Inventory**

Year	VMT on Warner between Main and Grand		GHG Emissions (MTons/Year)			
	No Project	Project	No Project	Project	Compared to No Project	Compared to 2012 No Project Baseline
2012	9,351,962	9,755,367	4,494	4,687	194	194 ¹
2020	9,763,990	9,860,734	3,700	3,737	37	-757
2035	10,735,486	11,182,422	3,721	3,875	155	-618 ¹

Source: EMFAC2011 based on VMT and fleet mix provided by IBI Group.

Note:

¹ Discrepancy due to rounding.

Although the proposed project would not generate new operation-related GHG emissions, it would generate new GHG emissions from construction activities. Project-related annual construction emissions are amortized over a 30-year lifetime in accordance with SCAQMD's proposed methodology. Construction of the entire right-of-way of the proposed project would generate a total of 803 MTons of emissions. The total GHG emissions related to the project is nominal and would not exceed SCAQMD's proposed screening threshold of 3,000 MTons.¹⁰ Because the GHG emissions associated with the project would not exceed SCAQMD's screening threshold, the proposed project's cumulative contribution to GHG emissions is less than significant.

IMPACT 5.4-2: THE PROJECT WOULD NOT CONFLICT WITH PLANS ADOPTED FOR THE PURPOSE OF REDUCING GREENHOUSE GAS EMISSIONS. [THRESHOLD GHG-2]

Impact Analysis: The City of Santa Ana is in the process of preparing but has not yet adopted a Climate Action Plan. Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan and SCAG's 2012 RTP/SCS. A consistency analysis with these plans is presented below:

CARB Scoping Plan

In accordance with AB 32, CARB developed the Scoping Plan to outline the state's strategy to achieve 1990 level emissions by year 2020. To estimate the reductions necessary, CARB projected statewide 2020 BAU GHG emissions and identified that the state as a whole would be required to reduce GHG emissions by 28.5 percent from year 2020 BAU to achieve the targets of AB 32 (CARB 2008). Since release of the 2008 Scoping Plan, CARB has updated the 2020 GHG BAU forecast to reflect GHG emissions in light of the economic downturn and measures not previously considered in the 2008 Scoping Plan baseline inventory. The revised BAU 2020 forecast shows that the state would have to reduce GHG emissions by 21.6 percent from BAU without Pavley and the 33 percent RPS or 15.7 percent from the adjusted baseline (i.e., with Pavley and 33 percent RPS) (CARB 2012c).

¹⁰ This threshold is based on SCAQMD's 3,000 MTons combined threshold proposed by SCAQMD's Working Group, which is based on a survey of the GHG emissions inventory of CEQA projects. Approximately 90 percent of CEQA projects GHG emissions inventories exceed 3,000 MTons, which is based on a potential threshold approach cited in CAPCOA's White Paper, *CEQA and Climate Change*.

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Since adoption of the 2008 Scoping Plan, state agencies have adopted programs identified in the Plan, and the legislature has passed additional legislation to achieve the GHG reduction targets. Statewide strategies to reduce GHG emissions include the LCFS and changes in the corporate average fuel economy standards (e.g., Pavley I and 2017–2025 CAFE standards). The GHG emissions and inventory in the 2008 Scoping Plan include reductions associated with the Pavley fuel efficiency improvements.

SCAG's 2012 RTP/SCS

SCAG adopted its 2012 RTP/SCS on April 4, 2012, pursuant to the requirements of SB 375. SCAG's RTP/SCS is a regional growth management strategy that targets per capita GHG reduction from passenger vehicles and light duty trucks in the Southern California region. The 2012 RTP/SCS incorporates local land use projections and circulation networks in the cities' and counties' general plans. The projected regional development pattern—including location of land uses and residential densities in local general plans—when integrated with the proposed regional transportation network in the 2012 RTP/SCS, would reduce per capita vehicular travel-related GHG emissions and achieve the subregional GHG reduction per capita targets for the SCAG region. Key strategies identified in the Orange County subregional SCS that were incorporated into the 2012 RTP/SCS and that are pertinent to the type of project being proposed are listed below:

- **Increase regional accessibility in order to reduce vehicle miles traveled.** This is a regional transportation system management strategy with a primary focus on freeways and highways. Although this measure is generally not applicable to the road widening project, it would decrease congestion in the City of Santa Ana and assist with meeting this regional goal.
- **Promote land use patterns that encourage the use of alternatives to single-occupant automobile use.** Installation of bicycle lanes and sidewalk improvements proposed by the project could encourage alternate modes of transportation, and the project would be consistent with this policy.
- **Eliminate bottlenecks and reduce delay on freeways, toll roads, and arterials.** This is a regional transportation system management strategy primarily focused on regional roadways. Although this measure is generally not applicable to the type of road widening project proposed, it would decrease congestion in Santa Ana and assist with meeting this regional goal.
- **Apply Transportation System Management and Complete Streets practices to arterials and freeways to maximize efficiency.** The proposed project would install Class II bicycle lanes to Warner Avenue where no striped bicycle lanes currently exist. In addition, the project would design and implement general sidewalk improvements. These improvements would be consistent with this policy.
- **Improve modes through enhanced service, frequency, convenience, and choices.** This is a regional transportation management strategy with a primary focus on increasing and improving public transportation options and service. The proposed project would improve circulation and mobility and would be consistent with this policy.
- **Expand and enhance Transportation Demand Management practices to reduce barriers to alternative travel modes and attract commuters away from single-occupant vehicle travel.** The proposed project would result in installation of Class II bicycle lanes along Warner Avenue where currently no striped bicycle lanes exist and would be consistent with the Commuter



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Bikeways Strategic Plan (CBSP). The CBSP was adopted by the Orange County Transportation Authority on May 22, 2009 and is incorporated as part of the SCS.

- **Implement near-term (Transportation Improvement Program and Measure M2 Early Capital Action Plan) and long-term (Long Range Transportation Plan 2035 Preferred Plan) transportation improvements to provide mobility choices and sustainable transportation options.** The segment of Warner Avenue between Main Street and Grand Avenue is designated to be improved under the OCTA Master Plan of Arterial Highways (MPAH) and is also consistent with the City of Santa Ana's General Plan Circulation Element. The MPAH is included as part of the Long Range Transportation Plan 2035 Preferred Plan.
- **Acknowledge current sustainability strategies practices by Orange County jurisdictions and continue to implement strategies that will result in or support the reduction of GHG emissions.** Installation of bicycle lanes and sidewalk improvements proposed by the project could encourage alternate modes of transportation and would be consistent with this SCS strategy.

The Complete Streets Act was passed in 2007 by the California legislature and signed into law in 2008. Effective January 2011, the act requires that complete street principles are considered and evaluated by local jurisdiction in their updates to their general plans and circulation elements. The City of Santa Ana is currently working to include complete street policies in the update to their circulation element. Complete street principles focus on the needs of all users of the roadway, which includes pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation. Emphasis on creating roadways to meet the needs of nonmotorists could reduce vehicle trips and VMT and thereby reduce GHG emissions. As discussed, the segment of Warner Avenue between Main Street and Grand Avenue currently has no striped bicycle lanes. The proposed project would include installation of Class II bicycle lanes in addition to improvements to the sidewalks for pedestrians. These improvements could encourage alternative means of transportation.

Summary

Overall, GHG emissions from vehicles traveling on Warner Avenue would be reduced from compliance with statewide measures that have been adopted since AB 32 was adopted. Additionally, improved traffic flow from implementation of the proposed project would reduce GHG emissions by minimizing idling and vehicle acceleration. Furthermore, the proposed project would install street lighting with energy-efficient LED bulbs, which would also contribute in reducing GHG emissions. Therefore, the proposed project would not have the potential to interfere with the State of California's ability to achieve GHG reduction goals and strategies.

5.4.4 Cumulative Impacts

Project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Consequently, it is speculative to determine how project-related GHG emissions would contribute to global climate change and how global climate change may impact California. Therefore, impacts identified under Impact 5.4-1 are not project-specific impacts to global warming, but the project's contribution to this cumulative impact. As discussed above, the project would result in a nominal increase in GHG emissions during construction. In consideration of the preceding factors, the project's contribution to cumulative GHG emissions and their contribution to global climate change impacts would be rendered less than considerable and therefore less than cumulatively significant.

5.4.5 Existing Regulations

- Executive Order S-3-05: Greenhouse Gas Emission Reduction Targets
- AB 32: California Global Warming Solutions Act of 2006
- SB 375: Sustainable Communities and Climate Protection Act of 2008
- Pavley Fuel Efficiency Standards (AB1493). Establishes fuel efficiency ratings for new cars.
- Title 17 California Code of Regulations (Low Carbon Fuel Standard). Requires the carbon content of fuel sold in California to be 10 percent less by 2020.
- California Water Conservation in Landscaping Act of 2006 (AB 1881). Requires local agencies to adopt the Department of Water Resources updated Water Efficient Landscape Ordinance or equivalent by January 1, 2010, to ensure efficient landscapes in new development and reduced water waste in existing landscapes.

5.4.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements the following impacts would be less than significant: 5.4-1 and 5.4-2.

5.4.7 Mitigation Measures

No mitigation measures are required.

5.4.8 Level of Significance After Mitigation

GHG impacts would be less than significant.



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5.5 HAZARDS AND HAZARDOUS MATERIALS

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for implementation of the Warner Avenue Widening from Main Street to Grand Avenue project to result in hazardous impacts in the project area and the City of Santa Ana. The analysis in this section is based, in part, upon the following technical reports:

- *Initial Site Assessment for Warner Ave Widening between Main Street and Grand Avenue*, The Planning Center, October 2009.
- *Initial Site Assessment Addendum for Warner Ave Widening between Main Street and Grand Avenue*, The Planning Center|DC&E, March 2013.

A complete copy of “Initial Site Assessment” is included in Appendix H-1, and the Addendum is Appendix H-2 of this Draft EIR.

Definitions

California Health and Safety Code (CHSC) Chapter 6.5 sets forth definitions and regulations related to hazardous materials management and hazardous waste disposal. This EIR uses the definition given in this chapter, which defines a hazardous material as:

Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or environment. “Hazardous Materials” include but are not limited to, hazardous substances, hazardous waste, and any material which the handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or environment.



A “hazardous waste” for the purpose of this analysis is any hazardous material that is abandoned, discarded, or recycled, as defined by CHSC Section 25124. The criteria that characterize a material as hazardous include ignitability, toxicity, corrosivity, reactivity, radioactivity, or bioactivity.

5.5.1 Environmental Setting

The initial Site Assessment conducted in October 2009 by The Planning Center consisted of the following tasks:

- Visual observations of site conditions, and of abutting property use, to evaluate the nature and type of activities that have been or are being conducted at and adjacent to the site, in terms of the potential for release of hazardous substances.
- Review of federal and state environmental database information and environmental files.
- Use of 7.5-minute topographic maps to evaluate the site’s physical setting.
- Review of historical aerial photographs to assess historic uses of the project site.

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- A review of agency records to identify high-pressure gas lines and fuel transmission lines near the project site;
- A review of Division of Oil and Gas records;
- A review of geological references for the presence of naturally occurring asbestos;
- Prior usage of the project site for agricultural purposes, mining activities, illegal drug manufacturing and disposal, and U.S. Government ownership; and
- The possibility of asbestos-containing materials and lead-based paint used in building construction.
- Interpretation of information and data assembled as a result of the above tasks, and formulation of conclusions regarding the potential presence and impact of Recognized Environmental Conditions (RECs).¹

The Initial Site Assessment Addendum prepared by The Planning Center | DC&E in March 2013 updated the original site assessment to address refinements in the proposed roadway alignment. All of the tasks conducted in the Initial Site Assessment were conducted in the subsequent site assessment for the additional parcels with the exception of a visual observation.

Historical Uses

Historical uses of the project site, based on aerial photographs, were as follows; the aerial photographs are included in Appendix H-1, *Initial Site Assessment*.

- 1938 – The portion of the site north of Warner Avenue appears to be primarily agricultural with scattered residential. The area south of Warner Avenue appears to have limited agriculture with some residential. The railroad that crosses Warner Avenue east of Standard Avenue is present.
- 1947 – The project area has more residential development to the north and south of Warner Avenue. Agricultural operations are located on the eastern portion of Warner Avenue in the project area.
- 1952 – More residential development is located to the north and south of Warner Avenue. The northeast corner of Warner Avenue and Main Street has a building with a similar shape to the Arco Smog Pro Service Station that is located at the corner today. The remaining areas of the subject site appear relatively unchanged in comparison to the 1947 aerial photograph.
- 1960 – The National Guard building is now apparent on the south side of Warner Avenue. On the eastern portion of Warner Avenue there is less agricultural use and commercial buildings are not present.

¹ A recognized environmental condition (REC) is the presence or likely presence of hazardous materials or petroleum products under conditions indicating an existing or past release or a material threat of a release, into structures or soil or groundwater or surface water; even under conditions in compliance with laws.

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- 1968 – Continued development of the project area with more residences filling in the remaining open spaces. The only remaining agricultural use is south of Warner Avenue near the eastern border of the project area.
- 1977 – James Monroe Elementary School is now apparent to the west of the National Guard building. The Wells Fargo bank building is located on the southeast corner of Warner Avenue and Main Street.
- 1983 – On the north side of Warner Avenue near Standard Avenue, one of the buildings appears to have been replaced with a larger building. The remaining area appears relatively unchanged in comparison to the 1977 aerial photograph.
- 1994 – Most of the agricultural fields that were located near the southeast corner of the site are no longer apparent. The remainder of the site appears relatively unchanged in comparison to the 1983 aerial photograph.
- 2005 – The site appears relatively unchanged in comparison to the 1994 aerial photograph.

Recognized Environmental Conditions

A recognized environmental condition (REC) is the presence or likely presence of hazardous materials or petroleum products under conditions indicating an existing or past release or a material threat of a release, into structures or soil or groundwater or surface water; even under conditions in compliance with laws.

Directly Impacted Parcels

Recognized environmental conditions (REC) were identified for the following parcels for which either full or partial take is required to implement the proposed project (see Figure 3-3, *Existing Land Use*):

- **Arco Smog Pro Service Station at 2245 South Main Street.** The service station has operated on this site since approximately 1952. Petroleum hydrocarbons from a leaking underground storage tank (LUST) have impacted soil and groundwater, and this is an open case with the Santa Ana Regional Water Quality Control Board (SARWQCB).
- **Wells Fargo Bank at 2301 South Main Street.** The bank is also under the oversight of SARWQCB because of shallow groundwater impacted by petroleum hydrocarbons from a LUST. The tank was closed in place by the Santa Ana Fire Department in 2006, and the SARWQCB took over the case in 2007. The case is open, and the extent of contamination has not been determined.
- **Cherry Aerospace at 1224 E. Warner Avenue.** Acquisition of a portion of this facility's frontage will be required to widen Warner Avenue. The site is under the oversight of the Department of Toxic Substances Control (DTSC) for soil and groundwater assessment. Tetrachloroethylene, trichloroethene, and Freon 113 have been found in groundwater in the area, and DTSC requested a subsurface investigation to assess current and former waste storage and management units at the facility. An investigation resulted in the request for additional assessment at the facility for heavy metals, volatile organic compounds, and total petroleum hydrocarbons. The DTSC concluded that the facility contaminated the soil and groundwater



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beneath the site. The site is an open case and the extent of contamination has not been determined.

Adjacent Parcel

- **Diesel Logistics at 1331 E. Warner Avenue** is along the roadway frontage but would not require acquisition. This site is also under the oversight of the DTSC. The facility was used to repair diesel engines, and subsurface soils have been impacted with VOCs and petroleum hydrocarbons. The DTSC has requested additional investigation to delineate the extent of contamination. The facility is considered a potential source for the contaminated groundwater in the area.

Suspect Environmental Condition Based on Historical Uses of Site

Some of the parcels next to the Warner Avenue roadway were used for agriculture from at least 1938 to the late 1940s. Organochlorine pesticides are the typical concern for residual pesticides, and these were not commonly used until the 1950s, after agriculture ceased at the project site. Based on the amount of grading that has occurred in the area for road construction and construction of buildings and parking lots, the possibility of residual pesticides above levels of concern is considered minimal. Additionally, any possible pesticide use was more than 50 years ago. Considering all these factors as well as test results for persistent pesticides at similar sites in southern California, the probability of residual pesticides being present in soil at levels of concern in soil at the site is very low.

Older Buildings

The proposed project would require the removal of 33 buildings: 31 residential and 2 commercial.² These buildings were constructed between 1920 and 1968 (see Chapter 5.3, *Cultural Resources*, for more details). Based on the age of the buildings, there is a potential for lead-based paint (LBP) or asbestos-containing material (ACM) to be released during demolition, which could be harmful to human health.

Asbestos

Asbestos is a naturally occurring fibrous material that was used for fireproofing and insulation before many of its most common construction-related uses were banned by the US Environmental Protection Agency (EPA) between the early 1970s and 1991 under the authority of the Clean Air Act (CAA) and the Toxic Substances Control Act (TSCA). Inhaling asbestos fibers can cause lung disease (asbestosis) and lung cancer (mesothelioma), so friable (easily crumbled) asbestos presents the greatest health threat. Loose insulation, ceiling panels, and brittle plaster are potential sources of friable asbestos. Cutting, grinding, or drilling during demolition—especially of pre-1980 structures—or relocation of utilities could release friable asbestos fibers unless proper precautions are taken (DTSC 2008).

Lead

Lead is a naturally occurring metallic element that is regulated as a hazardous material because of its toxic properties. Excessive exposure can result in the accumulation of lead in the blood, soft tissues, and bones. Lead is a reproductive toxin and a cancer-causing substance, and it impairs the development of the nervous system and blood cells in children (DTSC 2008). Children are particularly susceptible to

² Based on the Draft Relocation Impact Statement, 2013 (see Appendix K of this EIR), the proposed project would require full acquisition of 34 properties, one of which is vacant (909 East Warner Avenue; APN 016-105-22).

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potential lead-related health problems because it is easily absorbed into developing systems and organs. Lead was used in paint, water pipes, solder in plumbing systems, and gasoline, and it can be found in soils around buildings with LBP. In 1971, lead-based house paint was phased out in the United States with the passage of the Lead-Based Paint Poisoning Prevention Act, and in 1978, it was banned altogether. The Clean Air Act banned leaded fuel effective January 1, 1996.

Power Poles

Pole-mounted electrical transformers observed along Warner Avenue may contain polychlorinated biphenyls (PCBs)—organic chemicals, usually in the form of oil, that were used in electrical equipment, including transformers and capacitors, primarily as insulators. PCBs are highly persistent in the environment and can cause various human health effects, including liver injury, irritation of the skin and mucous membranes, and adverse reproductive effects. PCBs are also suspected human carcinogens. In California, PCB-containing materials must be disposed of as hazardous waste. Some fluorescent light ballasts contain PCBs and could be present in the existing buildings that would be demolished. Nearly all ballasts manufactured prior to 1979 contain PCBs. Ballasts manufactured after July 1, 1978, which do not contain PCBs, must be clearly marked "No PCBs."

There are overhead power lines and poles along Warner Avenue, and several have pole-mounted transformers. Other potential PCB-containing equipment may be located at the Arco station (interior transformers, oil-filled switches, hoists, lifts, dock levelers, hydraulic elevators, balers, etc.).

Regulatory Database Listings

Regulatory database listings for parcels within a 0.25 mile radius of the project site (Warner Avenue from Main Street to Grand Avenue) are listed in Table 5.5-1.



**Table 5.5-1
Hazardous Materials Site Listings**

<i>Listing and Address</i>	<i>Databases</i>	<i>Reason for Listing</i>
Listings on Parcels Next to Warner Avenue		
Wells Fargo Bank 2301 South Main Street	Leaking Underground Storage Tank (LUST)/GeoTracker	LUST released diesel fuel affecting groundwater other than drinking water. Site assessment in 2008. Case is open.
Unocal 5017 2302 South Main Street	LUST/GeoTracker	Release of other solvent or non-petroleum hydrocarbon from LUST affected drinking water aquifer. Case closed 1997.
Arco 5147 2245 South Main Street	Underground Storage Tank (UST)/GeoTracker	Permitted UST.
	LUST/GeoTracker	Release of gasoline from LUST affected drinking water aquifer. Site assessment 2008. Case is open.
South Main Street/West Warner Avenue Near Northeast Corner Warner Avenue and Main Street (no address; near 2245 S Main Street)	School Site Investigation/EnviroStor	Investigation regarding past auto sales and service uses on proposed school site. Department of Toxic Substances Control issued a No Further Action determination in 2001.

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**Table 5.5-1
Hazardous Materials Site Listings**

Listing and Address	Databases	Reason for Listing
California National Guard 612 East Warner Avenue	LUST/GeoTracker	Release of gasoline from LUST affected drinking water aquifer. Case closed 2002.
Santa Ana Corporate Yard 730 East Warner	<ul style="list-style-type: none"> • Cortese • Historic UST • LUST • ISC (Orange County Industrial Site Cleanups) • SWEEPS (Statewide Environmental Evaluation and Planning System): historic USTs • RCRA (Hazardous Waste Generators listed per Resource Conservation and Recovery Act) • Cleanup sites: listed on GeoTracker database by State Water Resources Control Board 	Release of gasoline from UST—discovered 1986—affected drinking water aquifer. Case closed 1999. Small Quantity Generator (SQG) of hazardous waste.
Veeco Instruments 1203 East Warner Ave.	Hazardous Waste Tanner Summary (HWTS)	Manifest of shipment of 0.042 ton of unspecified organic liquid mixture to recycler in 1994.
Wyvern Technologies Inc. 1203 East Warner Ave.	HWTS	Manifest of shipment of 0.46 tons of halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc.) to recycler in 1993.
Triton Chandelier 1221 E Warner Ave.	HWTS	Manifests of 4 shipments totaling 2.35 tons of waste oil, mixed oil, and other organic solids.
Cherry Aerospace 1224 East Warner Avenue	Corrective Action ordered/GeoTracker	Perchloroethylene (PCE), tetrachloroethylene (TCE), and freon 113 were detected in groundwater samples from an Irvine Ranch Water District well about 400 feet southwest of the site in 2007. Site assessment and groundwater monitoring are underway. In July 2012 DTSC approved a plan for additional soil and groundwater investigation (SWRCB 2013). Case is open.
Beard Printing Co. 1331 East Warner Avenue	Orange County Hazardous Waste Facilities (HWFAC)	
Diesel Logistics 1331 East Warner Avenue	State Response/EnviroStor	Tetrachloroethylene (PCE) and Trichloroethylene (TCE) affected soil. Site screening underway 2011.
Industrial Asphalt 1401 East Warner Avenue	LUST/GeoTracker	Release of diesel fuel from LUST affected soil. Case closed 2002.
Standard Concrete Material, Inc. 1409 East Warner Ave.	RCRA SQG	Small Quantity Generator of hazardous waste

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**Table 5.5-1
Hazardous Materials Site Listings**

<i>Listing and Address</i>	<i>Databases</i>	<i>Reason for Listing</i>
Other Listings within 0.25 Mile of Project Site		
Mac Howard Leasing 301 Warner 0.21 mile west of site	LUST:	Release of waste oil/motor/hydraulic/lubricating oil affected drinking water aquifer. Leak discovered 1990, tank removed 1995, case closed 1997.
Tibbetts Newport Co. 2337 South Birch St 0.2 mile west of site	<ul style="list-style-type: none"> • Cortese • EnviroStor • Hist UST • Calsites • LUST • REF (Referred to Another Local or State Agency) • SWEEPS • Cleanupsites • 	Release of gasoline affected drinking water aquifer. Discovered 1997, case closed 2006.
Omars Recycling 230 West Warner Ave. 0.17 mile west of site	SWRCY	Recycling Center
Humble Oil 1440 Broadway 0.15 mile west of site	<ul style="list-style-type: none"> • LUST • Cleanupsites 	Release of gasoline affected drinking water aquifer. Discovered 2005, site assessment 2007, case is open.
Jim Slemons Daihatsu 120 West Warner Ave. 0.12 mile southwest of site	Cleanupsites	Release of waste oil/motor/hydraulic/lubricating oil affected soil. Discovered 1992, case closed 1992.
Standard Brands Paint 2416 South Main St 0.1 mile southwest of site	Hist UST	Permitted UST
Unocal #5492 2425 South Main St 0.15 mile south of site	<ul style="list-style-type: none"> • LUST • Cortese 	Release of gasoline affected soil. Discovered 1988, case closed 1992.
MHM Car Co. 2327 South Main St 0.09 mile south of site	RCRAG	Small Quantity Generator of hazardous waste
MacHoward Leasing 2242 South Main St 0.04 mile west of site	<ul style="list-style-type: none"> • Cortese • LUST • RCRAG • Cleanupsites • 	Release of waste oil/motor/hydraulic/lubricating oil affected drinking water aquifer. Discovered 1990, case closed 1994.
Transmission Masters 2201 South Main St 0.1 mile north of site	<ul style="list-style-type: none"> • Cortese • LUST • Cleanupsites 	Release of transmission fluid affected drinking water aquifer. Discovered 1990, case closed 1991.
Bacs Development, Inc. 2140 South Main St 0.13 mile north of site	<ul style="list-style-type: none"> • Cortese • LUST • Cleanupsites 	Release of gasoline affected drinking water aquifer. Discovered 1985; case is open.



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**Table 5.5-1
Hazardous Materials Site Listings**

Listing and Address	Databases	Reason for Listing
South Coast Auction 2202 South Main St 0.1 mile north of site	<ul style="list-style-type: none"> • Cortese • LUST • Cleanupsites 	Release of gasoline affected drinking water aquifer. Discovered 1986; cleanup by excavation 1986; case is open.
Unknown 2133 South Main St 0.17 mile north of site	SWEEPS	Historic UST
NYSCO Motors 2101 South Main St 0.22 mile north of site	<ul style="list-style-type: none"> • Cortese • LUST • Cleanupsites • SWEEPS 	Release of gasoline affected drinking water aquifer. Discovered 1991, case closed 1997
Craig Development Co./Rockwell Farms 2102 South Main St 0.22 mile north of site	<ul style="list-style-type: none"> • Cleanupsites • Cortese • LUST 	Release of gasoline affected drinking water aquifer. Discovered 1987, case closed 2001
Larry Ulvestad 2074 S Main St 0.25 mile north of site	<ul style="list-style-type: none"> • Cleanupsites • Cortese • LUST 	Release of gasoline affected drinking water aquifer. Discovered 1990, case closed 2001
Gallegos Market 335 East Adams St 0.23 mile south of site	SWEEPS	Historic UST
Extruded Plastics Co. 2201 South Standard Ave. 0.1 mile north of site	<ul style="list-style-type: none"> • EnviroStor • Calsites • REF • Cleanupsites 	
Bimbo Bakery	Cleanupsites	Release of gasoline affected soil. Reported 1987, case closed 2000
Diceon Electronics 2215 South Standard Ave. 0.07 mile north of site	<ul style="list-style-type: none"> • SLIC (Spills, Leaks, Investigations, and Cleanups) • Cleanupsites 	Tetrachloroethylene (TCE), perchloroethylene (PCE). Site assessment 2005; case is open
Orange County Chemical 1230 East Saint Gertrude Place 0.19 mile north	<ul style="list-style-type: none"> • Cleanupsites • Hist UST • SLIC • SWEEPS • NFRAP (No Further Remedial Action Planned) 	Releases of tetrachloroethylene (TCE), perchloroethylene (PCE) affected drinking water aquifer, other aquifer, soil.
Avalon Chemical Co. 1230 East Saint Gertrude Place 0.19 mile north	<ul style="list-style-type: none"> • EnviroStor • REF • Calsites 	

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**Table 5.5-1
Hazardous Materials Site Listings**

<i>Listing and Address</i>	<i>Databases</i>	<i>Reason for Listing</i>
Gallade Chemical Co. 1230 East Saint Gertrude Place 0.19 mile north	<ul style="list-style-type: none"> • EnviroStor • SLIC • RCRAC • Cleanupsites 	Releases of other chlorinated hydrocarbons, tetrachloroethylene (TCE), perchloroethylene (PCE) affected drinking water aquifer, other aquifer, soil. Remediation 2006; case is open. Release of sulfuric acid affected soil and drinking water aquifer.
Hood Santa Ana Yard 1323 East Saint Gertrude Place 0.25 mile north	Hist UST	Historic UST
Maywood Park, LLC 2201 South Hathaway St	HWTS	Shipment of 0.2 tons of other organic solids to transfer station in 1999.
Holchem Service Chemical Co. 1341 East Maywood 0.06 mile north	<ul style="list-style-type: none"> • EnviroStor • Calsites • REF • SLIC • NFRAP • Cleanupsites 	Releases of other chlorinated hydrocarbons, tetrachloroethylene (TCE), perchloroethylene (PCE) affected drinking water aquifer, other aquifer, soil. Remediation 1996; case is open
Service Chemical Co. 1341 East Maywood 0.06 mile north	<ul style="list-style-type: none"> • EnviroStor • RCRAC (Resource Conservation and Recovery Act- Corrective Action) • RCRA 	Release of 1,1,2-trichloroethane affected drinking water aquifer, soil. Case is open
Embee Plating 2144 South Hathaway St 0.13 mile north 2136 South Hathaway St 0.17 mile north	<ul style="list-style-type: none"> • EnviroStor • REF • Calsites • ISC • NFRAP 	Constituents detected in soil and groundwater under site include hexavalent chromium, chromium, cadmium, copper, nickel, chlorinated volatile organic compounds, and perchlorate.
Griffin Electronics Inc. 2115 South Hathaway St 0.16 mile north	ISC	Release of copper plating waste; case closed 1998.
Standard Concrete Materials, Inc. 2130 South Grand Ave. 0.11 mile north	<ul style="list-style-type: none"> • Hist UST • SWEEPS • RCRAC • ABST (Above Ground Storage Tanks) 	Permitted USTs; small quantity generator of hazardous wastes
Barlen Enterprises Light Industrial Park 1410 East Saint Gertrude Place 0.23 mile north	ISC	Release of perchloroethylene. Site investigation 2009; case is open
Circuit One 2101 South Grand Ave 0.23 mile north	<ul style="list-style-type: none"> • Calsites • NFRAP • EnviroStor 	Trichloroethane, other chlorinated hydrocarbons, trichloroethylene. Cleanup ongoing; case is open.



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**Table 5.5-1
Hazardous Materials Site Listings**

Listing and Address	Databases	Reason for Listing
Taymech Corp. 2134 South Grand Ave 0.13 mile north	SWEEPS	Permitted UST
Circuit One 2103 South Grand Ave 0.11 mile north	<ul style="list-style-type: none">• Cleanupsites• ISC• SLIC	Trichloroethane, other chlorinated hydrocarbons, trichloroethylene. Cleanup ongoing; case is open.
ACL Technologies 1505 East Warner Ave 0.17 mile northeast	<ul style="list-style-type: none">• Cortese• LUST• Cleanupsites	Release of gasoline affected drinking water aquifer. Discovered 1988; case closed 1996.
Wayne Dutro 1522 East Warner Ave 0.12 mile east	Cleanupsites	Release of gasoline affected soil. Case closed 1992.

Sources: Initial Site Assessment 2009 and Addendum 2013.

Regulatory Setting

Various federal and state regulations and programs regulate the use, storage, and transportation of hazardous materials. Several of the existing federal and state laws and programs are summarized in the following paragraphs.

Hazardous Materials

Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) protects water, air, and soil resources from the risks created by former chemical-disposal practices. This law is also referred to as the Superfund Act and regulates sites on the National Priority List (NPL), which are referred to as "Superfund sites."

Emergency Planning and Community Right-to-Know Act

The primary purpose of the federal Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 is to inform communities and citizens of chemical hazards in their areas. Section 311 and 312 of EPCRA require businesses to report the location and quantities of chemicals stored on-site to state and local agencies. Under section 313 of EPCRA, manufacturers are required to report chemical releases for more than 600 designated chemicals. In addition to chemical releases, regulated facilities are also required to report off-site transfers of waste for treatment or disposal at separate facilities, and implement pollution prevention measures and chemical recycling activities. The EPA maintains the Toxic Release Inventory (TRI) database, which documents the information that regulated facilities are required to report annually.

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Superfund Amendments and Reauthorization Act

In 1986, Congress passed the Superfund Amendments and Reauthorization Act. Title 5 of this regulation requires that each community establish a local emergency planning committee to develop an emergency plan for preparing for and responding to a chemical emergency.

The emergency plan is reviewed by the State Emergency Response Commission and publicized throughout the community. The CUPA is responsible for coordinating hazardous material and disaster preparedness planning and appropriate response efforts with city departments as well as local and state agencies. The goal is to improve public- and private-sector readiness and to mitigate local impacts resulting from natural or man-made emergencies.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) is the principal federal law that regulates generation, management, and transportation of hazardous waste. Hazardous-waste management includes the treatment, storage, or disposal of hazardous waste.

Hazardous Materials Release Notification

Many state statutes require emergency notification of a hazardous chemical release. These statutes include:

- Health and Safety Codes §§ 25270.7, 25270.8, and 25507
- Vehicle Code § 23112.5
- Public Utilities Code § 7673 (PUC General Orders #22-B, 161)
- Government Code §§ 51018, 8670.25.5 (a)
- Water Codes §§ 13271, 13272
- California Labor Code § 6409.1 (b)10

Requirements for immediate notification of all significant spills or threatened releases cover owners, operators, persons in charge, and employers. Notification is required regarding significant releases from facilities, vehicles, vessels, pipelines, and railroads. In addition, all releases that result in injuries or harmful exposure to workers must be immediately reported to the California Occupational Safety and Health Administration (Cal/OSHA) pursuant to the California Labor Code Section 6409.1(b).

Hazardous Materials Disclosure Programs

The Unified Program administered by the State of California consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for environmental and emergency management programs, which include: Hazardous Materials Release Response Plans and Inventories (Business Plans), the California Accidental Release Prevention (CalARP) Program, and the UST Program. The Unified Program is implemented at the local government level by certified unified program agencies (CUPAs).

The CUPA with responsibility for the Santa Ana area is the Orange County Health Care Agency (OCHCA). The OCHCA is designated by the State Secretary for Environmental Protection as the CUPA for the County of Orange in order to focus the management of specific environmental programs at the local government level. The CUPA is charged with conducting compliance inspections for regulated facilities that handle hazardous material, generate or treat a hazardous waste, and/or operate a UST. The CUPA provides a comprehensive environmental management approach to resolve environmental issues.



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Hazardous Materials Business Plans

Both the federal government (Code of Federal Regulations) and the State of California (Health and Safety Code) require businesses that handle more than a specified amount (reporting quantity) of hazardous material or extremely hazardous material to submit a Hazardous Material Business Plan to their CUPA.

Business plans must include an inventory of the hazardous materials at the facility. Businesses are required to update their plans at least once every three years and the chemical portion of their plans every year. Business plans are required to include emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans need to identify the procedures to follow for immediate notification to all appropriate agencies and personnel in the event of a release. Also required are identification of local emergency medical facilities, contact information for all company emergency coordinators, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel.

Businesses that handle hazardous materials are required by law to provide an immediate verbal report of any release or threatened release of hazardous materials if there is a reasonable belief that the release or threatened release poses a significant present or potential hazard to human health and safety, property, or the environment. The CUPA is charged with the responsibility of conducting compliance inspections of regulated facilities in Orange County.

California Accidental Release Prevention Program

CalARP became effective on January 1, 1997, in response to Senate Bill 1889. CalARP is proactive; it therefore requires businesses to prepare risk management plans (RMPs), that is, detailed engineering analyses of potential accident factors and mitigation measures to reduce this accident potential. This requirement is coupled with the requirements for preparation of Hazardous Materials Business Plans under the Unified Program, implemented by the CUPA.

Underground Storage Tanks

LUSTs have been recognized since the early 1980s as the primary cause of groundwater contamination from gasoline compounds and solvents. In California, regulations aimed at protecting against UST leaks have been in place since 1983 (Health and Safety Code). This is one year before RCRA was amended to add Subtitle I, which required UST systems to be installed in accordance with standards that address the prevention of future leaks. The State Water Resources Control Board (SWRCB) is the designated lead California regulatory agency in the development of UST regulations and policy.

Older tanks are typically single-walled steel tanks. Many of these have leaked as a result of corrosion, punctures, and detached fittings. As a result, the State of California required the replacement of older tanks with new double-walled fiberglass tanks with flexible connections and monitoring systems. UST owners were given 10 years to comply with the new requirements, until December 22, 1998. However, many UST owners did not act by the deadline, so the state granted an extension ending January 1, 2002. The SWRCB, in cooperation with the Office of Emergency Services, maintains an inventory of leaking underground fuel tanks in a statewide database.

Regulations regarding the maintenance and cleanup of tanks can be found in the following governmental codes:

- UST Regulations, California Code of Regulations (CCR) Title 23, Article 5 and Article 11

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- Policies and Procedures for the Cleanup and Abatement of Discharges under California Water Code § 13304 and related State Water Board Resolutions 1992-0049 and 2012-0016
- California Health & Safety Code (H&SC) §§ 25280–25299.8, regarding public health and safety, and safety to the environment while dealing with underground tanks

California Code of Regulations Title 22, Division 4.5

Title 22, Division 4.5 of the California Code of Regulations (CCR) sets requirements for hazardous-waste generators, transporters, and owners or operators of treatment, storage, or disposal facilities. These regulations include requirements for packaging, storage, labeling, reporting, and general management of hazardous waste prior to shipment. The regulations also specify the requirements for transporting shipments of hazardous waste, including manifesting, vehicle registration, and emergency accidental discharges during transportation.

Rule 1403

South Coast Air Quality Management District (SCAQMD) Rule 1403 governs the demolition of buildings containing asbestos materials. Rule 1403 specifies work practices to minimize asbestos emissions during building demolition and renovation activities, including the removal and associated disturbance of ACM. The requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time schedules, handling and cleanup procedures, storage, and disposal requirements for asbestos-containing waste materials.

5.5.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- HAZ-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- HAZ-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- HAZ-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- HAZ-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- HAZ-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard for people residing or working in the project area.
- HAZ-6 For a project in the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.



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HAZ-7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

HAZ-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to the urbanized areas or where residences are intermixed with wildlands.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold HAZ-1
- Threshold HAZ-5
- Threshold HAZ-6
- Threshold HAZ-7
- Threshold HAZ-8

5.5.3 Environmental Impacts

Impact Analysis

The following impact analysis addresses thresholds of significance for potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.5-1: THE PROJECT MAY CREATE A HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH ACCIDENTAL RELEASE OF ASBESTOS-CONTAINING MATERIAL AND/OR LEAD-BASED PAINT. [THRESHOLD HAZ-2 (PART)]

Impact Analysis: The proposed project would require the removal of 34 buildings: 32 residential and 2 commercial. These buildings were constructed between 1920 and 1968, and LBP or ACM may be released during demolition.

Lead-Based Paint

The use of lead in paint and gasoline has been banned because lead is a reproductive toxin and a cancer-causing substance; it also impairs the development of the nervous system and blood cells in children (DTSC 2008). Inspection, testing, and removal of lead-containing building materials must be performed by state-certified contractors and comply with applicable regulations. Lead must be contained during demolition activities, and structures built before 1978 are automatically presumed to contain LBP without an inspection (California Health & Safety Code §§ 17920.10 and 105255). Lead waste that is classified as hazardous waste may be transported to the Chemical Waste Management, Inc., facility in Kettleman Hills, California, a CERCLA-approved, TSCA- and RCRA-permitted landfill.

Asbestos-Containing Materials

Asbestos is the name of a group of silicate minerals that are heat resistant, and thus were commonly used as insulation and fire retardant. Inhaling asbestos fibers has been shown to cause lung disease (asbestosis) and lung cancer (mesothelioma; DTSC 2008). Given the age of buildings onsite (1920-1968), there may be ACM in some of the buildings. Compliance with SCAQMD Rule 1403 (Asbestos Emission from Demolition/Renovation Activities) is required. The requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time

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schedules, ACM handling and cleanup procedures, storage, and disposal requirements for asbestos-containing waste material. These materials would be characterized and classified for disposal purposes. It is anticipated that asbestos waste would be transported to the Azusa Land Reclamation Landfill in Azusa, Los Angeles County, California. The facility is permitted for direct land filling of asbestos-containing waste material, both friable and nonfriable, into a fully lined, RCRA Subpart D landfill unit.

IMPACT 5.5-2 ACCIDENTAL RELEASE OF HAZARDOUS MATERIALS THAT WOULD BE USED BY THE PROJECT WOULD NOT POSE SUBSTANTIAL HAZARDS TO PEOPLE OR THE ENVIRONMENT [THRESHOLD HAZ-2 (PART)].

Hazardous materials such as fuels, greases, paints, and cleaning materials would be used during project construction. The City would be required to comply with local, state, and federal regulations as detailed above, which would reduce potential impacts arising from accidental releases of hazardous materials. For example, all spills or leakage of petroleum products during construction activities must be contained immediately, the hazardous material identified, and the material remediated according to state and local regulations. All contaminated waste encountered would be collected and disposed of at an appropriately licensed disposal or treatment facility. Additionally, the proposed project would be constructed and operated with strict adherence to all requirements of the Santa Ana Fire Department's emergency response plan. Therefore, the project would not create substantial hazards to the public or the environment due to accidental release of hazardous materials.

IMPACT 5.5-3: PROJECT CONSTRUCTION MAY GENERATE EMISSIONS THAT AFFECT AIR QUALITY AT NEARBY SCHOOLS. HANDLING OF HAZARDOUS MATERIALS AND HAZARDOUS WASTES BY THE PROJECT WOULD NOT POSE SUBSTANTIAL RISKS TO STUDENTS AT NEARBY SCHOOLS. [THRESHOLD HAZ-3]



Impact Analysis: Three schools are within a quarter mile of the proposed project: James Monroe Elementary School at 417 East Central Avenue, Manuel Esqueda Elementary School at 2240 South Main Street, and Cesar Chavez High School at 2128 Cypress Avenue. James Monroe Elementary School and Manuel Esqueda Elementary School are shown on Figure 3-3, Existing Land Use. Cesar Chavez High School is one block (380 feet) north of the west end of the project site. These schools are all in the Santa Ana Unified School District and may be affected by emissions during the construction of the proposed project.

Air Emissions

Demolition and construction of the road widening would not emit toxic air emissions. Land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from SCAQMD include industrial land uses, such as chemical processing, and warehousing operations where substantial truck idling could occur onsite. The proposed project is a roadway improvement project and would not develop stationary sources.

Hazardous Materials and Hazardous Wastes to Be Handled by the Project

Routine use of hazardous materials by the project would not cause substantial hazards to people, including persons on any of the three schools specified above, as substantiated in Section 5.8, Hazards and Hazardous Materials, of the Initial Study included as Appendix A of this Draft EIR. Potential hazards arising from ACM and LBP in buildings that would be demolished would be less than significant, as explained above under Impact 5.5-1.

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IMPACT 5.5-4: A PORTION OF THE SITE IS INCLUDED ON A LIST OF HAZARDOUS MATERIALS SITES. [THRESHOLD HAZ-4]

Impact Analysis: Two parcels that would be acquired for the proposed roadway widening are included on a list of hazardous materials sites: the Arco Smog Pro Service Station at 2245 South Main Street and the Wells Fargo bank at 2301 South Main Street. [As shown on Figure 4-1a each of these parcels will be acquired to widen the roadway; the widened expanded roadway right-of-way would occupy approximately the southern one-third of the Arco Station parcel and approximately a nine-foot width along the northern edge of the Wells Fargo bank parcel. The Arco station is an active gasoline service station that has operated since approximately 1952. Soil and groundwater are impacted with petroleum hydrocarbons from a LUST, and the case remains open with the SARWQCB. The Wells Fargo Bank parcel has a LUST that leaked petroleum hydrocarbons into the local groundwater. The LUST was closed onsite in 2006 but the case remains open under the authority of the SARWQCB. Both the gas station and the bank sites have the potential to impact project-related construction activities.

Both tanks remain open investigations under the oversight of the SARWQCB, and project-related construction activities would be allowed as these investigations continue. The regulations discussed above under “Regulatory Setting” list public health and safety requirements for workers that may be exposed to these contaminants. CCR Title 23, Article 5 and Article 11, describes the process to complete initial site abatement and to mitigate any public safety hazards. California Water Code Section 13304 also requires responsible parties to clean up and abate any hazardous material contamination under “Policies and Procedures for the Cleanup and Abatement of Discharges” through the State Water Board Resolutions 1992-0049 and 2012-0016. California Health & Safety Code Sections 25280 to 25299.8 specifically implement public health and safety regulations for the design and use of USTs and the abatement of spills related to USTs. Construction workers must be notified of the presence of health risks related to the LUSTs and trained per OSHA’s regulations for potential exposure to safety or health hazards under 29 CFR 1910.120.

The cleanup of these two sites must comply with health and safety regulations for LUSTs. Construction operations must comply with OSHA’s regulations for potential exposure to safety or health hazards. Compliance with these regulations would reduce the potential for public exposure to hazardous materials.

5.5.4 Cumulative Impacts

The project is not anticipated to result in the storage or release of any significant amount of hazardous materials or waste and therefore, would not combine with any other potential hazardous conditions to result in cumulatively considerable impacts. The LUSTs at the Arco Smog Pro Service Station and the Wells Fargo Bank are regulated by California codes and regulations (listed under “Regulatory Setting”), and exposure of construction workers to risks related to these tanks would be reduced to less than significant levels. Other hazardous materials sites near the project site – 29 sites are identified within 0.25 mile of the project site above in Table 5.5-1 – are also known to regulatory agencies, and are subject to the same regulations discussed above that apply to hazardous materials sites within the project site. The use of hazardous material is controlled and permitted by the OCHCA, a state-recognized CUPA, whose responsibilities include but are not limited to:

- Inspecting hazardous material handlers and hazardous-waste generators to ensure compliance with laws and regulations
- Implementing CUPA programs for the development of accident prevention and emergency plans

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- Proper installation, monitoring, and closure of underground tanks
- Handling, storage, transportation, and disposal of hazardous wastes
- Providing 24-hour response to emergency incidents involving hazardous materials or wastes
- Conducting investigations and taking enforcement action as necessary against anyone who disposes of hazardous waste illegally or otherwise manages hazardous materials or wastes in violation of federal, state, or local laws and regulations

The hazardous materials control and safety programs and available emergency response resources of the OCHCA, along with periodic inspections to ensure regulatory compliance, reduce the potential risk of upset and exposure to hazardous materials associated with nearby businesses. No adverse cumulative impacts related to hazardous substances or the creation of any health hazards are anticipated as a result of this project. In consideration of the preceding factors, the project's contribution to cumulative hazards and hazardous materials impacts would be rendered less than considerable, and therefore less than cumulatively significant.

5.5.5 Existing Regulations

- SCAQMD Rule 1403: Asbestos Emissions from Demolition/Renovation Activities
- California Code of Regulations Title 22, Division 1, Chapter 12
- U.S. Code, Title 42, Chapter 82, Subchapter IX, Regulation Of Underground Storage Tanks
- California Code of Regulations (CCR) Title 23, Article 5 and Article 11, Underground Storage Tank Regulations
- California Water Code Section 13304 and related State Water Board Resolutions 1992-0049 and 2012-0016: Policies and Procedures for the Cleanup and Abatement of Discharges
- California Health & Safety Code §§ 25280–25299.8: Underground Storage Tank Regulations
- Code of Federal Regulations Title 29, § 1910.120: Occupational health protections regarding construction work related to leaking underground storage tanks.



5.5.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, these impacts would be less than significant: 5.5-1, 5.5-2, 5.5-3, and 5.5-4.

5.5.7 Mitigation Measures

No mitigation measures are required.

5.5.8 Level of Significance After Mitigation

Impacts would be less than significant.

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5.6 HYDROLOGY AND WATER QUALITY

This section of the Draft EIR analyzes the potential environmental effects of the proposed project on hydrology and water quality. The analysis in this section is based in part on the following technical reports:

- *Warner Avenue – Preliminary Drainage Study*, IBI Group, April 8, 2013
- *Project-Specific Water Quality Management Plan – (Conceptual)*, IBI Group, September 10, 2009

A complete copy of the drainage study is included as Appendix I-1, and the water quality management plan is Appendix I-2 of this Draft EIR.

5.6.1 Environmental Setting

Hydrologic Conditions

Climate and Precipitation

The Santa Ana River region has a Mediterranean climate, with hot, dry summers and cooler, wet winters. Average annual precipitation ranges from 12 inches per year in the coastal plain to 18 inches per year in the inland alluvial valleys, reaching 40 inches or more in the San Bernardino Mountains. Most of the precipitation occurs between November and April as rain and snow. The climatological cycle of the region results in high surface-water flows in the spring and early summer followed by low flows during the dry season. Winter and spring floods generated by storms are not uncommon in wet years. During the dry season, infrequent summer storms can cause torrential flooding in local streams (SARWQCB Fact Sheet).

Watershed

A watershed is the geographic area draining into a river system, ocean, or other body of water through a single outlet and includes the receiving waters. Watersheds are usually bordered and separated from other watersheds by mountain ridges or other elevated areas.

The project site is in the Santa Ana River Watershed, which includes much of Orange County, much of western Riverside County, part of southwestern San Bernardino County, and a small portion of Los Angeles County. Drainage in the Santa Ana River Watershed is southwest via the Santa Ana River to the Pacific Ocean (see Figure 5.6-1, *Santa Ana River Watershed*).

The watershed includes parts of the San Gabriel, San Bernardino, and San Jacinto Mountains on the north, northeast, and east, respectively; the San Jacinto Basin in western Riverside County; the Upper Santa Ana River Valley in San Bernardino and Riverside counties; the Santa Ana Mountains; and the southeastern part of the Los Angeles Basin in Orange County. The watershed covers approximately 2,800 square miles with about 700 miles of rivers and major tributaries (SAWPA 2013). The Santa Ana River extends 96 miles from the San Bernardino Mountains in San Bernardino County to the Pacific Ocean at the boundary between the cities of Huntington Beach and Newport Beach.

The Santa Ana Watershed is subdivided into several smaller watersheds, and the project site is in the Newport Bay Watershed. The Newport Bay Watershed spans 152 square miles from the foothills of the Santa Ana Mountains in the north to the Pacific Ocean in the south and from the cities of Santa Ana and



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Costa Mesa on the west to the City of Lake Forest on the east (see Figure 5.6-2, *Newport Bay Watershed*).

Local Surface Waters and Drainage

Drainage in the project site is via curb and gutter in streets and into City of Santa Ana and Orange County Flood Control District (County) storm drains. The properties along the Warner Avenue project site include a mixture of residential, commercial, institutional, military, and industrial, with grades along the street typically running between 0.2 percent to 0.5 percent and draining toward the south and west. Storm drains convey runoff to Orange County Flood Control District Facility F01—the Santa Ana Delhi Channel. The upstream end of the Santa Ana Delhi Channel is next to the intersection of Warner Avenue and Flower Street, 0.5 mile west of the project site. The Santa Ana Delhi Channel carries stormwater southward, discharging into Upper Newport Bay about 4.4 miles south of its upstream end (see Figure 5.6-3, *Regional Drainage*). Soils on the site are Group C—silty-loamy soils with fine texture and slow infiltration rates. Based on the Federal Emergency Management Agency flood maps, this area is not in any recorded flood plain.

Surface Water Quality

Beneficial Uses

Beneficial uses are ways that water can be used for the benefit of people and/or wildlife. For surface waters and groundwater in the Santa Ana River Basin, beneficial uses are described in the Santa Ana River Basin Plan. Beneficial uses of Upper Newport Bay, receiving waters from the project site, are recreation (both body-contact and non-body-contact); wildlife habitat, including habitat for rare, threatened, or endangered species; marine and estuary habitat; and shellfish harvesting (SARWQCB 2008).¹

Water Quality Limited Segments

The Santa Ana Delhi Channel is included on the US Environmental Protection Agency's (EPA) 2010 Section 303(d) List of Water Quality Limited Segments for contamination with indicator bacteria (*Escherichia coli* [*E. coli*] and fecal coliform bacteria). A total maximum daily load (TMDL) is due for completion by 2021 that will specify estimated concentrations of the affected bacteria allowable per 100 mL (3.4 ounces) of water (SWRCB 2013).

Upper Newport Bay is included on the Section 303(d) List of Water Quality Limited Segments for contaminants specified below in Table 5.6-1.

¹ An estuary is a partially enclosed bay where fresh water and sea water mix.

**Table 5.6-1
Upper Newport Bay Water Quality Impairments**

Contaminant	Total Maximum Daily Load (TMDL) Status; Completion Date for Proposed TMDLs
Chlordane (organochlorine pesticide)	Proposed 2019
Copper	Proposed 2007
DDT (organochlorine pesticide)	Proposed 2019
Metals	Proposed 2019
Nutrients	Completed
PCBs (polychlorinated biphenyls)	Proposed 2019
Pesticides	Completed
Sediment Toxicity	Proposed 2019
Sedimentation/Siltation	Completed

Source: SWRCB 2013.

Groundwater

Groundwater occupies the pores and cracks in soil and rock under the ground surface. Its source is either natural or artificial recharge. Natural recharge begins as rain or snow that seeps into the soil and rocks directly or from rivers, streams, and lakes. Artificial recharge is the intentional recharge of water in ponds or spreading basins or through the use of injection wells.

Groundwater basins may be defined by geologic structures, such as earthquake faults or fault zones, or they may be defined by administrative boundaries based on water quality or some other factor. Groundwater flow follows a path of least resistance to a point of equilibrium.

The Orange County Main Groundwater Basin underlies much of northern and central Orange County, including the project area. The Orange County Water District (OCWD) is responsible for managing groundwater quality and supply. Approximately 375,000 acre-feet of groundwater per year are taken out for municipal water use, and an average of 335,000 acre-feet of water per year are recharged into the basin. About 80 percent of recharge is from surface water, including the Santa Ana River, and 20 percent is imported water purchased from the Metropolitan Water District of Southern California (MWD). The MWD obtains water from the State Water Project and the Colorado River (OCWD 2004).

Groundwater Quality

Regional

The project site is in the Orange County Groundwater Management Zone (GWMZ), which includes most of the Orange County Groundwater Basin. Beneficial uses of groundwater in the Orange County GWMZ are municipal, agricultural, industrial process supply, and industrial service supply.²

Most water pumped from the basin for municipal use is of potable quality. Five water treatment systems treat groundwater from the basin for four types of contaminants: salinity, total dissolved solids (TDS),

² Industrial service refers to industrial activities not dependent on water quality, including cooling water supply and hydraulic conveyance. Industrial process refers to activities dependent on water quality, including manufacturing and food processing.



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nitrate, and color from the remains of ancient vegetation. The facilities and contaminants that each facility treats are:

- Tustin Main Street Desalter: nitrate
- Tustin 17th Street Desalter: nitrate, TDS
- Mesa Colored Water Treatment Facility: colored water
- Irvine Ranch Water District (IRWD) Deep Aquifer Treatment System: colored water
- IRWD Irvine Desalter: salt

In 2010 the total volume of water treated at seven treatment facilities in Orange County—five of which are within the basin—was 17,864 acre-feet, less than 10 percent of the 201,075 acre-feet of groundwater pumped from the basin that year. The basin provides 60 to 70 percent of the domestic water for 2.55 million people (Malcolm-Pirnie 2011).

Local

Two recognized environmental conditions (REC) were identified along the project site: the Arco Smog Pro Service Station at 2245 South Main Street and the Wells Fargo Bank at 2301 South Main Street.³ The service station has operated on this site since approximately 1952. Soil and groundwater are impacted with petroleum hydrocarbons from a leaking underground storage tank (LUST). The plume extends south, and some gasoline constituents have been found in groundwater monitoring wells in Warner Avenue. Confirmation borings were drilled and soil samples from the borings tested in March 2012. The case remains open with the Santa Ana Regional Water Quality Control Board (SARWQCB) (GeoTracker 2013; Stratus Environmental 2012).

The Wells Fargo Bank is under the oversight of SARWQCB for a LUST. The tank was closed in place by the Santa Ana Fire Department in 2006, and the SARWQCB took over the case in 2007. Shallow groundwater is impacted with petroleum hydrocarbons, and the extent of contamination has not been determined. Groundwater monitoring was ongoing in 2012, and the case remains open (GeoTracker 2013; ACC Environmental Consultants 2012).

Regulatory Setting

Federal

Clean Water Act

The federal Water Pollution Control Act, also known as the Clean Water Act (CWA), is the primary statute governing water quality. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the EPA the authority to implement pollution control programs, such as setting wastewater standards for industry. The statute regulates all discharges into the nation's waters to restore and preserve their integrity. The CWA sets water quality standards for all contaminants in surface waters and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters without a permit. The CWA mandates permits for wastewater and stormwater discharges, requires states to establish site-specific water quality standards for navigable bodies of water, and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA also funds the construction of sewage treatment plants and recognizes the need for planning to address nonpoint sources of pollution. The following CWA sections assist in ensuring water quality in surrounding water bodies.

³ A recognized environmental condition (REC) is the presence or likely presence of hazardous materials or petroleum products under conditions indicating an existing or past release or a material threat of a release, into structures or soil or groundwater or surface water; even under conditions in compliance with laws.

Santa Ana River Watershed



Source: Santa Ana Watershed Protection Authority 2004

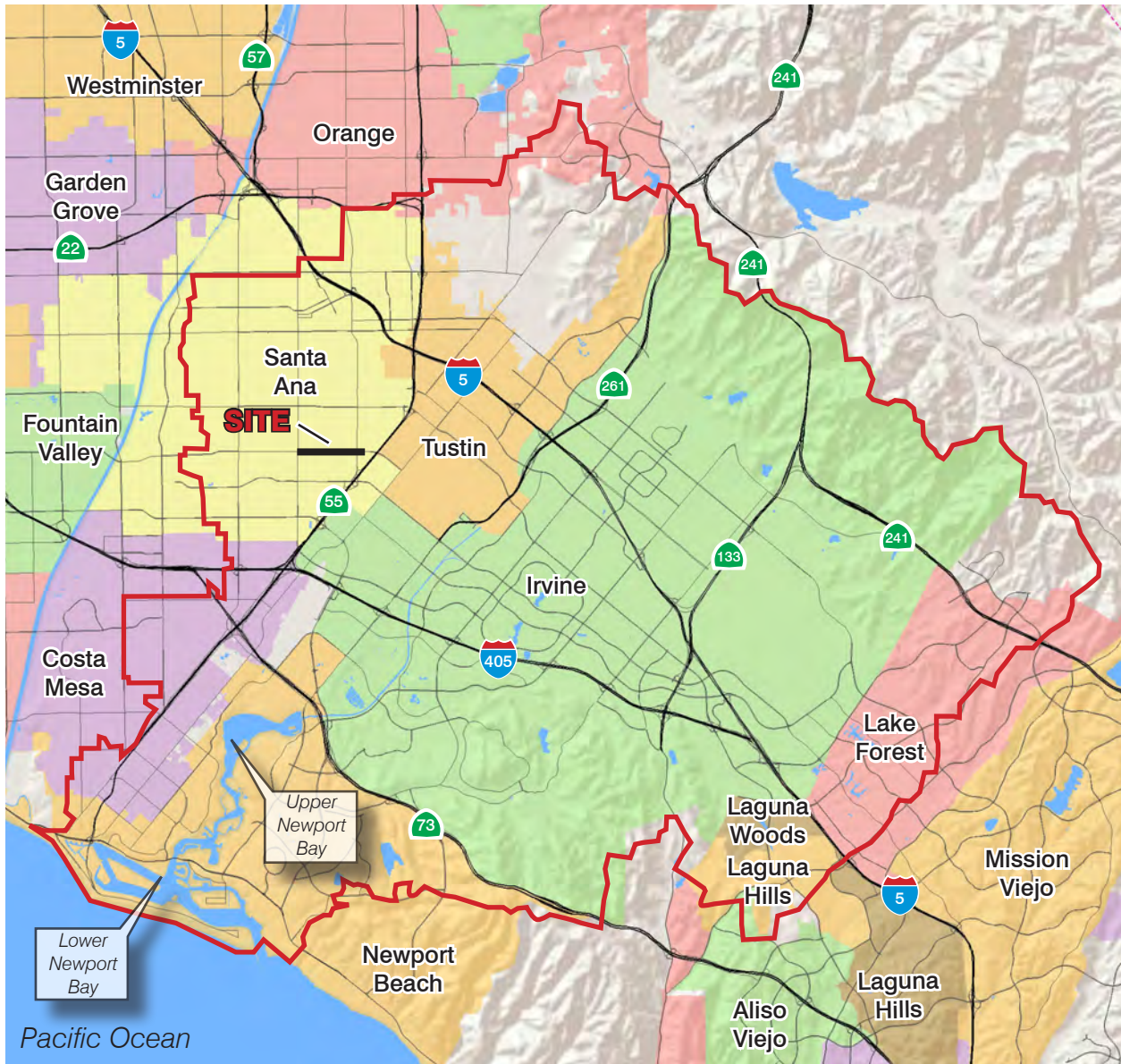
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Newport Bay Watershed



— Newport Bay Watershed Area



Source: OC Public Works 2013

Warner Avenue Widening from Main Street to Grand Avenue Draft EIR

PlaceWorks • **Figure 5.6-2**

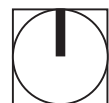
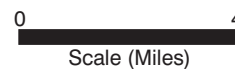
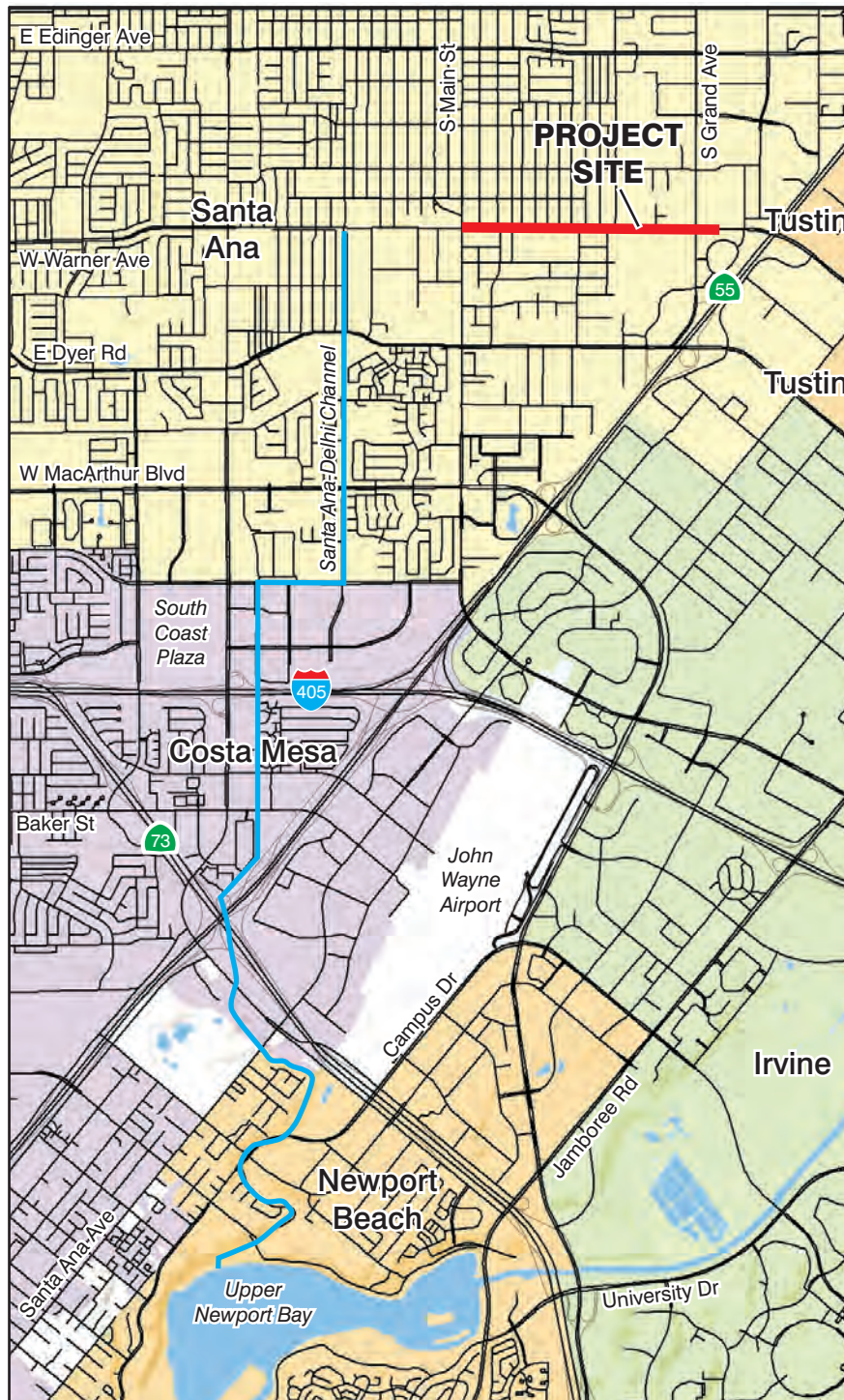
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Regional Drainage



Source: OC Public Works 2010

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- CWA Section 208 requires the use of best management practices (BMPs) to control discharge of pollutants in stormwater during construction.
- CWA Section 303(d) requires creation of a list of impaired water bodies by states, territories, and authorized tribes; evaluation of lawful activities that may impact impaired water bodies; and preparation of plans to improve the quality of these water bodies. Water bodies on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution-control technology. CWA Section 303(d) also establishes the Total Maximum Daily Loads (TMDL) process to guide the application of water quality standards.
- CWA Section 401 requires any project that needs a federal permit (such as a Section 404 permit) that allows discharge to waters of the United States to also obtain state certification that the activity would not violate water quality standards.
- CWA Section 402(p) regulates point-source discharges to surface waters under the National Pollutant Discharge Elimination System (NPDES) permit program, administered by the EPA. In California, the State Water Resources Control Board (SWRCB) is authorized to oversee the NPDES program through the Regional Water Quality Control Boards (RWQCB).
- CWA Section 404 authorizes the US Army Corps of Engineers to require permits for projects that will discharge dredge or fill materials into waters of the United States, including wetlands.

National Pollutant Discharge Elimination System

Under the NPDES program promulgated under Section 402 of the CWA, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain an NPDES permit. The term pollutant broadly includes any type of industrial, municipal, and agricultural waste discharged into water. Point sources are discharges from publicly owned treatment works (POTWs), discharges from industrial facilities, and discharges associated with urban runoff. While the NPDES program addresses certain specific types of agricultural activities, the majority of agricultural facilities are defined as non-point sources and exempt from NPDES regulation. Pollutant contributors come from direct and indirect sources. Direct sources discharge directly to receiving waters; indirect sources discharge wastewater to POTWs, which in turn discharge to receiving waters. Under the national program, NPDES permits are issued only to direct point source discharges. The National Pretreatment Program addresses industrial and commercial indirect dischargers. Municipal sources are POTWs that receive primarily domestic sewage from residential and commercial customers. Specific NPDES program areas applicable to municipal sources are the National Pretreatment Program, the Municipal Sewage Sludge Program, Combined Sewer Overflows (CSOs), and the Municipal Storm Water Program. Non-municipal sources include industrial and commercial facilities. Specific NPDES program areas applicable to these industrial/commercial sources are: Process Wastewater Discharges, Non-Process Wastewater Discharges, and the Industrial Storm Water Program. NPDES issues two basic permit types: individual and general. Also, the EPA has recently focused on integrating the NPDES program further into watershed planning and permitting (EPA 2012 [Office of Wastewater Management]).

Construction projects that disturb one acre of land or more are required to control stormwater discharges associated with construction activities under the NPDES General Permit for Construction Activities (GCP). Construction sites that meet this criterion must submit a Notice of Intent (NOI) to file for permit coverage or else they will be in violation of the CWA. The SWRCB issued a Statewide General Construction Activity Permit, Order No. 2009-0009-DWQ as modified by Order No. 2012-0006-DWQ effective July 17, 2012.



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Under this permit, applicants are required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography before and after construction, and drainage patterns across the project site. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for nonvisible pollutants if there is a failure of the BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

Operation of the widened roadway would require preparation and implementation of a Water Quality Management Plan (WQMP) pursuant to the Orange County MS4 permit, Order No. R8-2009-0030, NPDES No. CAS618030, as amended by Order No. R8-2010-0062. This permit regulated discharges to urban runoff in the part of Orange County within the jurisdiction of the Santa Ana Regional Water Quality Control Board. A conceptual WQMP for the project has been prepared and is included as Appendix I-2 of this Draft EIR. A final WQMP for the project would be completed before the beginning of ground disturbance.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) is the basic water quality control law for California. Under this act, the SWRCB has ultimate control over state water rights and water quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The state is divided into nine regions related to water quality and quantity characteristics. The SWRCB, through its nine RWQCBs, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. The City of Santa Ana is in the Santa Ana River Basin, Region 8, in the Upper Santa Ana Watershed. The water quality control plan for the Santa Ana River Basin was adopted in 1995 and updated in February 2008. This plan gives direction on the beneficial uses of the state waters within Region 8, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the plan.

Storm Water Pollution Prevention Plans

Pursuant to the CWA, in 2001 the SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites (NPDES No. CAS000002). Under this Statewide General Construction Activity permit, discharges of stormwater from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for stormwater discharges or be covered by the General Permit. Coverage by the General Permit is accomplished by completing and filing a Notice of Intent with the SWRCB and developing and implementing a SWPPP. Each applicant under the General Construction Activity Permit must ensure that a SWPPP is prepared prior to grading and is implemented during construction. The SWPPP must list BMPs implemented on the construction site to protect stormwater runoff, and must contain a visual monitoring program; a chemical monitoring program for "nonvisible" pollutants to be implemented if there is a failure of BMPs; and a monitoring plan if the site discharges directly to a water body listed on the state's 303(d) list of impaired waters. The SWRCB has issued a new Statewide General Construction Activity Permit, Order No. 2009-0009-DWQ, which took effect July 1, 2010; the latest amendment to the Permit is Order No. 2012-0006-DWQ effective July 17, 2012.

5.6.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- HYD-1 Violate any water quality standards or waste discharge requirements.
- HYD-2 Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site.
- HYD-4 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- HYD-5 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- HYD-6 Otherwise substantially degrade water quality.
- HYD-7 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- HYD-8 Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- HYD-9 Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- HYD-10 Be subject to inundation by seiche, tsunami, or mudflow.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold HYD-2 (groundwater supply and groundwater recharge)
- Threshold HYD-7 (housing placed in 100-year flood zones)
- Threshold HYD-8 (changing flood flows in 100-year flood zones)
- Threshold HYD-9 (flooding due to failure of levee or dam)
- Threshold HYD-10 (flooding due to seiche, tsunami, or mudflow)

These impacts will not be addressed in the following analysis.

5.6.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.



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IMPACT 5.6-1: PROJECT-RELATED STORMWATER IMPROVEMENTS WOULD REMEDY EXISTING DRAINAGE CAPACITY DEFICIENCIES, IMPROVING EXISTING CONDITIONS. [THRESHOLDS HYD-3, HYD-4, AND HYD-5]

Impact Analysis: The properties lining the project corridor include a mixture of residential, commercial, and industrial, with average grades along Warner Avenue between 0.2 percent to 0.5 percent draining toward the south and west. The drainage study indicates that the improvements to the project area would have a negligible impact on the amount of impervious areas of the adjacent drainage basins, and drainage system improvements that would be installed as part of the project would increase the capacity of underground storm drains in Warner Avenue. Proposed upgrades to the storm drainage in the project site are listed below in Table 5.6-2.

**Table 5.6-2
Proposed Upgrades to Storm Drainage System**

<i>Pipe Reach and Location</i>	<i>Capacity Needed, cubic feet per second (cfs)</i>	<i>Existing Capacity, cfs</i>	<i>Existing Deficiency, cfs</i>	<i>Proposed Upgrade</i>	<i>Upgrade Capacity, cfs</i>
4706–4707 Grand Avenue	396.36	396.41	None	None	Not applicable
4705–4706 Grand Avenue to Union Pacific Railroad Tracks	355.41	396.41	None	None	Not applicable
3826–3834 Standard Avenue to Halladay Street	128.72	15.11	113.61	66-inch pipe	164.35
3834–3845 Evergreen Street to Halladay Street	145.85	14.79	131.06	66-inch pipe	160.89
3845–3805 Halladay Street to Rousselle Street	189.36	16.61	172.75	72-inch pipe	227.91
3805–3733 Rousselle Street to Maple Street	1,110.73	168.57	942.16	11-foot x 8-foot reinforced concrete box (RCB)	1,141.97
3733–3739 Maple Street to Orange Avenue	1,123.07	258.98	864.09	11-foot x 8-foot RCB	1,208.03
3739–3745 Orange Avenue to Cypress Avenue	1,150.36	241.89	908.47	11-foot x 9-foot RCB	1,327.15
3745–3746 Cypress Avenue to Main Street	1,167.79	192.62	975.17	13-foot x 9-foot RCB	1,310.51
3746–3746 Main Street	1,167.79	146.31	1,021.48	13-foot x 9-foot RCB	1,310.51

Source: IBI Group 2013.

As the table shows, after installation of proposed storm drain improvements there would be adequate storm drainage capacity along the entire project site from Main Street to Grand Avenue. Drainage flow would be improved in comparison to existing conditions.

IMPACT 5.6-2: PROJECT-RELATED CONSTRUCTION MAY RESULT IN AN INCREASE IN POLLUTANT CONCENTRATIONS IN STORMWATER RUNOFF. [THRESHOLDS HYD-1 AND HYD-6]

Impact Analysis:

Construction Phase

Project site clearing and grading and project construction could result in substantial water pollution if effective pollution control measures are not used. The project will prepare and implement a SWPPP specifying BMPs to be used to minimize stormwater contamination resulting from project grading and construction activities. Materials commonly used during grading and construction for which BMPs are needed to minimize or avoid contact with stormwater include: pesticides; fertilizers; fuels, lubricants, and solvents; paints; and construction materials such as plaster, concrete, and asphalt. In addition, many of the BMPs in a SWPPP are for minimizing soil erosion; common means of soil erosion from construction sites are wind, flowing water, and being tracked offsite by vehicles. BMPs in a SWPPP are described by category in Table 5.6-3.

**Table 5.6-3
SWPPP BMPs by Category**

BMP Category	Aim	Examples
Erosion Controls	Prevent soil particles from being detached from the ground surface and transported in runoff	Preserving existing vegetation; soil binders; geotextiles and mats
Sediment controls	Filter out soil particles that have entered runoff	Barriers such as slit fences and gravel bag berms; and street sweeping
Tracking Controls	Prevent soil from being tracked offsite by vehicles	Stabilized construction roadways and entrances/exits
Wind Erosion Control	Prevent soil from being transported offsite by wind	Similar to erosion controls above
Non-stormwater Management	Prevent discharges of soil from site by means other than runoff and wind	BMPs regulating various construction practices; water conservation
Waste and Materials Management	Prevent release of waste materials into storm discharges	BMPs regulating storage and handling of materials and wastes

CASQA 2003.



The project would implement such BMPs, and project grading and construction would not result in substantial pollution of stormwater.

IMPACT 5.6-3: IMPLEMENTATION OF BEST MANAGEMENT PRACTICES INCLUDED IN THE PROJECT-SPECIFIC WATER QUALITY MANAGEMENT PLAN WOULD ASSURE THAT LONG-TERM IMPACTS TO WATER QUALITY ARE MINIMIZED. [THRESHOLDS HYD-1 AND HYD-6]

Operations Phase

The proposed project would result in a nominal increase in surface water flows and would not introduce new land uses or new long-term, operational-related pollutants. New BMPs to be implemented under a

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project-specific WQMP would, however, provide additional control of existing sources of potential pollutants.

Pollutants of Concern

Potential pollutants associated with the urban runoff from the project site would include the following general categories:

Metals. The primary source of metal pollution in urban runoff is typically commercially available metals and metal products. Metals of concern include cadmium, chromium, copper, lead, mercury, and zinc. Lead and chromium have been used as corrosion inhibitors in primer coatings and cooling tower systems. Metals are also raw material components in nonmetal products such as fuels, adhesives, paints, and other coatings. At low concentrations naturally occurring in soil, metals may not be toxic. However, at higher concentrations, certain metals can be toxic to aquatic life and to humans through contaminated groundwater.

Organic Compounds. Organic compounds are carbon based. Commercially available or naturally occurring organic compounds are found in pesticides, solvents, and hydrocarbons. Organic compounds can, at certain concentrations, indirectly or directly constitute a hazard to life or health. Although toxic levels of solvents and cleaning compounds cannot be discharged into the MS4 (Municipal Separate Storm Sewer System), dirt, grease, and grime in cleaning fluid or rinse water may include lower levels of organic compounds that are harmful or hazardous to aquatic life.

Sediments. Sediments are soils or other surface materials eroded and then transported or deposited by the action of wind, water, ice, or gravity. Sediments can increase turbidity, clog fish gills, reduce spawning habitat, lower young aquatic organisms survival rates, smother bottom-dwelling organisms, and suppress aquatic vegetation growth.

Trash and Debris. Trash (such as paper, plastic, polystyrene packing foam, and aluminum materials) and biodegradable organic matter (such as leaves, grass cuttings, and food waste) are general waste products on the landscape. Trash and debris may have a significant impact on the recreational value of a water body and aquatic habitat. Excess organic matter can create a high biochemical oxygen demand in a stream and thereby lower its water quality. In addition, in areas where stagnant water exists, the presence of excess organic matter can promote septic conditions resulting in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide.

Pathogens. Pathogens (bacteria and viruses) are microorganisms that thrive under certain environmental conditions. Their proliferation is typically caused by the transport of animal or human fecal wastes from the watershed. Water containing excessive bacteria and viruses can alter the aquatic habitat and create a harmful environment for humans and aquatic life. Also, the decomposition of excess organic waste causes increased growth of undesirable organisms in the water.

Best Management Practices

BMPs specified in the WQMP for inclusion in the project are listed in Table 5.6-4.

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**Table 5.6-4
Best Management Practices**

<i>BMP Category</i>	<i>Aim</i>	<i>Description or Example</i>
BMPs to Be Used in Project Design		
Site Design BMPs		
Maximize permeable area	Reduce the volume and rate of runoff, thus reducing the amount of stormwater that must be treated	Build driveways and other low-traffic areas with open-jointed paving materials or permeable surfaces, such as pervious concrete, porous asphalt, unit pavers, and granular materials.
Structural Source Control BMPs		
Provide storm drain system stenciling and signage	Reduce the potential for pollutants to enter runoff	Provide stenciling and labeling of all storm drain inlets and catch basins, such as “No Dumping Drains to Ocean” and/or graphical icons prohibiting illegal dumping. Identify the party responsible for maintaining stencils and signs.
Treatment Control BMPs		
To be specified in a final WQMP that will be provided to the City before the beginning of construction work	Remove pollutants from runoff onsite before pollutants enter receiving waters	Include grass swales, grass strips, and bio-retention areas; trenches; porous pavements; sand and media filters; and proprietary stormwater treatment devices.
BMPs to Be Used in Project Operation		
Non-Structural Source Control BMPs		
Drainage Facility Inspections and Maintenance	Reduce the potential for pollutants to enter runoff	At a minimum, routine maintenance of privately owned drainage facilities should occur in the late summer or early fall prior to the start of the rainy season (October 1st). The drainage facilities must be cleaned if accumulated sediment/debris fills 25% or more of the sediment/debris storage capacity. Privately owned drainage facilities shall be inspected annually and the cleaning frequency shall be assessed. The final project-specific WQMP shall identify the party responsible for conducting the drainage facility inspection and maintenance.

Source: IBI 2009.



The project would implement the above BMPs, and project operation would not contaminate stormwater with substantial amounts of pollutants.

5.6.4 Cumulative Impacts

Cumulative developments in the Lower Santa Ana River Watershed may increase impervious areas in the watershed, resulting in increases in runoff volumes and flow rates. Other development projects on previously undeveloped land may generate increased amounts of pollutants in stormwater runoff. Thus, other developments could adversely impact storm drainage capacity, flooding, and stormwater quality.

Cumulative developments would be required to comply with the MS4 Permit covering the part of Orange County in the Santa Ana River Watershed. Cumulative projects would also be required to infiltrate, retain, or biotreat stormwater runoff; maximize the amount of permeable areas onsite; conserve natural areas; and minimize changes to predevelopment hydrology. Construction phases of cumulative developments that are one acre or more would obtain coverage under the General Construction Permit by preparing and implementing a SWPPP specifying construction BMPs. Cumulative impacts to hydrology and water quality would be less than significant. In consideration of the preceding factors, the project’s contribution

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to cumulative hydrology and water quality impacts would be rendered less than considerable, and therefore less than cumulatively significant.

5.6.5 Existing Regulations and Standard Conditions

- United States Code, Title 33, Sections 1251 et seq.: Clean Water Act
- Code of Federal Regulations Title 40 Parts 122 et seq.: National Pollutant Discharge Elimination System (NPDES)
- California Water Code Sections 13000 et seq.: Porter-Cologne Water Quality Act

5.6.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.6-1, 5.6-2, and 5.6-3.

5.6.7 Mitigation Measures

No mitigation measures are required.

5.6.8 Level of Significance After Mitigation

Hydrology and water quality impacts would be less than significant.

5.7 LAND USE AND PLANNING

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential impacts to land in the City of Santa Ana from implementation of the Warner Avenue Widening from Main Street to Grand Avenue project. Land use impacts can be either direct or indirect. Direct impacts are those that result in land use incompatibilities, division of neighborhoods or communities, or interference with other land use plans, including habitat or wildlife conservation plans. This section focuses on direct land use impacts. Indirect impacts are secondary effects resulting from land use policy implementation, such as an increase in demand for public utilities or services, or increased traffic on roadways. Indirect impacts are addressed in other sections of this Draft EIR.

5.7.1 Environmental Setting

Santa Ana Neighborhoods

The City of Santa Ana is divided into 64 neighborhood associations (see previous Figure 3-9, *Santa Ana Neighborhoods*). A portion of the project site is in the Delhi Neighborhood: Warner Avenue between Main Street and Standard Avenue.

The City has a number of neighborhoods with historic resources, including French Park, Floral Park, Wilshire Square, West Floral Park, Washington Square, and Heninger Park. The City is also known for its original Mexican barrios, including the Logan, Lacy, Delhi, and Santa Anita neighborhoods, some of which date back to the later 1880s (Santa Ana 2009). The Delhi Neighborhood was established around 1910 and is approximately 2.5 miles southeast of downtown Santa Ana. Warner Avenue (formerly Delhi Road) today forms the central east–west spine of the community.

Delhi is among a number of Mexican-American neighborhoods that formed in Orange County around the turn of the century and are still populated by the descendants of early founders. The 1920 census counted about 500 people living in Delhi. Adults listed their birthplaces as Mexico, and most of their children were born in California. They all spoke Spanish, and a number of families reported owning their own homes, free and clear.

The Delhi of today resembles the old neighborhood. Small houses surround the elementary school, Our Lady of Guadalupe Church, and the Delhi Community Center. A remnant of original residents still lives there, and many new Mexican immigrants have moved in.

Delhi's history comes from the recollections of the people who grew up there. Although the neighborhood is one of the oldest in the City, it's not featured in any books on Santa Ana history. But stories of what brought people to the area have been passed through the generations.

Existing and Surrounding Land Uses

The City of Santa Ana is proposing to widen Warner Avenue between Main Street on the west and Grand Avenue on the east (see previous Figure 3-2, *Local Vicinity*). The eastern end of the project area would actually be just east of Main Street where the widened section of the road transitions to the existing road.

Land uses along Warner Avenue within the project limits include a mixture of residential, commercial, and industrial uses (see previous Figure 3-3a and Figure 3-3b, *Existing Land Use*, for land uses and photo locations, and Figures 3-4, 3-5, and 3-6, *Site Photographs*). A listing of these uses is provided below:



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- Except for the gas station on the northeast corner of Warner Avenue and Main Street, the entire north side of the street from Main Street to Standard Avenue is lined with homes, which include driveway approaches either along Warner Avenue or adjacent cross-streets.
- Homes line the south side of Warner Avenue between Halladay Street and Standard Avenue and between Orange Avenue and Rousselle Street.
- Commercial uses along Warner Avenue include a bank and a small neighborhood shopping center along the south side between Main Street and Orange Avenue. Manuel Esqueda Elementary School is on the northwest corner of Main Street and Warner Avenue.
- From Maple Street to Halladay Street, Warner Avenue is fronted along the south side of the street by Delhi Park, the California National Guard Armory, and James Monroe Elementary School play fields.
- A mixture of small and large industrial uses line both sides of Warner Avenue from Standard Avenue to Grand Avenue; some of the larger uses include Cherry Aerospace at 1224 Warner Avenue and Heritage Paper on the southwest corner of the Warner Avenue/Grand Avenue intersection.

Pedestrian Mobility

There are sidewalks along both sides of Warner Avenue. In some areas the sidewalk is directly adjacent to the street, and parkways separate the sidewalk from the curb in other locations. Sidewalk widths vary from four to ten feet depending on the location; however, some sections restrict pedestrian space to between three to five feet wide between power poles and landscape shrubs or walls. Most driveways and curb returns within the project limits do not meet Americans with Disabilities Act (ADA) clearance and slope requirements.

Bicycle Mobility

Bicycle lanes in the City vary in width from four feet to seven feet depending on the available right-of-way. Bike lanes are not provided along Warner Avenue within the project limits. A Class I bikeway runs north-south throughout the study area and crosses Warner Avenue about 150 feet east of Maple Street. The bicycle path intersection at Warner Avenue is signalized, but remains green for motor vehicle traffic unless the button is pushed by a pedestrian or bicyclist.

Regulatory Setting

Regional

At the regional level, there are several applicable planning related documents and policies that affect the project site.

Southern California Association of Governments

Orange County and the City of Santa Ana are part of a six-county metropolitan region composed of Orange, Los Angeles, Ventura, Riverside, San Bernardino, and Imperial counties. The Southern California Association of Governments (SCAG) is the federally recognized metropolitan planning organization (MPO) for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and serves as a forum for addressing regional issues concerning transportation, the

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economy, community development, and the environment. SCAG also serves as the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. As the southern California region's MPO, SCAG cooperates with the South Coast Air Quality Management District, the California Department of Transportation (Caltrans), and other agencies in preparing regional planning documents. Orange County and its jurisdictions constitute the Orange County Subregion in the SCAG region. This subregion is governed by the Orange County Council of Governments. SCAG has developed plans to achieve specific regional objectives.

Regional Transportation Plan/Sustainable Communities Strategy

On April 4, 2012, SCAG adopted the 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future. SCAG has placed a greater emphasis than ever before on sustainability and integrated planning in the 2012–2035 RTP/SCS. The RTP/SCS vision encompasses three principles that collectively work as the key to the region's future: mobility, economy, and sustainability. The 2012–2035 RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with Senate Bill 375, improve public health, and meet the National Ambient Air Quality Standards as set forth by the federal Clean Air Act. The 2012–2035 RTP/SCS provides a blueprint for improving quality of life for residents by providing more choices for where they will live, work, and play, and how they will move around. Some of the pertinent 2012-2035 SCAG RTP/SCS goals include:

- RTP/SCS G2: Maximize mobility and accessibility for all people and goods in the region.
- RTP/SCS G3: Ensure travel safety and reliability for all people and goods in the region.
- RTP/SCS G4: Preserve and ensure a sustainable regional transportation system.
- RTP/SCS G5: Maximize the productivity of our transportation system.
- RTP/SCS G6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking).
- RTP/SCS G8: Encourage land use and growth patterns that facilitate transit and non-motorized transportation.



The goal of the proposed project is to relieve existing and future projected congestion through the Warner Avenue corridor due to current and anticipated growth trends and future traffic volumes. The widening of Warner Avenue and the provision of on-street Class II bike lanes would reduce traffic congestion and eliminate the existing Warner Avenue bottleneck, increase vehicular safety, and reduce accidents by removing left turn hazards. The proposed project would therefore be consistent with the above SCAG RTP/SCS goals.

Local

Santa Ana General Plan

At the local level, there are several applicable planning related documents and policies that affect the project site, including the City's General Plan.

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Existing General Plan Designations

The City's General Plan establishes a road map to guide growth and development in the City by designating land uses and implementing goals and policies. It provides a long-term vision for the City (Santa Ana GP 1998) (see previous Figure 3-8, *General Plan Land Use Designations*).

Warner Avenue is a public roadway and does not have a specific general plan land use designation. The City of Santa Ana General Plan Circulation Element classifies the roadway as a Major Arterial (Santa Ana GPCE 1998). The zoning and general plan land use designations for parcels fronting Warner Avenue between Main Street and Grand Avenue include the following (Santa Ana GPLUE 1998).

- LR-7 (Low Density Residential)
- GC (General Commercial)
- OS (Open Space)
- IND (Industrial)
- PAO (Professional and Administrative Office)
- INS (Institutional)

Low Density Residential (LR-7): This designation applies to areas of the City that are developed with lower density residential land uses. The allowable maximum development intensity is 7 units per acre. Development in this category is characterized primarily by single-family homes. This designation applies to a large proportion of the City (6,474.5 acres) representing 47 percent of the City's total land area.

General Commercial (GC): This designation applies to commercial corridors in Santa Ana, including those along Main Street, Seventeenth Street, Harbor Boulevard, and other major arterial roadways in the City. The intensity standard applicable to this designation is a floor area ratio of 0.5 to 1.0, though most General Commercial districts have a floor area ratio (FAR) of 0.5.¹ A total of 1,113.6 acres of land is included in this designation.

Industrial (IND): This designation applies to areas developed with manufacturing and industrial uses. The designation applies to areas that are predominantly industrial in character, and includes industrial districts in the southwestern, south central, and southeastern sections of the City. A total of 2,280.9 acres of land in the City is designated Industrial. The maximum floor area ratio for this designation is 0.45.

Institutional (INS): This designation includes the Civic Center, other governmental facilities, City facilities, and public institutions such as schools, etc. Only public properties of approximately five acres or more are designated Institutional. The maximum applicable floor area ratio standard for this designation is 0.5. The 0.5 FAR is used as a guideline since most development in this designation are State, federal, and local governmental facilities that are not subject to local development regulations. A total of 812.6 acres of land is included in this designation.

Open Space (OS): This designation is applied to parks, water channels, cemeteries, and other open space uses. A total of 1,019 acres are included in this land use designation. Of this total, 375 acres are public park land.

¹ Floor area ratio (FAR) is the ratio of the floor area of a building to the area of the parcel containing the building. For instance, a four-story building with 75,000 square feet of floor area on a 60,000-square-foot parcel would have a FAR of 75,000/60,000, or 1.25.

Housing Element

The housing element is required by California state law to be a component of every city's General Plan because housing needs are recognized as a statewide concern. Pursuant to state law, the housing element must identify the City's housing needs, the sites that can accommodate these needs, and the policies and programs to assure that the housing units necessary to meet these needs can be provided. The primary goal of the housing element is to provide a range of housing opportunities for all income groups.

Circulation Element

Warner Avenue is designated in the City's general plan circulation element Master Plan of Streets and Highways as a major arterial (Santa Ana 1998). A major arterial is defined by the City as a six-lane, divided-120-foot-wide arterial (GPCE 1998). Widening Warner Avenue from four to six lanes between Main Street and Grand Avenue would make this section of the street consistent with the City's circulation element.

5.7.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- LU-1 Physically divide an established community.
- LU-2 Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- LU-3 Conflict with any applicable habitat conservation plan or natural community conservation plan.



The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold LU-2
- Threshold LU-3

These impacts will not be addressed in the following analysis.

5.7.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

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IMPACT 5.7-1: PROJECT IMPLEMENTATION WOULD NOT PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY. [THRESHOLD LU-1]

Impact Analysis:

The Delhi neighborhood is one of the oldest in the city. It is an established community, formed in Orange County around the turn of the century. A remnant of original residents still lives there, and many new Mexican immigrants have moved in. Delhi today resembles the old neighborhood in many ways. Small houses surround the community's core of the elementary school, Our Lady of Guadalupe Church, and the Delhi Community Center.

Proposed Project

The proposed project involves the widening of an approximately one-mile section of Warner Avenue between Main Street and Grand Avenue from its current four lanes to six lanes (see previous Figure 4-1a and Figure 4-1b, *Proposed Road Alignment*).

Unfortunately, to implement the road widening, acquisition of private property cannot be avoided. To limit the number of properties affected by the road widening, the project was reduced from the standard major arterial 120-foot-wide right-of-way (ROW) to a modified 110-foot-wide ROW (includes a short 106-foot-wide section between Standard Avenue and the Union Pacific Railroad [UPRR] railroad tracks). Despite the reduced ROW width, the proposed project would still displace 3 commercial businesses, and 42 residential units, including 21 owner-occupied single-family units, 8 tenant-occupied single-family units, and 13 multifamily units. Approximately 183 residents would be displaced.²

Chapter 4, *Project Description*, provides Figures 4-1a and 4-1b to demonstrate how the proposed improvements would require City acquisition of 34 full properties and a portion of 22 properties.³ A property-specific relocation plan would be prepared, and all displaced persons would be contacted by a relocation agent. The agent is responsible for ensuring that displaced persons receive full relocation benefits, including advisory assistance, and that all activities are conducted in accordance with federal and state regulations. A more complete description of the process is provided in Section 5-9, *Population and Housing*.

Road construction would follow acquisition of the required properties.

Physical Impact

The proposed project is the widening of an existing street within the community. Warner Avenue already forms the central east–west spine of this community. It is an existing roadway, currently planned as a six-lane divided arterial by the City and the Orange County Master Plan of Arterial Highways; no zoning change or other land use designation changes would result from the proposed project.

As proposed, the majority of the full property acquisition would occur along the north side of Warner Avenue from Main Street to Standard Avenue, where the centerline would jog slightly south. The property acquisition between the UPRR and Grand Avenue would be partial only. The City would acquire the necessary parcels and assist in the relocation of impacted residents and businesses. Acquired houses, businesses, walls and fences, and landscaping on acquired parcels would be demolished. Structure

² Based on the 2010 U.S. Census average household size of 4.35 for owner-occupied units the in the City of Santa Ana. See Appendix K.

³ Based on Draft Relocation Impact Statement, October 2013 (see Appendix K of this EIR).

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demolition would occur as properties are acquired to avoid vacant buildings that could attract vandalism or vagrants.

The proposed full and partial take of properties would impact homeowners and businesses who will be displaced, but would not physically divide the community of Delhi or the local neighborhoods on the north and south sides of Warner Avenue. No roadways, walls, ditches, or any other physical barriers would be constructed to restrict access and separate one part of the community from another. No major infrastructure modification would directly or indirectly divide the community. The community's residential core, centered around the elementary school, Our Lady of Guadalupe Church, and the Delhi Community Center, would remain intact.

Access to all residences, businesses, and other uses within the greater area near the proposed project would be maintained throughout construction; therefore, access would not be significantly impacted by project-related activities. Although the proposed project would not result in any road closures, some roads may be limited to one-way traffic at times to allow for the transport of materials to and from the project site and for the installation of utilities. However, one-way traffic control would be temporary and short-term and is not anticipated to create any new barriers or other divisions between uses or the greater community. Restricted access during construction would be temporary and would not permanently divide the community.

Social Impact

There will be a social impact to the established community of Delhi as a result of the proposed full and partial take of properties. Homeowners and businesses will be displaced, neighbors will move away, and the neighborhood's overall social fabric will change as result. However, the focus of analysis under CEQA is on the physical changes; economic or social effects of a project are not treated as significant effects on the environment.



Public Benefit

The project-related improvements for pedestrians and bicyclists include bike lanes and wider sidewalks and would enhance the overall connectivity of the community by providing improved safety and accessibility. To improve traffic flow and reduce the potential for accidents, left turn access would be restricted at most of the unsignalized intersections. Access to and from several unsignalized intersections along Warner Avenue would be restricted to right-turn-in/right-turn-out only. Driveway access along this segment of Warner Avenue would also be restricted to right-in/right-out only. Main Street, Maple Street, Halladay Street (south side), Standard Avenue, and Grand Avenue would remain accessible in both directions. All sidewalks, curb ramps, and driveways are designed to comply with the most current Americans with Disabilities Act (ADA) requirements.

The Warner Avenue Widening from Main Street to Grand Avenue project would include 5-foot-wide Class II bicycle lanes on each side of the street. The cul-de-sac at Rousselle Street would be restored with the minimum required radius of 38 feet, and the Class I Bike Path east of Rousselle Street would be reconstructed in place, with the exception of the pedestrian/bike crossing signal, which would be removed. The bike path would be realigned to the intersection of Maple Street, and a new signal and crosswalks would be installed.

The raised median and the expanded ROW would provide a significant opportunity to aesthetically upgrade the Warner Avenue corridor as part of the project. These upgrades would include the use of a landscape theme for both the center median and parkway area. A detailed urban design concept would be prepared and approved by the City prior to final design.

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As shown, while some residences and businesses will be displaced, the core of the Delhi community would remain intact. The proposed project would not physically divide an established community. As a result, impacts related to physically dividing a community would be less than significant.

5.7.4 Cumulative Impacts

Implementation of the proposed project is consistent with the City's General Plan and the County's Master Plan of Arterial Highways. The proposed project would not individually or cumulatively divide an established community. No significant cumulative land use impact is anticipated.

5.7.5 Existing Regulations and Standard Conditions

No land use regulations or standard conditions are applicable.

5.7.6 Level of Significance Before Mitigation

Impacts would be less than significant.

5.7.7 Mitigation Measures

No mitigation measures are required.

5.7.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.8 NOISE

This section discusses the fundamentals of sound; examines federal, state, and local noise guidelines, policies, and standards; reviews noise levels at existing receptor locations; and evaluates potential noise impacts associated with the Warner Avenue Widening from Main Street to Grand Avenue project. Noise calculations on which this analysis is based are included in Appendix J, *Noise Monitoring and Modeling Data*.

5.8.1 Environmental Setting

Terminology and Noise Descriptors

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}).** The mean of the noise level averaged over the measurement period, regarded as an average level.
- **Day-Night Level (L_{dn}).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the levels occurring during the period from 7:00 PM to 10:00 PM and 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered equivalent and are treated as such in this assessment.

Characteristics of Sound

When an object vibrates, it radiates part of its energy as acoustical pressure in the form of a sound wave. Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate the



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human, frequency-dependent response, the A-weighted filter system is used to adjust measured sound levels. The normal range of human hearing extends from approximately 0 dBA to 140 dBA.

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, represented by points on a sharply rising curve. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 5.8-1, *Change in Sound Pressure Level, dB*, presents the subjective effect of changes in sound pressure levels.

Change in Apparent Loudness	
± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies and Hansen 1988

Sound is generated from a source and decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. This phenomenon is known as spreading loss.

When sound is measured for distinct time intervals, the statistical distribution of the overall sound level during that period can be obtained. The energy-equivalent sound level (L_{eq}) is the most common parameter associated with such measurements. The L_{eq} metric is a single-number noise descriptor of average sound level over a given period of time. For example, L_{50} is the noise level that is exceeded 50 percent of the time: half the time the noise exceeds this level and half the time it is less than this level. This is also the level that is exceeded 30 minutes in an hour. Similarly, the L_{02} , L_{08} , and L_{25} values are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour. Other values typically noted during a noise survey are the L_{min} and L_{max} . These values are the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that, for planning purposes, an artificial dB increment be added to quiet-time noise levels in the CNEL/ L_{dn} .

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA would result in permanent cell damage. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Table 5-8-2 shows *Typical Noise Levels from Noise Sources*.

**Table 5.8-2
Typical Noise Levels**

<i>Common Outdoor Activities</i>	<i>Noise Level (dBA)</i>	<i>Common Indoor Activities</i>
	110	Rock Band
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation. Technical Noise Supplement, 2009



Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion’s amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities such as railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is the velocity and the rate of change of the speed is the acceleration. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During project construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure. This type of vibration is best measured in velocity and acceleration.

The three main wave types of concern in the propagation of groundborne vibrations are surface or Rayleigh waves, compression or P-waves, and shear or S-waves.

- Surface or Rayleigh waves travel along the ground surface. They carry most of their energy along an expanding cylindrical wave front, similar to the ripples produced by throwing a rock into

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a lake. The particle motion is more or less perpendicular to the direction of propagation (known as retrograde elliptical).

- Compression or P-waves are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal, in a push-pull motion. P-waves are analogous to airborne sound waves.
- Shear or S-waves are also body waves, carrying their energy along an expanding spherical wave front. Unlike P-waves, however, the particle motion is transverse, or perpendicular to the direction of propagation.

The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is the maximum instantaneous peak of the vibration signal and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). Often, vibration is presented and discussed in dB units in order to compress the range of numbers required to describe the vibration. In this study, all PPV and RMS velocity levels are in in/sec and all vibration levels are in dB relative to one microinch per second (abbreviated as VdB). The threshold of perception is approximately 65 VdB. Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Even the more persistent Rayleigh waves decrease relatively quickly as they move away from the source of the vibration. Manmade vibration problems are, therefore, usually confined to short distances (500 feet or less) from the source.

Construction operations generally include a wide range of activities that can generate groundborne vibration. In general, blasting and demolition of structures generate the highest vibrations. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at up to 200 feet. Heavy trucks can also generate groundborne vibrations, which vary depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, differential settlement of pavement, etc., all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration of normal traffic on streets and freeways with smooth pavement conditions. Trains generate substantial quantities of vibration due to their engines, steel wheels, and heavy loads.

Regulatory Setting

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. The City of Santa Ana regulates noise through the City of Santa Ana Noise Element and the City of Santa Ana Municipal Code, Article VI, Noise Control. Potential noise impacts were evaluated based on the City of Santa Ana Noise Element, and Municipal Code. Because the City does not have standards to control vibration, vibration impacts are evaluated according to Federal Transit Administration (FTA) criteria to determine whether a significant adverse vibration impact would result from the construction and operation of the proposed project.

City of Santa Ana Noise Element

The City of Santa Ana, through its General Plan, has adopted noise standards for sensitive uses, shown in Table 5.8-3.

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**Table 5.8-3
City of Santa Ana Noise Element Standards**

Category	Land Use Category	Noise Level (dBA CNEL)	
		Interior ¹	Exterior ²
Residential	Single-family, duplex, multi-family	45 ³	65
Institutional	Hospital, school classroom/playgrounds	45	65
	Church, library	45	65
Open Space	Parks	-	65

Source: City of Santa Ana General Plan Noise Element.

¹ Interior areas (include but are not limited to: bedrooms, bathrooms, kitchens, living rooms, dining rooms, closets, corridors/hallways, private offices, and conference rooms).

² Exterior areas shall mean: private yards of single family homes, park picnic areas, school playgrounds, common areas, private open space, such as atriums on balconies, shall be excluded from exterior areas provided sufficient common area is included within the project.

³ Interior noise level requirements contemplate a closed window condition. Mechanical ventilation system or other means of natural ventilation shall be provided per Chapter 12, Section 1305 of the Uniform Building Code.

City of Santa Ana Stationary Noise Standard – Noise Nuisance

Pursuant to the municipal code, the city restricts noise levels generated at a property from exceeding certain noise levels for extended periods of time. The City applies the noise control ordinance standards (summarized in Table 5.8-4) to nontransportation fans, blowers, pumps, turbines, saws, engines, and other like machinery.



**Table 5.8-4
City of Santa Ana Exterior Noise Standards**

Receptor/Land Use	Time of Day	Maximum Permissible Noise Levels (dBA) ^{1,2}				
		L ₅₀	L ₂₅	L ₈	L ₂	L _{max}
Residential Properties	10 PM to 7 AM	50	55	60	65	70
	7 AM to 10 PM	55	60	65	70	75

Source: Santa Ana, City of, Municipal Code, Article VI, Noise Control, Section 18-312.

¹ In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, noise levels shall be reduced by 5 dBA.

² In the event the ambient noise level exceeds the maximum permissible noise levels, the ambient noise level shall be increased to reflect the maximum ambient noise level.

The City of Santa Ana exempts noise associated with construction, repair, remodeling, or grading of any real property from the noise limitations of the Municipal Code, provided that construction activities do not take place between the hours of 8:00 PM and 7:00 AM on weekdays, including Saturdays, or any time on Sundays or federal holidays.

In compliance with the City Standard Specifications and Special Provisions the contractor's activities will be confined to the following hours:

- From 7:00 a.m. to 5:00 p.m., Monday through Friday, within work areas having either no lane closures or having continuous lane closures, i.e. 24-hour closures lasting more than one day.

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- From 9:00 a.m. to 3:00 p.m., Monday through Friday, for work requiring temporary lane closures, i.e. those having less than a 24-hour duration, and for work at major intersections. As an alternative, construction at major intersections may be permitted at night or on weekends.

Additionally, the noise level from the Contractor's operations shall not exceed 95 dBA at a distance of 50 feet. This requirement in no way relieves the contractor from responsibility for complying with the City of Santa Ana Noise Ordinance. Based on the City's Noise Ordinance, the maximum noise level at the adjacent property line shall not exceed 55 dBA at any residential dwelling between 7:00 AM and 10:00 PM on weekdays, including Saturday.

Federal Transit Administration Vibration Criteria

Vibration Annoyance

Groundborne noise is the vibration of floors and walls that may cause rattling of items such as windows or dishes on shelves, or a rumbling noise. The rumbling is created by the motion of the room surfaces, which act like a giant loudspeaker. The FTA provides criteria for acceptable levels of groundborne vibration based on the relative perception of a vibration event for vibration-sensitive land uses (see Table 5.8-5).

**Table 5.8-5
Groundborne Vibration Criteria – Human Annoyance**

<i>Land Use Category</i>	<i>Max L_v (VdB)¹</i>	<i>Description</i>
Workshop	90	Distinctly felt vibration. Appropriate to workshops and nonsensitive areas
Office	84	Felt vibration. Appropriate to offices and nonsensitive areas.
Residential – Daytime	78	Barely felt vibration. Adequate for computer equipment.
Residential – Nighttime	72	Vibration not felt, but groundborne noise may be audible inside quiet rooms.

Source: FTA 2006

¹ As measured in 1/3-octave bands of frequency over the frequency ranges of 8 to 80 Hz.

Vibration-Related Structural Damage

The level at which groundborne vibration is strong enough to cause structural damage has not been determined conclusively. The most conservative estimates are reflected in the FTA standards, shown in Table 5.8-6.

**Table 5.8-6
Groundborne Vibration Criteria – Structural Damage**

<i>Building Category</i>	<i>PPV (in/sec)</i>	<i>VdB</i>
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Nonengineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA 2006

RMS velocity calculated from vibration level (VdB) using the reference of one microinch/second.

Vibration-related problems generally occur due to resonances in the structural components of a building. The maximum vibration amplitudes of the floors and walls of a building will often be at the resonance frequencies of various components of the building. That is, structures amplify groundborne vibration. Resonant response is frequency dependent, and 1/3-octave band charts are best for describing vibration behavior. Wood-frame buildings, such as typical residential structures, are more easily excited by ground vibration than heavier buildings. According to Caltrans’s *Transportation Related Earthborne Vibration* (2002), extreme care must be taken when sustained pile driving occurs within 25 feet of any building; the threshold at which there is a risk of architectural damage to normal houses with plastered walls and ceilings is 0.2 in/sec.

Existing Noise Environment

The major source of noise in the study area is traffic on Warner Avenue. Warner Avenue is a 4-lane roadway with posted speed limits of 40 to 45 miles per hour. PlaceWorks conducted field monitoring on May 11, 2010 at four separate locations along Warner Avenue for a period of 15 minutes each. Noise monitoring locations were selected based on sensitive land uses in areas currently experiencing high levels of ambient noise and in areas that would experience the greatest change in noise levels due to planned development. The noise monitoring locations are shown in Figure 5.8-1, *Noise Monitoring Locations*. The results of the noise monitoring are presented in Table 5.8-7, *Existing Noise Levels*, and described below.

**Table 5.8-7
Existing Noise Levels**

<i>Noise Monitoring Location</i>	<i>Noise Level (dBA L_{eq})</i>
Monitoring Site 1	69.5
Monitoring Site 2	71.1
Monitoring Site 3	72.8
Monitoring Site 4	69.9



Monitoring Site 1. Sound level meter (SLM) 1 was placed on the northwest corner of the Hathaway Street/Warner Avenue intersection approximately 45 feet from the centerline of Warner Avenue. The noise measurement started at 9:00 AM and lasted for 17 minutes. The primary noise sources were the vehicles traveling along Warner Avenue. Secondary noise came from traffic along Grand Avenue. Other noise sources were from the general machinery operation from the various light industrial uses in the area.

Monitoring Site 2. SLM 1 was placed on the southwest corner of the Evergreen Street/Warner Avenue intersection approximately 35 feet from centerline of Warner Avenue. The noise measurement started at 8:15 AM and lasted for 18 minutes. The primary noise sources were the vehicles traveling along Warner Avenue.

Monitoring Site 3. SLM 1 was placed on the south side of Warner Avenue between Kilson Drive and Hickory Street approximately 40 feet from centerline of Warner Avenue. The noise measurement started at 7:38 AM and lasted for 15 minutes. The primary noise sources were the vehicles traveling along Warner Avenue.

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Monitoring Site 4. SLM 1 was placed on the northwest corner of the Cypress Avenue/Warner Avenue intersection approximately 35 feet from centerline of Warner Avenue. The noise measurement started at 6:57 AM and lasted for 20 minutes. The primary noise sources were the vehicles traveling along Warner Avenue. Other sources of noise were traffic on Main Street and vehicles on Cypress Avenue.

Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration. These uses include residential, school, and open space/recreation areas where quiet environments are necessary for enjoyment, public health, and safety. Commercial and industrial uses are not considered noise- and vibration-sensitive uses. Noise-sensitive land uses along Warner Avenue include low-density single family homes, multifamily units, recreational land uses at Delhi Park, and outdoor uses and classrooms at the James Monroe Elementary School.

To evaluate the effect of the existing sound walls along Warner Avenue and to assess the effect of the removal of some of the first row of homes along Warner Avenue, a site visit was performed to identify existing sound wall locations and heights at first and second row of homes. Most homes do not have sound walls along Warner Avenue, but the sound walls identified along Warner Avenue at the first and second row of homes ranged from 4 to 6 feet high, and are identified in Figure 5.8-2.

5.8.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in:

- | | |
|-----|--|
| N-1 | Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies. |
| N-2 | Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. |
| N-3 | A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. |
| N-4 | A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. |
| N-5 | For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public-use airport, exposure of people residing or working in the project area to excessive noise levels. |
| N-6 | For a project within the vicinity of a private airstrip, exposure of people residing or working the project area to excessive noise levels. |

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold N-5
- Threshold N-6

These impacts will not be addressed in the following analysis.

Noise Monitoring Locations



--- General Project Area ① Noise Monitoring Locations



Basemap Source: Google Earth Pro 2012

Warner Avenue Widening from Main Street to Grand Avenue Draft EIR

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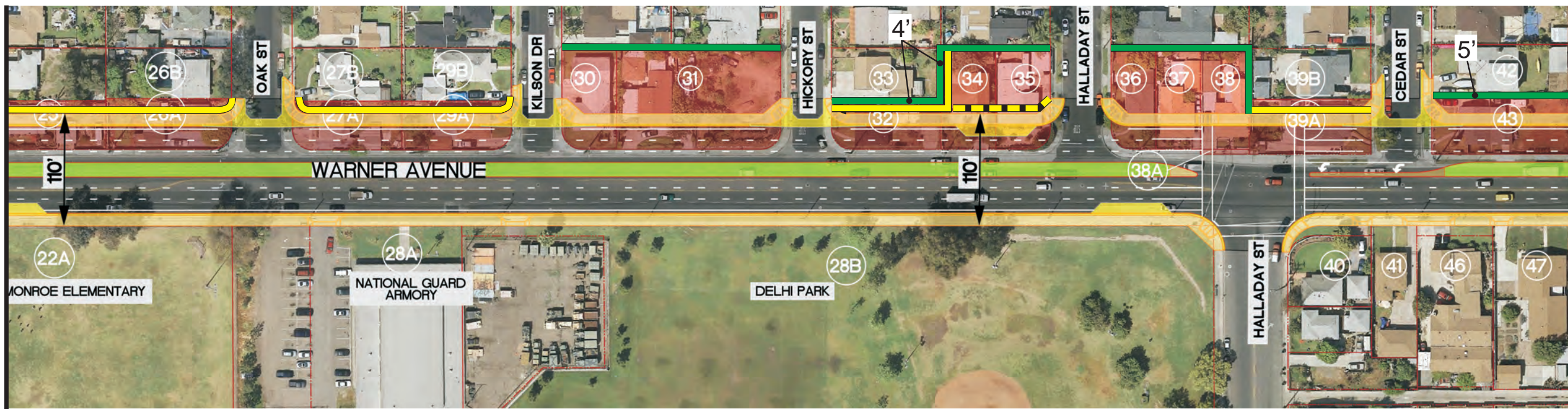
NOISE

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Barrier Locations to Mitigate Noise Impacts



See Matchline Below



See Matchline Above

No Significant Noise Impact East of Cedar Street

LEGEND

- New Barrier Locations (6 feet high)
- Existing Barrier Locations (6 feet high except where noted)
- Alternative New Barrier Location (6 feet high)

Existing Barrier Locations (6 feet high except where noted)



Basemap Source: City of Santa Ana 2013

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The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

5.8.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.8-1 LONG-TERM OPERATIONS DUE TO EXPANSION OF WARNER AVENUE FROM FOUR TO SIX LANES WOULD EXPOSE NOISE-SENSITIVE LAND USES TO AMBIENT NOISE LEVELS THAT EXCEED THE CITY'S NOISE COMPATIBILITY CRITERIA. [THRESHOLDS N-1 AND N-3]

Impact Analysis: Widening of Warner Avenue from four to six lanes would require demolition of the first row of structures along the north side of Warner Avenue, thereby exposing the second row receptors along Warner Avenue to roadway noise. In addition, expansion of Warner Avenue would change the lane alignments, resulting in locations where travel lanes would be closer to the nearest buildings. The combination of these two impacts could substantially increase ambient noise levels at the noise-sensitive land uses along Warner Avenue.

The City applies the state's Community Noise and Land Use Compatibility standards, summarized in Table 5.8-3, for assessing the compatibility of development with existing noise sources, such as roadway traffic. The City of Santa Ana exterior noise standard for residential uses, school playgrounds, and parks is 65 dBA CNEL. The interior noise standard for residential uses is 45 dBA CNEL for habitable rooms. Commercial and industrial areas are not considered noise sensitive and have much higher tolerances for exterior noise levels. For the purpose of this analysis, the project would cause a significant impact if the noise level at a sensitive receptor would exceed 65 dBA CNEL and if the increase over existing conditions would be greater than 1.0 dBA. The increase of 1 dBA corresponds to the level that is discernible to a person very sensitive to noise increases.



Exterior Noise Levels

Preliminary noise modeling was performed to determine exterior noise levels for existing and future conditions at private outdoor areas (see Appendix G). The Federal Highway Administration's (FHWA) Traffic Noise Model (TNM 2.5) was utilized with traffic volume parameters obtained from the traffic impact study (IBI Group 2013). The model outputs are included in Appendix J.

The traffic noise model for existing conditions included the sound walls currently located along Warner Avenue, existing structures (that would be acquired and demolished as part of the project), and the existing roadway alignment, according to the projects plans prepared for the project and included in Figures 4.1-a and 4.1-b. Selected receptors at the first and second rows of homes facing Warner Avenue were modeled to evaluate exterior noise, as shown in Appendix J. The noise model was calibrated using the results of the noise level measurements summarized in Table 5.8-7. Traffic noise was modeled for existing and long-range 2035 conditions, without and with the project. The 2035 conditions were evaluated to assess the long-range noise conditions at the City's General Plan Buildout, consistent with the traffic impact study prepared for the project. The modeled results for existing, 2035 without project, and 2035 with project conditions are presented in Table 5.8-8. The future 2035 without and with project correspond to the existing and proposed roadway alignment, with respective traffic conditions at opening year 2035, as shown in the Traffic section on Table 5.10-9, *Arterial Segment LOS (Year 2035)*.

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**Table 5.8-8
Existing and 2035 Modeled Noise Levels**

Receiver	NOISE LEVELS (dBA CNEL)			Project-Related Increase ¹	Increase Over Existing ²	Significant Impact ³
	Existing (4 lanes)	2035 No Project (4 lanes)	2035 With Project (6 lanes)			
2241 Cypress Av.	61.9	62.1	65.0	2.9	3.1	Yes
2239 Cypress Av.	60.3	60.6	60.9	0.3	0.6	No
2238 Orange Av.	60.8	61.1	61.4	0.3	0.6	No
2242 Orange Av.	61.8	62.0	65.4	3.4	3.6	Yes
2241 Orange Av.	62.8	63.1	67.8	4.7	5.0	Yes
2219 Orange Av.	61.2	61.5	63.2	1.7	2.0	No
2242 Maple St.	61.9	62.1	65.7	3.6	3.8	Yes
2243 Maple St.	62.6	62.8	67.4	4.6	4.8	Yes
2243 Roussele St.	64.0	64.3	67.8	3.5	3.8	Yes
2242 Oak St.	64.2	64.4	67.8	3.4	3.6	Yes
2241 Oak St.	63.0	62.6	66.0	3.4	3.0	Yes
2242 Kilson St.	63.1	62.6	66.0	3.4	2.9	Yes
2237 Kilson St.	56.0	56.3	57.4	1.1	1.4	No
2238 Hickory St.	56.8	57.0	57.4	0.4	0.6	No
2241 Hickory St.	63.0	63.2	67.9	4.7	4.9	Yes
2238 Halladay St.	56.8	57.0	58.2	1.2	1.4	No
2237 Halladay St.	55.1	55.7	57.7	2.0	2.6	No
2242 Cedar St.	62.0	62.8	68.7	5.9	6.7	Yes
2243 Cedar St.	58.3	59.1	62.5	3.4	4.2	No
2242 Evergreen St.	57.6	58.2	62.7	4.5	5.1	No
2243 Evergreen St.	57.1	58.3	62.9	4.6	5.8	No
2242 Standard Av.	58.1	59.3	63.0	3.7	4.9	No
302 Warner Av.	70.5	70.6	69.0	-1.6	-1.5	No
230 Warner Av.	70.8	71.0	70.1	-0.9	-0.7	No
2305 Maple St.	65.8	66.0	64.6	-1.4	-1.2	No
James Monroe Ele. School ⁴	56.4	56.7	54.6	-2.1	-1.8	No
Delhi Park	65.5	65.9	64.8	-1.1	-0.7	No
2305 Halladay St.	67.5	68.5	67.7	-0.8	0.2	No
1002 Warner Av.	69.8	71.0	70.0	-1.0	0.2	No
1016 Warner Av.	70.3	71.5	70.4	-1.1	0.1	No
1106 Warner Av.	72.6	73.9	72.3	-1.6	-0.3	No
2301 Warner Av.	64.1	65.4	64.4	-1.0	0.3	No

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**Table 5.8-8
Existing and 2035 Modeled Noise Levels**

Receiver	NOISE LEVELS (dBA CNEL)			Project-Related Increase ¹	Increase Over Existing ²	Significant Impact ³
	Existing (4 lanes)	2035 No Project (4 lanes)	2035 With Project (6 lanes)			
2301 Evergreen St.	57.2	58.2	58.8	0.6	1.6	No
2238 Cypress St.	57.1	57.4	60.5	3.1	3.4	No

¹ Project increase is the difference between 2035 With Project minus 2035 No Project.

² Corresponds to the increase over existing conditions under 2035 With Project Conditions.

³ A significant noise impact would occur where the noise increase at a sensitive receptor is greater than 1.0 dBA and the resulting noise level (2035 With Project) is greater than 65 dBA CNEL.

⁴ Represents the school's outdoor fields and the nearest classrooms facing Warner Avenue.

**Table 5.8-9
Construction Equipment Vibration Levels (VdB)**

Equipment	Within 25 Feet	Within 50 Feet	Within 75 Feet	Within 100 Feet	Within 175 Feet
Vibratory Roller	94	88	84	82	77
Hoe Ram	87	81	77	75	70
Large Construction Equipment	87	81	77	75	70
Small Construction Equipment	58	52	48	46	41
Jackhammer	79	73	69	67	62
Loaded Trucks	86	80	76	74	69
Threshold (VdB) ¹	78	78	78	78	78

Source: Federal Transit Administration 2006.

¹ Threshold for vibration annoyance for residential uses during the daytime.



Based on the model results, the noise-sensitive receptors along Warner Avenue are currently exposed to exterior noise levels ranging from 55.1 to 72.6 dBA CNEL. Several uses are currently exposed to ambient noise levels above the City's 65 dBA CNEL exterior noise standard.

The ambient noise for future 2035 conditions with the project were modeled utilizing the project's plans with the proposed roadway alignment, assuming the removal of several homes along Warner Avenue, as shown on Figures 4-1a and 4-1b, and assuming the future traffic volumes on Warner Avenue. This analysis assumes that during property acquisition and demolition, the existing masonry walls along the boundary of the lots that are not acquired would remain in place (see Figure 5.8-2). Under 2035 conditions with the project, the noise-sensitive receptors along Warner Avenue would be exposed to ambient noise levels ranging from 54.6 to 72.3 dBA CNEL. As shown on Table 5.8-8, the noise levels at some receptors are expected to increase by up to 5.9 dBA. The major increases would occur at the residential units along the north side of Warner Avenue due to the removal of some structures that would no longer shield noise from Warner Avenue, and due to the road realignment that would bring traffic closer to some buildings. Most significant noise impacts would occur at homes along the north side of Warner Avenue west of Cedar Street, where the travel lanes would be relocated to the north and several homes would be removed.

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Some receptors would experience a reduction in traffic noise of up to 2.1 dBA. This noise reduction would occur at homes on the south side on Warner Avenue between Orange Avenue and Maple Street, between Halladay Street and Evergreen Street, and at Delhi Park and the James Monroe Elementary School. The decrease in traffic noise would occur at locations where the distance to travel lanes from existing buildings would be increased.

A significant noise impact would occur where the traffic noise increase at a sensitive receptor is greater than 1.0 dBA and the resulting noise level (2035 With Project) is greater than 65 dBA CNEL. Figure 5.8-2 shows the locations of the existing 4 to 6-foot high masonry walls along areas where properties may be exposed to an increase in noise. Table 5.8-7 identifies significant noise impacts (i.e., exterior noise levels greater than 65 dBA CNEL and an increase over existing conditions greater than 1.0 dBA) at the following receptors:

- 2241 Cypress Avenue
- 2242 Orange Avenue
- 2241 Orange Avenue
- 2242 Maple Street
- 2243 Maple Street
- 2243 Rousselle Street
- 2242 Oak Street
- 2241 Oak Street
- 2242 Kilson Street
- 2241 Hickory Street
- 2242 Cedar Street

Interior Noise Levels

The interior noise level is the difference between the predicted exterior noise level at the building façade and the noise reduction of the structure. Exterior noise levels were used to evaluate potential impacts at interior areas. New construction will generally produce a "windows closed" noise reduction ranging from 20 dBA to 30 dBA. For the purpose of this analysis, it is estimated that the existing homes provide a noise reduction of 20 dBA. As shown on Table 5.8-8, the 11 homes listed above would experience a noise level increase over 1 dBA due to the project and would be exposed to exterior noise levels over 65 dBA, which would have the potential to cause interior noise levels to be above 45 dBA CNEL. Homes exposed to exterior noise levels below 65 dBA CNEL would meet the 45 dBA CNEL interior noise standard. Homes exposed to exterior noise levels above 65 dBA CNEL ($65-20=45$) would result in interior noise levels above 45 dBA CNEL. Without mitigation, this would be a significant impact.

IMPACT 5.8-2: CONSTRUCTION ACTIVITIES WOULD EXPOSE SENSITIVE USES TO GROUNDBORNE VIBRATION LEVELS THAT WOULD BE PERCEPTIBLE AND POTENTIALLY CAUSE ARCHITECTURAL DAMAGE AT HOMES. [THRESHOLD N-2]

Impact Analysis: Construction activities can generate varying degrees of ground vibration depending on the procedures and equipment. Construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings near the construction site varies depending on soil type, ground strata, and receptor building construction. The results from vibration can range from no perceptible effects at the lowest levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels. Ground vibration from construction activities rarely reaches levels that can damage structures, but it can achieve the audible and perceptible ranges in buildings close to a construction site. Groundborne vibration would be

generated by the proposed project during construction activities, primarily during the demolition, grading, and foundation phases. Unless there are extremely large generators of vibration, such as pile drivers, or receptors in close proximity to construction equipment, vibration is generally only perceptible at structures when vibration rattles windows, picture frames, and other objects.

Assumed Construction Operation

The analysis below assumes that the implementation of the project would occur in ¼-mile sections. As the project along Warner Avenue is approximately one mile in length, there are four ¼-mile sections. Table 4-2, *Construction Phasing and Equipment*, presents the assumed construction schedule within each of the ¼-mile sections.

Vibration Annoyance

Table 5.8-9 lists representative types of construction equipment that are sources of vibration, as well as estimated vibration levels that would be experienced at the nearest structures from construction of the proposed project. RMS vibration velocities from construction equipment operations are based on FTA's Transit Noise and Vibration Impact Assessment. Levels of vibration produced by construction equipment are evaluated against the vibration annoyance threshold of 78 VdB for residential structures during the daytime (FTA 2006). For the purpose of this analysis, this threshold is also used to evaluate impacts at schools. Commercial uses are not considered vibration sensitive.

Right-of-Way Clearance

Right-of-way clearance would involve the demolition of the homes and removal/relocation of overhead electrical (OHE). Removal and relocation of OHE equipment would not utilize equipment that generates substantial vibration levels. Demolition of the residences would require the use of two backhoes, one front-end loader, and a haul truck (see Table 4-2). Vibrations from the hoe ram, large construction equipment, and loaded trucks best represent vibration levels that would be generated by these pieces of construction equipment. As shown in Table 5.8-9, homes within 75 feet of demolition operations would be exposed to vibration levels from operation of a hoe ram and loaded truck that would exceed the vibration annoyance threshold of 78 VdB.

Based on the vibration levels that would be generated by the construction equipment used, vibration levels related to demolition activities would not exceed the vibration annoyance threshold at a distance of 75 feet from each of the vibration sensitive-receptor locations. Because the primary right-of-way area to be cleared is a densely developed residential area, there are four to five lots within 75 feet of each offsite vibration-sensitive structure. According to Table 4-2, *Construction Phasing and Equipment*, right-of-way clearance and structure demolition activities at each ¼-mile segment would occur for a period of 3 months. However, vibration impacts at nearby sensitive uses (i.e., those properties abutting the project site) would be for a much shorter duration, since demolition of each lot would take a few days and construction would move along the roadway.

Road Widening

Road widening activity would consist of (1) removal of asphalt, curb and gutter, (2) excavation of the fill/sub-base material, (3) placement of road foundation, and (4) asphalt paving. As shown in Table 5.8-9, removal of asphalt, curb and gutter and excavation of fill/subsoil would utilize large construction equipment such as excavator, hoe rams, and haul trucks. As described above, vibration levels from demolition and excavation operations would exceed the vibration annoyance level at distances less than



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75 feet from a vibration-sensitive receptor location. A Road widening activity at each ¼-mile segment is estimated to take 18 working days.

The building of the foundation and asphalt paving phases would also require the use of rollers. Vibratory rollers may generate vibration levels above annoyance thresholds within 175 feet. These phases are anticipated to last approximately 27 working days.

Vibration Annoyance Summary

Because vibration levels dissipate rapidly with distance, the exposure time at each given receptor would be relatively short in duration. Potential vibration impacts at each given receptor would be less than thresholds when large construction equipment is operating farther than 75 feet away and when vibratory rollers would be operating farther than 175 feet away from a given receptor. Sensitive receptors in the study area would be exposed to vibration levels above thresholds sporadically and for short periods during the construction period. Vibration annoyance impacts during construction would be less than significant.

Vibration-Related Architectural Damage Assessment

In addition to vibration-induced annoyance, project-related construction vibration was evaluated for its potential to cause architectural damage in comparison to the FTA's structural damage criteria. According to guidelines from the FTA for assessing damage from vibration caused by construction equipment, the threshold at which there is a risk of architectural damage to normal houses with plastered walls and ceilings is PPV 0.2 in/sec (FTA 2006). Table 5.8-10 lists the estimated range in ground vibration levels that would be expected during construction at the closest building to construction equipment.

Table 5.8-10
Vibration Induced Architectural Damage

<i>Equipment</i>	<i>Vibration Level (PPV inch/sec)¹</i>
Vibratory Roller	0.210
Hoe Ram	0.089
Large Construction Equipment	0.089
Small Construction Equipment	0.003
Jackhammer	0.035
Loaded Trucks	0.076
Threshold (inch/sec)	0.2 inch/sec

Source: Federal Transit Administration 2006.

Bold=exceed threshold.

¹Vibration at a distance of 25 feet.

The right-of-way clearance, removal of asphalt, and excavation activities would not require the use of equipment that generates vibration levels above the 0.2 PPV in/sec threshold for architectural damage. At a distance of 25 feet, vibration levels generated by a vibratory roller would exceed the FTA threshold of 0.2 inch/sec and would have the potential to cause architectural damage at existing structures. Vibratory rollers would be used for foundation and pavement construction activities. Based on the design of the proposed road widening, it is not anticipated that a vibratory roller would operate within 25 feet of

the majority of the existing offsite receptor locations on the north side of Warner Avenue. However, a vibratory roller would operate within 25 feet of those residences on the south side of Warner Avenue. Based on the construction schedule, a residence could be exposed to vibration levels exceeding 0.2 inch per second. Without mitigation, this would be a significant impact.

IMPACT 5.8-3: CONSTRUCTION ACTIVITIES WOULD SUBSTANTIALLY ELEVATE NOISE LEVELS IN THE VICINITY OF NOISE-SENSITIVE LAND USES FOR AN EXTENDED DURATION. [THRESHOLD N-4]

Impact Analysis: Short-term noise would be associated with the site preparation, grading, and building construction of the proposed road widening. Two types of short-term noise impacts would occur during construction. The first type is from the transport of workers and movement of materials to and from the site. The second type is from site preparation, grading, and physical construction.

Construction-Related Vehicles

Construction Worker Vehicles and Material Delivery Trucks

The transport of workers and equipment to the construction site would incrementally increase noise levels along site access roadways. Even though there would be a relatively high single-event noise exposure potential with passing trucks, the expected number of workers and trucks is small relative to the background traffic. The amount of construction traffic is typically small (less than 100 trips per day) in relation to the total daily traffic volume on Warner Avenue, which is approximately 25,000 vehicles per day. In addition, truck trips would be spread throughout the workday. Therefore, these impacts are less than significant at noise receptors along the construction routes.

Soil Haul Trucks

Medium-size, 6-ton haul trucks would be used to haul soil and debris from the construction area. The project would generate as many as 412 soil haul truck trips per day during the 10-day grading period, 409 haul truck trips during a 5-day asphalt haul period, and less than 50 daily haul truck trips for the remainder of construction period. In relation to the existing daily traffic volume of approximately 25,000, the traffic increase related to haul trucks is nominal and would not substantially increase the ambient noise level at sensitive receptors in the study area.

In summary, truck trips associated with worker vehicles, material delivery trucks, and soil haul would not result in significant noise impacts for the noise-sensitive uses along the roadway during construction.

Onsite Construction Activities

Construction is performed in distinct steps, each with its own mix of equipment and, consequently, its own noise characteristics. Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. However, despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise to be categorized by work phase. Typically, the estimated construction noise levels are governed primarily by equipment that produces the highest noise levels. The FHWA Roadway Construction Noise Model (RCNM) was used to estimate future construction noise levels for the proposed project. The analysis below addresses offsite impacts from construction equipment noise.

Road-widening construction is anticipated to take place in quarter-mile sections; therefore, within the one-mile project length, there would be four quarter-mile sections. Each segment would have two



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phases. The first phase would be clearance of right-of-way, which would include demolition of the existing structures and building pads on the acquired parcels, and relocation of overhead power transmission lines and other utilities. The second phase would involve the actual widening of Warner Avenue. Construction noise generated by the project for each of the development phases shown in Table 5.8-11.

**Table 5.8-11
Roadway Construction Noise Levels (dBA Leq)**

Phase	Distance from Receptor (feet)					Phase duration ¹
	25	50	100	200	400	
Right-of-Way Clearance						
Demolition of Existing Structures	86	80	74	68	62	3 months
OHE Removal	82	76	70	64	58	9 months
Roadway Construction						
Demolition of AC/Curb/Gutter	87	81	75	69	63	3 days
Excavation/Removal of Fill/Subbase	86	80	74	68	62	6 days
Foundation Construction	84	78	72	66	60	9 days
Paving	84	78	72	66	60	18 days

Notes: Calculations performed with the FHWA RCNM.

Equipment usage per phase based on information provided by the City of Santa Ana.

¹ Detailed Construction phasing activities and durations are provided in Table 4-2, Construction Phasing and Equipment.

While the magnitude of the noise would, at times, be up to 86 dBA L_{eq} , it would fluctuate throughout the workday because equipment would not be in use at one location for an extended period of time. Noise levels diminish rapidly with distance from the construction site (approximately 6 dB per doubling of distance). For example, a noise level of 86 dBA 50 feet from the noise source would be 80 dBA at 100 feet from the source and reduced by another 6 dBA (to 74 dBA) at 200 feet from the source. As shown in the table above, each construction phase would generate noise levels ranging from 82 to 87 dBA L_{eq} at 25 feet, and as noise diminishes with distance, these levels at 400 feet away from a given receptor would range from 58 to 63 dBA L_{eq} . The noise levels presented in Table 5.8-11 represent the average noise levels (dBA L_{eq}) noise levels when the center of construction activity occurs at a certain distance (25, 50, 100, 200, 400 feet) from a given receptor.

Table 5.8-7, *Existing Noise Levels*, shows that the existing noise levels at receptors along Warner Avenue range from 69.5 to 72.8 dBA Leq. Construction activity that occurs approximately 100 to 200 feet from a given receptor would generate similar noise levels as existing traffic along Warner Avenue. For most of the construction duration, noise from heavy earthmoving equipment would be heard. As construction progresses down the road over the approximately 6,000-foot segment, the duration of exposure from a given receptor to the highest construction noise levels would be limited to a few days. Project-related noise would subside as construction activities moved farther along the road.

In compliance with the City Standard Specifications and Special Provisions the contractor's activities will be confined to the following hours:

- From 7:00 a.m. to 5:00 p.m., Monday through Friday, within work areas having either no lane closures or having continuous lane closures, i.e. 24-hour closures lasting more than one day.
- From 9:00 a.m. to 3:00 p.m., Monday through Friday, for work requiring temporary lane closures, i.e. those having less than a 24-hour duration, and for work at major intersections. As an alternative, construction at major intersections may be permitted at night or on weekends.

However, because the operation of heavy earthmoving equipment would have the potential to substantially elevate noise levels at nearby residential areas for an extended duration over several months, construction noise is considered significant.

5.8.4 Cumulative Impacts

Cumulative noise impacts occur when multiple sources of noise, though individually not substantial, combine and lead to excessive cumulative noise exposure at noise-sensitive uses.

Short-Term Construction Phase Activities

Cumulative construction noise impacts have the potential to occur when multiple construction projects in the same general area generate noise within the same time frame and contribute to the increases in the ambient noise environment. Currently there are several projects anticipated to be constructed in the City and some may be concurrent with the Warner Avenue Widening from Main Street to Grand Avenue project. However, according to the list of reasonable and foreseeable projects presented in Section 3.6, *Assumptions Regarding Cumulative Impacts*, none of these projects would be constructed in proximity to the homes that could be potentially affected by the Project along Warner Avenue. As no other project would have the potential to result in increased noise from project construction, impacts during project construction would not be cumulatively considerable.



Long-Term Operational Phase Activities

The project-related traffic circulation and associated traffic noise levels represents the project's cumulative contribution to increases in the ambient noise environment along roadway segments analyzed. Traffic noise produced by project-related vehicles would not change and would not contribute to any possible future noise increases in the area. In consideration of the preceding factors, the project's contribution to cumulative noise would be less than significant, and therefore, project impacts would not be cumulatively considerable.

5.8.5 Existing Regulations and Standard Conditions

- City of Santa Ana Municipal Code, Article VI, Noise Control.

5.8.6 Level of Significance Before Mitigation

Upon implementation of project design features, regulatory requirements, and standard conditions of approval, these impacts would be less than significant: 5.8-2 and 5.8-3.

Without mitigation, the following impacts would be **potentially significant**:

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- Impact 5.8-1 The proposed widening of Warner Avenue from four lanes to six lanes would expose noise-sensitive land uses along Warner Avenue to ambient noise levels that exceed the City of Santa Ana's noise compatibility criteria.
- Impact 5.8-2 The use of vibratory rollers would have the potential to cause vibration levels above thresholds for architectural damage at existing residential structures.
- Impact 5.8-3 The use of heavy construction equipment during project construction would have the potential to cause excessive noise levels for an extended duration at noise-sensitive uses in the vicinity of the project site

5.8.7 Mitigation Measures

Impact 5.8-1

Preliminary modeling was conducted to identify the feasibility for implementing mitigation measures and to estimate sound wall heights and locations where sound walls would be required. The sound wall locations were modeled at the right-of-way locations identified in Figures 4-1a and 4-1b. Table 5.8-12 below summarizes the results of the noise model and an estimate of the sound walls that could be required to reduce noise impacts to less than significant levels. As shown, with 6-foot-high sound walls, the exterior noise levels at affected homes would be less than the existing noise levels at each affected receptor. With the construction of the proposed sound walls, all potential noise impacts at habitable rooms (interior noise) would be reduced to less than significant levels.

**Table 5.8-12
Mitigated Exterior Noise Levels**

<i>Receiver</i>	<i>Noise Levels (dBA CNEL)</i>		
	<i>Existing</i>	<i>2035 With Project</i>	<i>Mitigated with 6 ft. high sound wall</i>
2241 Cypress Av.	61.9	65.0	60.9
2242 Orange Av.	61.8	65.4	61.8
2241 Orange Av.	62.8	67.8	61.6
2242 Maple St.	61.9	65.7	62.0
2243 Maple St.	62.6	67.4	62.1
2243 Rousselle St.	64.0	67.8	61.5
2242 Oak St.	64.2	67.8	64.0
2241 Oak St.	63.0	66.0	62.3
2242 Kilson St.	63.1	66.0	62.3
2241 Hickory St.	63.0	67.9	60.6
2242 Cedar St.	62.0	68.7	60.9

- N-1 Prior to final engineering plan approval, when detailed roadway alignment, landscape plans, and elevations are available, a final noise study shall be prepared to identify specific sound wall

locations along receptors that would be significantly impacted by the project. With current information significantly affected properties are listed in Table 5.8-12. Figure 5.8-2 shows the sound wall locations and heights that would reduce noise impacts to levels below significance. For aesthetic purposes, the City can use the alternative wall location shown on Figure 5.8-2; however, one of the two wall locations is required to provide sound attenuation to meet City of Santa Ana noise standards. Sound walls shall be solid from the ground to the top with no decorative cutouts and shall weigh at least 3.5 pounds per square foot of face area. The sound walls may be constructed using masonry block, 1/4-inch thick glass, or other transparent material with sufficient weight per square foot. The need, location, and height of sound walls/walls shall be determined based on the conclusions of the final acoustical report and the final pad elevations of the grading plan. All walls determined to be necessary for noise mitigation by the final acoustical report shall be incorporated into the final roadway construction plans.

Impact 5.8-2

- N-2 The use of vibratory rollers shall be prohibited within 30 feet of a residential structure. If soil compacting is required within 30 feet of a residential structure, static rollers shall be employed.

Impact 5.8-3

- N-3 Prior to the start of grading, the construction contractor shall provide evidence acceptable to the Public Works Director, or designee, that:
- a. All construction vehicles and equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers; mufflers shall be equivalent to or of greater noise reducing performance than manufacturer's standard.
 - b. Stationary equipment, such as generators, cranes, and air compressors, shall be located as far from adjacent residences and James Monroe Elementary School as feasible.
 - c. Equipment maintenance, vehicle parking, and material staging areas shall be located as far away from adjacent residences and James Monroe Elementary School as feasible.

The effectiveness of temporary walls during construction would be limited because all homes on the south side of Warner Avenue take access from Warner Avenue, and gaps and opening in the walls would greatly reduce attenuation. On the northside homes, the implementation of temporary walls would (1) have the potential to interfere with the construction work, (2) would be implemented only after the demolition of the first row of homes and removal of debris, (3) cause aesthetics impacts, and (4) cause noise impacts during removal. To reduce temporary construction noise, N-4 would require the construction of the recommended permanent walls described in N-1 as soon as practicable to reduce potential noise impacts at the second row of homes north of the project site for the remainder of the construction period.

- N-4 The recommended sound walls described in N-1 shall be constructed as soon as practicable to minimize temporary construction-related noise impacts during implementation of the project.



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5.8.8 Level of Significance After Mitigation

With implementation of Mitigation Measures N -1 and N-2, noise and vibration impacts related to Impacts 5.8-1 and 5.8-2 would be reduced to less than significant levels, and the project would not result in short-term or long-term noise and vibration impacts. However, implementation of N-3 and N-4 would not reduce noise levels during construction to levels below significance; this impact would remain significant and unavoidable.

5.9 POPULATION AND HOUSING

This section of the Draft Environmental Impact Report (Draft EIR) summarizes the existing and forecast population, employment, and housing in the City of Santa Ana and examines the potential for socioeconomic impacts of the proposed Warner Avenue Widening from Main Street to Grand Avenue project on the City, including changes in population, employment, and demand for housing, particularly housing cost/rent ranges defined as “affordable.” The analysis in this section is based, in part, on this source:

- *Draft Relocation Impact Report, Warner Avenue Widening Project*, Overland, Pacific & Cutler, Inc., October 2013.

A complete copy of this study is included as Appendix K to this Draft EIR.

5.9.1 Environmental Setting

Population

This section presents existing and forecast population estimates for the City of Santa Ana from various sources, including the most recent US Census, California Department of Finance, and Southern California Association of Governments.

US Census

City of Santa Ana

The population of the City of Santa Ana was 324,528 as counted in the 2010 US Census. As shown below in Table 5.9-1, the population of the City declined by 4 percent between the 2000 Census and 2010 Census.



**Table 5.9-1
US Census Population Data for City of Santa Ana**

	2000	2010	Difference 2000–2010	Percent Difference 2000–2010
Household	332,353	319,870	-12,483	-3.8%
Group Quarters	5,624	4,658	-966	-17.2%
Total	337,977	324,528	-13,449	-4.0%

Source: USCB 2010a; USCB 2000.

Census Tracts

For demographic information more focused on the project site than information for the City of Santa Ana, information from the four census tracts including the project site and used in the 2010 Census is provided in this section. The four census tracts are 740.03, 742, 743, and 744.03; together, the four census tracts span much of the southeast quarter of the City of Santa Ana; see Figure 5.9-1, *Census Tracts*. Zip codes were not chosen to provide demographic information for the region of Santa Ana surrounding the project site because the project site is in two Zip codes, 92705 and 92707; Zip code 92705 includes a large area of unincorporated Orange County north of the City of Tustin, and thus is not representative of the region of Santa Ana surrounding the site.

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US Census data for the four census tracts that include the project site are shown in Table 5.9-2. There is a total population of 22,667 within this area.

**Table 5.9-2
US Census Population Data for Project Area**

Census Tract (2010)	Population		
	Household	Group Quarters	Total
740.03	2,989	148	3,137
742	9,434	16	9,450
743	4,386	6	4,392
744.03	5,688	0	5,688
Total	22,497	170	22,667

Source: USCB 2010b.

California Department of Finance

The total population of the City of Santa Ana as of January 1, 2012 was 327,731 as estimated by the California Department of Finance (CDF 2012). The total household population of the City was estimated as 322,913. The difference of 4,818 persons is a result of group quarters population, such as persons in custody at the Orange County Jail.

Southern California Association of Governments

The Southern California Association of Governments (SCAG) forecasts population, households, and employment in its six-county region as part of developing regional transportation plans. SCAG population forecasts for Santa Ana are shown in Table 5.9-3.

**Table 5.9-3
Population Forecast for City of Santa Ana**

2008	2020	2035	Increase 2008-2035	Percent Increase 2008-2035
323,900	337,600	336,700	12,800	4.0%

Source: SCAG 2012

Housing

This section summarizes existing and forecast housing for the City of Santa Ana from available sources.

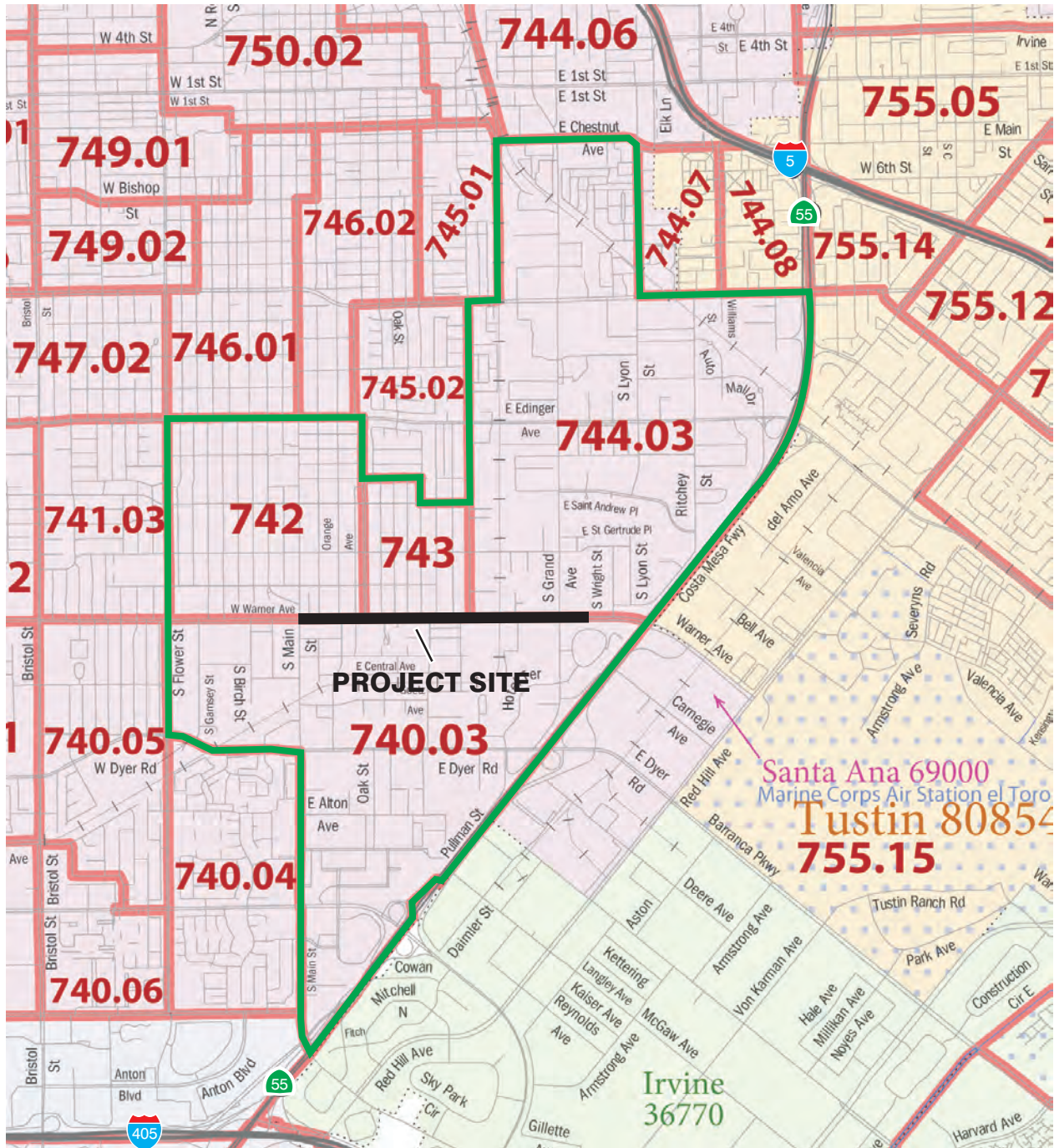
US Census

City of Santa Ana

There were 76,896 housing units in Santa Ana counted in the 2010 Census. The number of households was 73,174; 3,722 housing units, or 4.8 percent of the total, were vacant. Owner-occupied units comprised 47.5 percent of the occupied units in the City, with the remainder being renter-occupied. Based on these statistics, the average household size was 4.35 persons, which is slightly lower than the information from the California Department of Finance, discussed below.

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Census Tracts



- Project Site
- Census Tracts Adjoining Project Site



Source: US Census Bureau 2010

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POPULATION AND HOUSING

The Table 5.9-4 summarizes the number of households and average household size by type of housing unit within the census tracts that include Warner Avenue between Main Street and Grand Avenue.

**Table 5.9-4
Housing and Population in Census Tracts Including Project Site**

	<i>Census Tract</i>				<i>Total</i>
	<i>740.03</i>	<i>742</i>	<i>743</i>	<i>744.03</i>	
Single-Family Units	476	1550	773	375	3,174
Multi-Family Units	307	110	37	908	1,362
Total	783	1660	810	1283	4,536
Population	3,294	8,148	4,531	5,597	21,570
Average Household Size Single-Family	4.91	4.99	5.68	4.58	5.10
Average Household Size Multi-Family	2.54	3.55	3.68	4.27	3.81

Source: USCB 2011.

The types of housing units in the City, based on five-year (2007–2011) estimates by the US Census Bureau are:

- Detached single-family units: 35,467 (45.9 percent of total)
- Attached single-family units: 5,681 (7.4 percent of total)
- Multifamily units (2 or more units per structure): 31,876 (41.3 percent of total)
- Mobile homes and RVs: 4,238 (5.5 percent of total)

Table 5.9-5 lists the housing information from the 2010 Census for census tracts 740.03, 742, 743, and 744.03. With the exception of census tract 740.03, the vacancy rate is similar to the City's. The average household size is also similar between the City and these four tracts.

**Table 5.9-5
Housing in Census Tracts Including Project Site**

<i>Census Tract</i>	<i>Housing Units</i>			<i>Vacancy Rate, Percent</i>	<i>Average Household Size, Persons</i>
	<i>Occupied (Households)</i>	<i>Vacant</i>	<i>Total</i>		
740.03	783	211	994	21.2%	4.2
742	1,660	146	1,806	8.1%	4.9
743	810	24	834	2.9%	5.6
744.03	1,283	58	1,341	4.3%	4.4
Total	4,536	439	4,975	8.8%	4.7

Source: USCB 2011.



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California Department of Finance

The total number of housing units in the City was estimated as 76,944 as of January 1, 2012. The vacancy rate was estimated at 4.8 percent (CDF 2012). Estimates of numbers of unit types in the City, provided below, are similar to those from Census estimates:

- Detached single-family units: 35,466 (46.1 percent of total)
- Attached single-family units: 5,657 (7.4 percent of total)
- Multifamily units (2 or more units per structure): 31,773 (41.3 percent of total)
- Mobile homes and RVs: 4,048 (5.3 percent of total).

The average household size in the City of Santa Ana was 4.41 persons, which is slightly lower than the data provided by the 2010 Census for the four affected census tracts.

SCAG

The SCAG households forecast for the City of Santa Ana is shown in Table 5.9-6.

2008	2020	2035	Increase, 2008-2035	Percent Increase, 2008-2035
73,100	73,900	74,800	1,700	2.3%

Source: SCAG 2012.

Project Area Housing Characteristics

Most of the houses in the vicinity of the proposed project are in fair condition and contain between 1,200 and 1,500 square feet of living area. For housing affected by the proposed project, the average year built is around 1960. A field observation of the potentially affected residential properties determined that impacted units did not have unique physical characteristics related to their age or condition (See Appendix K).

Housing Vacancy

An adequate supply of housing is essential to maintaining adequate choices for residents, moderating housing prices, and encouraging the normal maintenance of properties. Low vacancy rates result in price and rent escalation, while excess vacancy rates result in price depreciation, rent declines, and deferred maintenance. Although market forces are beyond the control of any one city, maintaining an optimal balance of housing supply and demand is a desirable goal. Although different measures exist for defining the optimal balance of housing supply and demand, the building industry assumes that vacancy rates of 1.5 to 2.0 percent for ownership units and 5 to 6 percent for rental housing are optimal and offer a variety of choices for residents. The vacancy rates for the City from the 2010 Census are 1.9 percent for ownership properties and 4.9 percent for rental residences (USCB 2010).

Employment

Santa Ana Residents: Employment and Unemployment

Labor force, employment, and unemployment estimates of Santa Ana residents from the US Census Bureau (2010) and the California Employment Development Department (March 2012) are provided below in Table 5.9-7.

**Table 5.9-7
Employment and Unemployment Estimates: Santa Ana Residents**

	<i>Labor Force</i>	<i>Employment</i>	<i>Unemployment</i>	<i>Unemployment Rate, percent</i>
California Employment Development Department: March 2012	163,700	142,700	21,100	12.9%
US Census Bureau: 2010 One-Year Estimate	161,983	138,652	23,331	14.4%

Sources: EDD 2012; USCB 2012c.

Jobs in Santa Ana

Forecasts of the number of jobs in Santa Ana are provided by SCAG’s Regional Transportation Plan and are shown in Table 5.9-8. Between 2008 and 2035, SCAG predicts an employment reduction of 11.3 percent.



**Table 5.9-8
Employment Forecast for City of Santa Ana**

<i>2008</i>	<i>2020</i>	<i>2035</i>	<i>Increase, 2008–2035</i>	<i>Percent Increase, 2008–2035</i>
168,400	146,000	149,400	-19,000	-11.3%

Source: SCAG 2012

Regulatory Setting

Relocation Assistance and Real Property Acquisition Guidelines

Title 25, Division 1, Chapter 6 of the California Code of Regulations (Section 6040) contains the Relocation Assistance and Real Property Acquisition Guidelines (Guidelines). The Guidelines implement the California Relocation Act, found at Government Code section 7260 et seq.

The purpose of the Guidelines is to assist public entities in the development of regulations and procedures implementing the act. The Guidelines are designed to carry out the following policies of the act:

- (1) To ensure that uniform, fair and equitable treatment is afforded persons displaced from their homes, businesses or farms as a result of the actions of a public entity in order that such persons shall not suffer disproportionate injury as a result of action taken for the benefit of the public as a whole; and

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- (2) In the acquisition of real property by a public entity, to ensure consistent and fair treatment for owners of real property to be acquired, to encourage and expedite acquisition by agreement with owners of such property in order to avoid litigation and relieve congestion in courts, and to promote confidence in public land acquisition.

The Guidelines state that a public entity shall not participate in or undertake a project that will displace individuals from their homes unless comparable replacement dwellings will be available within a reasonable period of time prior to displacement. The Guidelines establish only minimum requirements for relocation assistance and payments. They shall not be construed to limit any other authority or obligation which a public entity may have to provide additional assistance and payments.

The act and the Guidelines are intended for the benefit of displaced persons, to ensure that such persons receive fair and equitable treatment and do not suffer disproportionate injuries as the result of programs designed for the benefit of the public as a whole.

5.9.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- PH-1 Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- PH-2 Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- PH-3 Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The Initial Study, included as Appendix A, substantiates that impacts associated with Threshold PH-1 would be less than significant. This impact will not be addressed in the following analysis.

5.9.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.9-1: PROJECT IMPLEMENTATION WOULD DISPLACE SUBSTANTIAL NUMBERS OF HOUSING AND PEOPLE, BUT WOULD NOT REQUIRED CONSTRUCTION OF REPLACEMENT HOUSING. [THRESHOLDS P-2 AND P-3]

Impact Analysis:

Residential Displacement

The Warner Avenue Widening from Main Street to Grand Avenue project would require additional right of way and require the acquisition of private property. Project implementation would displace a total of 42

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residential units, including 21 owner-occupied single-family units, 8 tenant-occupied single-family units, and 13 multifamily units.¹

Based on an average household size of 4.35 persons, an estimated 183 persons would be displaced by the project (see Appendix K).

A draft relocation impact report was prepared to assess the relocation impacts of the proposed project. The relocation impact report considered various relocation factors such as housing prices, vacancy rates, school district, and proximity to employment and public transportation. The most probable and practical region where relocation options would be available were determined. The result was a replacement area encompassing an approximate five-mile radius from the center of the project area, including nearly all of the City of Santa Ana and portions of Fountain Valley, Irvine, Anaheim, Costa Mesa, Tustin, Garden Grove, Westminster, and the City of Orange. This area is shown in Figure 5.9-2, *Replacement Area Map*.

Public amenities—such as all varieties of utilities and access to public transportation and major commercial outlets—in the replacement area are comparable to those in the neighborhoods that would be displaced by the proposed project. The replacement area is also considered similar with respect to access to public and private schools, multiple forms of transportation, including air, bus, train, and highways; industrial, commercial, and retail employment outlets; entertainment; and shopping.

At the time research was completed for the relocation impact report, in January 2013, 201 single-family units were available for sale or for rent and 156 multifamily units were for sale or for rent in the replacement area. This totaled 357 units available for lease or rent in the month this study was completed.

As shown in Table 5.9-9, there are 334 available units to accommodate the 42 displaced units.



**Table 5.9-9
Summary of Available Single- and Multifamily Residential Units**

<i>Displaced Units</i>	<i>Available Units</i>	<i>Median Purchase Price/Rent</i>
22 owner-occupied single-family homes	37 two-bedroom	\$100,000–\$620,000 (Median: \$360,000)
	59 three-bedroom	\$75,000–\$710,000 (Median: \$392,000)
	27 four-bedroom	\$95,000–\$1,261,000 (Median: \$678,000)
	11 five- to six-bedroom	\$405,000–\$1,100,000 (Median: \$752,500)
8 tenant-occupied single-family units	2 one-bedroom	\$950–\$1,200 (Median: \$1,075)
	10 two-bedroom	\$1,000–\$2,700 (Median: \$1,850)
	20 three-bedroom	\$1,800–\$4,100 (Median: \$2,950)
	7 four-bedroom	\$2,650–\$4,200 (Median: \$3,425)
	3 five-bedroom	\$2,900–\$5,000 (Median: \$3,950)
14 multifamily units	11 studios	\$875–\$1,685 (Median: \$1,280)
	42 one-bedroom	\$825–\$2,150 (Median: \$1,488)
	45 two-bedroom	\$1,195–\$2,150 (Median: \$1,673)
	6 three-bedroom	\$2,145–\$2,482 (Median: \$2,314)

Source: Overland, Pacific & Cutler, Inc. February 2013.

¹ The residential units that would be acquired are on 34 properties: five containing multifamily residential units – duplexes and an apartment complex – and 29 containing single-family residences.

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In addition, the project may affect many owners and tenants currently occupying multifamily units. As a result, the relocation impact report includes a detailed survey of available 2- to 20-unit multifamily properties for sale. The report identifies 25 multifamily complexes, as shown in Table 5.9-10.

Table 5.9-10
Availability Multifamily Residential Income Properties for Sale

	2 and 3 units	4 to 8 units	9 to 20 units	More than 20 units
Number Found	5	14	4	2
Price Range	\$390,000–\$925,000	\$624,950–\$1,738,000	\$1,325,000–\$2,100,000	\$2,600,000–\$6,900,000
Median Price	\$599,000	\$869,000	\$1,788,000	\$4,000,000

The relocation impact report concluded that an adequate supply of housing stock is anticipated to be available for all persons impacted by the project. Of course, price and supply are not the only obstacles, and housing must be found that accommodates personal circumstances. Obtaining financing may be more difficult as well. Requirements such as relocating within the current school district, proximity to employment, and public transportation are additional considerations. Financial constraints for impacted residents, including unemployment or damaged credit, could produce significant challenges to purchasing a replacement residence, and may result in current owners becoming tenants for a limited time while their credit is repaired and adequate job options become available.

The recent economic and housing market decline provides for lower purchase prices and room for greater lease options. The average range of lease amounts surveyed in the replacement area is estimated from \$825 to \$2,482 for multifamily residential housing and \$950 to \$5,000 for single-family residences. Although the project area maintains slightly lower rental rates compared to the replacement area, replacement housing that includes lower cost lease options is adequate.

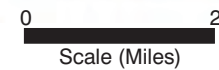
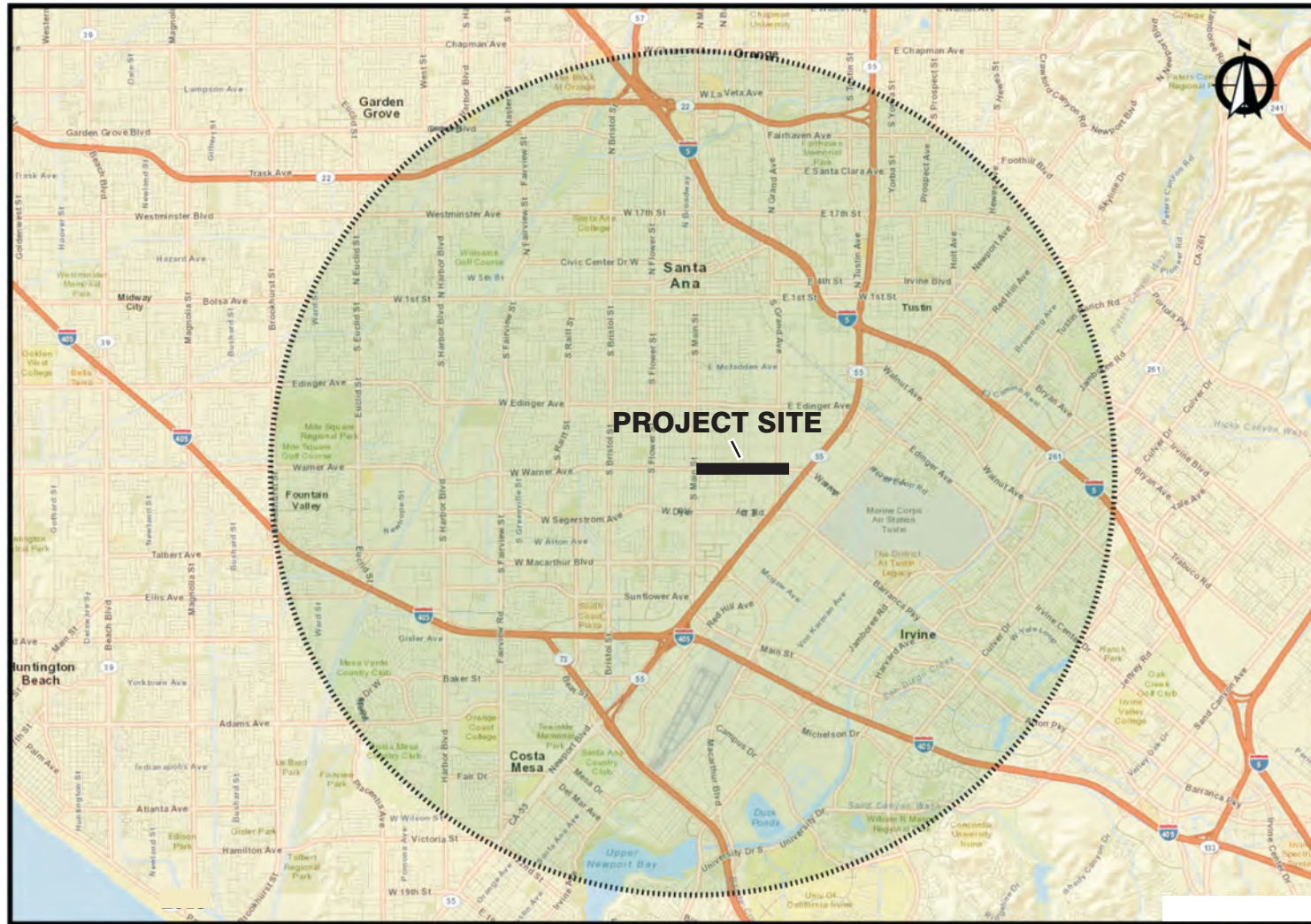
Relocation Assistance

The City of Santa Ana would provide relocation assistance payments and counseling to the Warner Avenue Widening from Main Street to Grand Avenue project residents in accordance with the Guidelines, which were created to provide protection and assistance to people who are being relocated. Relocation benefits offered under the Guidelines include advisory services for assistance in the move process, a replacement housing payment, payments for moving expenses, and assistance with closing costs on replacement housing. The following describes minimum measures included in the relocation assistance advisory program undertaken pursuant to CCR Title 25 Guidelines:

- (1) Fully inform eligible persons within 60 days following the initiation of negotiations but not later than the close of escrow on the property, for a parcel as to the availability of relocation benefits and assistance and the eligibility requirements therefore, as well as the procedures for obtaining such benefits and assistance.
- (2) Determine the extent of the need of each such eligible person for relocation assistance.
- (3) Assure eligible persons that within a reasonable period of time prior to displacement, there will be available comparable replacement housing.

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Replacement Area Map



Source: Overland, Pacific & Cutler, Inc. 2013

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- (4) Provide current and continuing information on the availability, prices, and rentals of comparable sales and rental housing, and of comparable commercial properties and locations, and as to security deposits, closing costs, typical down payments, interest rates, and terms for residential property in the area.
- (5) Assist each eligible person to complete applications for payments and benefits.
- (6) Assist each eligible, displaced person to obtain and move to a comparable replacement dwelling.
- (7) Assist each eligible person displaced from his business or farm operation in obtaining and becoming established in a suitable replacement location.
- (8) Provide any services required to insure that the relocation process does not result in different or separate treatment on account of race, color, religion, national origin, sex, marital status, familial status, or any basis protected by state or federal anti-discrimination laws, or any other arbitrary circumstances.
- (9) Supply to such eligible persons information concerning federal and state housing programs, disaster loan and other programs administered by the Small Business Administration, and other federal or state programs, offering assistance to displaced persons.
- (10) Provide other advisory assistance to eligible persons in order to minimize their hardships. It is recommended that, as needed, such assistance include counseling and referrals with regard to housing, financing, employment, training, health and welfare, as well as other assistance.
- (11) Inform all persons who are expected to be displaced about the eviction policies to be pursued in carrying out the project.



Pursuant to the Guidelines, a specific relocation plan would be prepared, and all displaced persons would be contacted by a relocation agent, who is responsible for ensuring that displaced persons receive full relocation benefits, including advisory assistance, and that all activities are conducted in accordance with federal and state regulations. All displaced residents would receive relocation assistance from the City of Santa Ana. As a result, it is not anticipated that there will be any extraordinary or insurmountable obstacles with regard to the relocation of residential uses. The Guidelines, as implemented by City of Santa Ana, would assure that no residential occupant would be displaced without adequate, decent, safe, sanitary, comparable, and functionally equivalent replacement housing being made available.

Commercial Displacement

The proposed project would displace commercial properties only, including one bank and one gas station and smog check business. No industrial/manufacturing businesses, nonprofit organizations, government buildings, or agricultural/farm businesses would be affected by the proposed project. The relocation report estimated the total number of employees that would be replaced. Most of the impacts would be to small employers—those keeping 21 to 100 employees on staff. All of the affected businesses are in the service sector. No businesses with 101 employees or more would be affected.

A search for potential replacement space for the bank, gas station, and smog check businesses was conducted in January 2013 within Santa Ana and adjacent areas. The search parameters included construction, manufacturing, retail, government, nonprofit, and service businesses. The search identified

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approximately 330 manufacturing properties, 95 retail properties, 106 nonprofit properties, and 36 service properties. Therefore, there is sufficient replacement commercial sites available to accommodate each of the commercial businesses displaced.

Finding replacement sites for the service station and smog check center presents the most difficulty due to the nature of the business, in part because of an inability to find a suitable replacement site in the immediate area and permitting restrictions. Eligible businesses displaced as a result of the proposed project would be entitled to relocation benefits under State of California guidelines. Under the Guidelines, hardship advance relocation payments would also be considered, if requested by the business.

It is anticipated that a specific relocation plan would be prepared for the proposed project. The full or partial acquisitions would comply with policies pursuant to the Guidelines, as implemented by the City of Santa Ana. As the project progresses, all displacees would be contacted by a relocation agent, who would ensure that eligible displacees receive their full relocation benefits, including advisory assistance, and that all activities would be conducted in accordance with the Guidelines.

All displaced residents and businesses would receive relocation assistance from the City of Santa Ana, in accordance with the Guidelines. Therefore, impacts to population and housing would be less than significant.

5.9.4 Cumulative Impacts

The City of Santa Ana is currently involved in several other public works projects in addition to the proposed project, several of these will also displace housing and people. According to the Draft Relocation Impact Statement, there are other concurrent public projects in the project area that could potentially involve future displacements. These include the following current City projects:

- Grand Avenue Widening from Fourth Street to Seventeenth Street
- Bristol Street Widening from Civic Center Drive to Seventeenth Street
- The Fixed Guideway Project
- Grand Avenue Grade Separation
- Santa Ana Boulevard Grade Separation
- Seventeenth Street Grade Separation
- SR-55 Widening: I-5 to I-405
- I-5 Widening: SR-57 to SR-55
- Bristol Street Widening from Warner Avenue to St. Andrew Place

The nine above-mentioned projects have the potential to create competing needs location for those displacees affected by the proposed project. However, a study of the replacement area demonstrates that ample housing stock is available to accommodate the proposed project in addition to the other improvement projects noted above. Adequate replacement resources are available in the City and surrounding area to accommodate the displaced homes and businesses without requiring construction of replacement housing. In consideration of the preceding factors, the project's contribution to cumulative housing and population impacts would be rendered less than significant, and therefore, project impacts would not be cumulatively considerable.

5.9.5 Existing Regulations and Standard Conditions

- Government Code Section 7260
- California Code of Regulations Title 25, Division 1, Chapter 6

5.9.6 Level of Significance Before Mitigation

Relocation assistance for displaced residents, and relocation benefits for displaced businesses – in accordance with the regulations listed above in Section 5.9-5 – would reduce impacts on displacement of residents and businesses to less than significant.

5.9.7 Mitigation Measures

No mitigation measures are required.

5.9.8 Level of Significance After Mitigation

Impacts would be less than significant.



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5.10 TRANSPORTATION AND TRAFFIC

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for implementation of the proposed project to result in transportation and traffic impacts in the project area. The analysis in this section is based in part on the following technical reports:

- *Traffic Impact Study Supplemental Memorandum*, IBI Group, January 2015.
- *Warner Avenue Widening Project Traffic Impact Study*, IBI Group, May 2014.
- *Cherry Aerospace Technical Memorandum*, IBI Group, May 2013.

Complete copies of the study and the memorandums are included as Appendix L of this Draft EIR.

Definitions

Level of Service

The efficiency of traffic operations is measured in terms of level of service (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. Evaluation of roadways and intersections involves the assignment of grades from “A” to “F,” with LOS “A” representing the highest level operating conditions and LOS “F” representing extremely congested and restricted operations. Descriptions of operation and the range of volume-to-capacity ratios for each LOS grade are presented in Table 5.10-1.



**Table 5.10-1
Descriptions of Traffic Operation**

LOS	Interpretation
A	Free Flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.
B	Stable flow. The presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream with LOS A. The general level of comfort and convenience provided is somewhat less than that of LOS A, because the presence of others in the traffic stream begins to affect individual behavior.
C	Stable flow. This LOS marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.
D	High density, but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
E	Operating conditions at or near the capacity level. All speeds are reduced to a slow but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and generally accomplished by forcing a vehicle or pedestrian to “give way” to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and drivers or pedestrian frustration is generally high. Operations at this level are usually unstable because small increases in flow or minor variations within the stream will cause a breakdown.
F	Forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse that point. Queues form up behind such locations as arrival flow exceeds discharge flow.

Source: IBI 2014.

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Roadway Segments

Arterial roadway segment performance is based on the capacity of the facility (as determined by the functional classification, roadway geometrics, and number of through lanes) and the Average Daily Traffic (ADT) volumes. The City of Santa Ana General Plan Circulation Element evaluates roadway segment performance in terms of LOS, where the thresholds for each LOS grade are based on daily volume-to-capacity (V/C) ratios. The maximum average daily volumes for arterial roadways by street classification and lane configuration and the corresponding LOS are summarized in Table 5.10-2.

**Table 5.10-2
Roadway Segment Level of Service**

Street Classification	Lane Configuration	A	B	C	D	E	F
Principal Arterial	8 Lanes Divided	45,000	52,500	60,000	67,500	75,000	>75,000
Major Arterial	6 Lanes Divided	33,900	39,400	45,000	50,600	56,300	>56,300
Primary Arterial	4 Lanes Divided	22,500	26,300	30,000	33,800	37,500	>37,500
Secondary Arterial	4 Lanes Undivided	15,000	17,500	20,000	22,500	25,000	>25,000
Commuter Street	2 Lanes Undivided	7,500	8,800	10,000	11,300	12,500	>12,500

Source: IBI 2014.

Signalized Intersections

Traffic conditions at signalized intersections are evaluated using the Intersection Capacity Utilization (ICU) methodology consistent with the City of Santa Ana traffic analysis procedures. The ICU methodology is based on intersection V/C ratios. The V/C value for each movement is the observed or forecast volume divided by the saturation flow volume. The intersection ICU value is the sum of the V/C values for the critical movement on each leg, where critical movements are the pairs of conflicting movements with the highest combined V/C values. ICU is usually expressed as a decimal value (e.g. 0.74), where 1.00 represents the saturated condition where the volume of traffic flow is equal to the capacity. This study uses maximum saturation volumes of 1,600 vehicles per hour per lane (VPHPL) for turn lanes and 1,700 VPHPL for through lanes for the study intersection analysis. Each letter grade corresponds to a range of ICU values, as described in Table 5.10-3.

**Table 5.10-3
Signalized Intersection Level of Service**

LOS	Volume to Capacity Ratio
A	0.00–0.60
B	0.61–0.70
C	0.71–0.80
D	0.81–0.90
E	0.90–1.00
F	>1.00

Source: IBI 2014.

Unsignalized Intersections

Unsignalized two-way stop controlled intersections are analyzed using the Highway Capacity Manual (HCM) methodology. This methodology uses delay as a measure of level of service instead of volume to capacity ratios. The average control delay ranges and respective level of service are listed in Table 5.10-4.

Table 5.10-4
Unsignalized Intersection Level of Service

Level of Service	Average Control Delay (seconds per vehicle)
A	0–10
B	>10–15
C	>15–25
D	>25–35
E	>35–50
F	>50

Source: IBI 2014.

5.10.1 Environmental Setting

Existing Roadway Network

The Warner Avenue Widening from Main Street to Grand Avenue project site is on the east side of the City of Santa Ana, just west of State Route 55 (SR-55 or Costa Mesa Freeway). The site extends along Warner Avenue approximately one mile from Main Street on the west to Grand Avenue on the east.

The study area for the traffic analysis is from Edinger Avenue on the north to Dyer Road on the south, and from Flower Street on the west to the SR-55 on the east. Existing study area is shown on Figure 5.10-1, *Project Study Area*. Selected roadways in the vicinity of the project corridor are described below.

Warner Avenue is a four-lane undivided arterial that runs east and west. There are currently no striped bicycle lanes, and on-street parking is not allowed. The posted speed limit is 40 miles per hour (mph), but this limit is reduced to 25 mph between Orange Avenue and Standard Avenue, in the school zone for James Monroe Elementary School, when children are present. Warner Avenue is classified a Major Arterial in the Orange County Master Plan of Arterial Highways. Warner Avenue is also designated in the City’s General Plan Circulation Element Master Plan of Streets and Highways as a major arterial (Santa Ana 1998)—that is, a six-lane, divided 120-foot-wide arterial.

Edinger Avenue is a major east–west arterial that is divided by a raised landscaped median and defines the northern boundary of the study area. West of Main Street, Edinger Avenue is a four-lane divided arterial; between Main Street and Evergreen Street, there are two eastbound lanes and three westbound lanes; and, east of Evergreen Street, Edinger Avenue is a six-lane divided arterial with three lanes in each direction. There are currently no striped bicycle lanes in either direction. Onstreet parking is permitted in the eastbound direction from Main Street to Maple Street and from Cedar Street to Evergreen Street. The posted speed limit is 40 mph.

Dyer Road is an east–west divided arterial that defines the southern boundary of the study area. West of Main Street, Dyer Road has four lanes; from Main Street to Orange Avenue, there are three eastbound lanes and two westbound lanes plus a right turn lane; and east of Orange Avenue, Dyer Road is a six-



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lane divided arterial with three lanes in each direction. There are no bicycle lanes and onstreet parking is prohibited. The posted speed limit is 40 mph.

Flower Street runs north and south and is the west boundary of the project study area. South of Warner Avenue, Flower Street is a four-lane undivided secondary arterial with a center two-way left turn lane. There are no striped bicycle lanes and on-street parking is prohibited. North of Warner Avenue, Flower Street is a two-lane undivided collector street. On-street parking is allowed on selected blocks on the west side of the street, and there are no striped bicycle lanes. The speed limit is 25 mph.¹

Main Street is an undivided arterial that runs north and south through the study area. North of Warner Avenue, Main Street has four lanes with a center two-way left-turn lane. From Warner Avenue to Saint Gertrude Place, the speed limit is posted 25 mph when children are present.² North of Saint Gertrude Place, the speed limit on Main Street is 35 mph. South of Warner Avenue, the speed limit is 40 mph. Between Warner Avenue and Dyer Road, there are two northbound lanes and three southbound lanes on Main Street with a center two-way left-turn lane. Parking is permitted on the east side of the street between Goetz Avenue and Dyer Road, and prohibited on Main Street through the rest of the study area. South of Dyer Road, Main Street widens to a six-lane facility with a center two-way left-turn lane.

Halladay Street is a local two-lane undivided street that travels north and south between Warner Avenue and Dyer Road. On-street parking is permitted along Halladay Street, but there are no bicycle lanes. The speed limit is 25 mph.

Standard Avenue is a four-lane undivided street that runs north and south through part of the study area and forms a T-intersection with Warner Avenue. Parking is permitted along the residential blocks on the west side of Standard Avenue.

Grand Avenue runs north and south though the study area. From the southbound SR-55 off-ramp to the northern study area boundary, Grand Avenue is a six-lane undivided arterial with a center two-way left-turn lane. Approximately 900 feet north of Warner Avenue, Grand Avenue narrows to two lanes in the southbound direction, and the third southbound lane is restored about 300 feet north of Warner Avenue. South of the SR-55 off-ramp, Grand Avenue has two northbound and three southbound lanes divided by a landscaping median. Parking is not allowed along Grand Avenue. The posted speed limit is 45 mph.

Wright Street is a two-lane undivided local street that runs north and south between Saint Gertrude Place and Warner Avenue. South of Warner Avenue, the street is named Brookhollow Drive and serves an office park campus.

Brookhollow Drive is a two-lane undivided access road that provides access to the Brookhollow Office Park from Warner Avenue and Grand Avenue. This street is located on the eastern side of the study area.

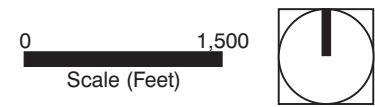
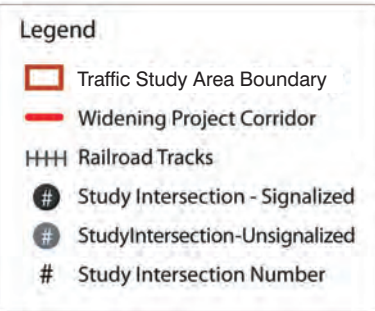
Eleven intersections were analyzed based on proximity to the Warner Avenue Widening from Main Street to Grand Avenue project, as shown below. Existing intersection geometry is shown in Figure 5.10-2, *Existing Roadway and Intersection Geometry*.

¹ California Department of Motor Vehicles. Vehicle Code, Section 22352(2)(a). Prima Facie Speed Limits. <https://www.dmv.ca.gov/pubs/vctop/d11/vc22352.htm>. The speed limit is automatically 25 miles per hour on any highway other than a state highway, in any business or residence district unless a different speed is determined by local authority under procedures set forth in the code.

² The segment of Main Street between Warner Avenue and St. Gertrude Place is in the school zone for two schools: Manuel Esqueda Elementary School at 2240 South Main Street at its intersection with Warner Avenue, and Cesar Chavez High School at 2128 Cypress Avenue next to the intersection of Main Street and St. Gertrude Place.

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Traffic Study Area



Source: IBI 2013

Warner Avenue Widening from Main Street to Grand Avenue Draft EIR

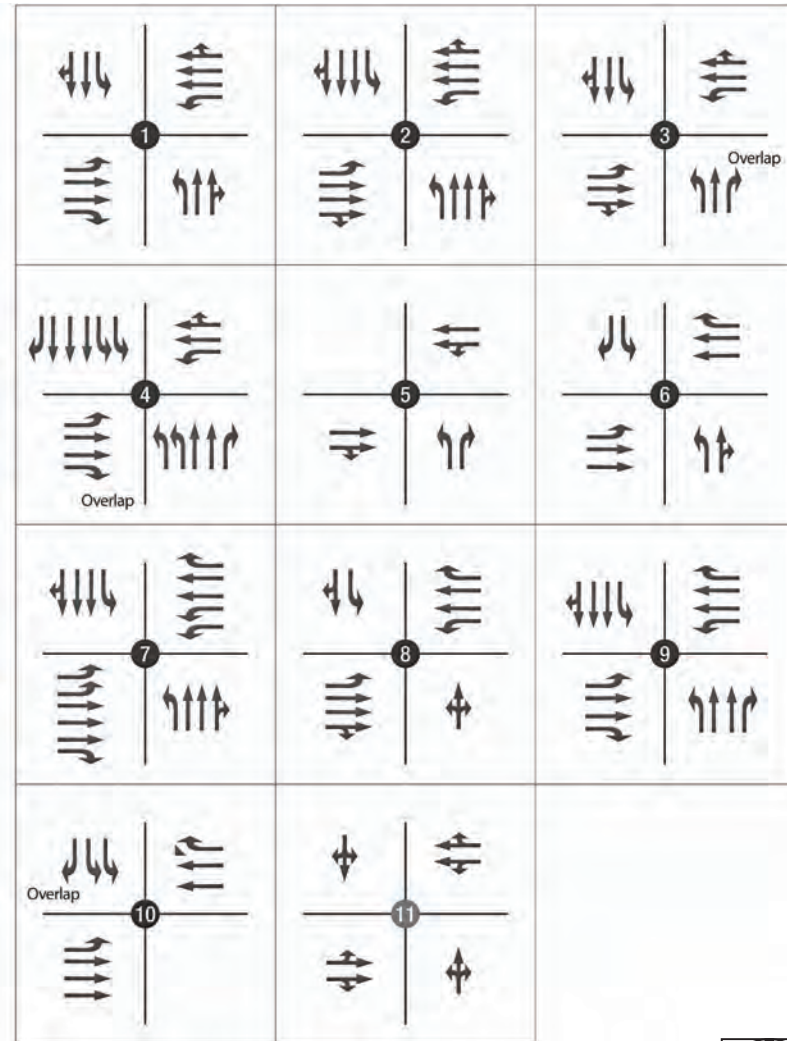
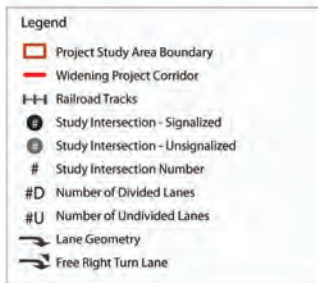
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Existing Roadway and Intersection Geometry



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1. Main Street and Edinger Avenue
2. Grand Avenue and Edinger Avenue
3. Flower Street and Warner Avenue
4. Main Street and Warner Avenue
5. Halladay Street and Warner Avenue
6. Standard Avenue and Warner Avenue
7. Grand Avenue and Warner Avenue
8. Wright Street and Warner Avenue
9. Main Street and Dyer Road
10. Grand Avenue and Dyer Road
11. Maple Street and Warner Avenue

The intersection of Maple Street and Warner Avenue is controlled by cross-street stop signs; the remaining 10 study area intersections are signalized.

Pedestrian Mobility

There are sidewalks along both sides of Warner Avenue. In some areas the sidewalk is directly adjacent to the street; parkways separate the sidewalk from the curb in other locations. Sidewalk widths vary from four to ten feet depending on the location; however, some sections restrict pedestrian space to between three to five feet wide between power poles and landscape shrubs or walls.



Bicycle Mobility

Bicycle lanes in the City vary in width from four feet to seven feet depending on the available right-of-way. The City has established the following two bikeway classifications, which generally correspond with the Orange County Transportation Authority (OCTA) bikeway classifications:

- Class I Bikeway. Provides for bicycle travel on a right-of-way completely separated from the street.
- Class II Bikeway. Provides for a striped lane for one-way travel within the street right-of-way.

A Class I pedestrian and bicycle path runs in the north-south direction throughout the study area and crosses Warner Avenue about 150 feet east of Maple Street. The bicycle path intersection at Warner Avenue is signalized, but remains green for traffic on Warner Avenue unless activated by a pedestrian push button; thus, this signal is not included in the intersection analysis. Bike lanes are not provided along Warner Avenue within the project limits.

Fire Station Signal

A fire station signal is located on Warner Avenue about 700 feet west of Grand Avenue. Similar to the pedestrian/bicyclist activated signal, it remains green for traffic on Warner Avenue unless activated by an emergency vehicle. The bicycle path and fire station signals do not operate on regular cycles and are not included in the intersection analysis.

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Railroad

The Union Pacific Railroad (UPRR) rail corridor crosses Warner Avenue between Standard Avenue and Grand Avenue. This freight corridor is a spur off the Metrolink railroad corridor and serves many industrial uses within the City. The existing crossing at Warner Avenue is gated, with train crossings occurring once or twice a day.

Schools and School Zones

There are two schools next to the project site: James Monroe Elementary School at 417 East Central Avenue along the south side of Warner Avenue near its intersection with Oak Street; and Manuel Esqueda Elementary School at 2240 South Main Street at the northwest corner of the intersection of Warner Avenue and Main Street (see Figure 3-3, *Existing Land Use*). The segment of Main Street between Warner Avenue and St. Gertrude Place is in a school zone for two schools: Manuel Esqueda Elementary School, and Cesar Chavez High School at 2128 Cypress Avenue next to the intersection of Main Street and St. Gertrude Place. Part of Warner Avenue within the project site is also in a school zone for James Monroe Elementary School.

Transit

There are three OCTA bus lines that service Warner Avenue in the project study area. Route 72 runs all day through the whole study area with average peak frequency of two buses per hour. Route 463 has service only in the AM and PM peak periods, and services the study area with three buses per hour. Route 55 runs all day and services Warner Avenue between Halladay Street and Grand Avenue, with a frequency of three buses per hour in the peak hours.

Bus stops with concrete bus pads are provided at the following locations along Warner Avenue:

- Eastbound
 - Main Street intersection
 - Midblock between Maple and Oak Streets
 - Standard Avenue intersection

- Westbound
 - Maple Street intersection
 - Halladay Street intersection
 - Standard Avenue intersection
 - Between UPRR corridor and Hathaway Street
 - Grand Avenue intersection

Existing Traffic Conditions

Traffic counts provided by the City of Santa Ana were taken at study area intersections on Tuesday through Thursday, April 17 through 19, 2012, between 7:00 and 9:00 AM and 4:00 to 6:00 PM on each of the three days. Traffic counts were taken on Warner Avenue at two locations, one east of Main Street and one west of Grand Avenue, over 24 hours on Wednesday, June 13, 2012 (IBI 2014).

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Roadway Segment Level of Service

Warner Avenue currently serves about 23,000 to 28,000 vehicles per day through the project area. Table 5.10-5 includes the 24-hour count locations, volumes, and corresponding arterial level of service. Warner Avenue is currently operating at a deficient level of service or at capacity for a four-lane undivided arterial as defined by the City of Santa Ana Circulation Element. Conditions on this roadway are expected to further deteriorate in the future as traffic volumes continue to increase.

**Table 5.10-5
Existing Roadway Segment Level of Service**

<i>Section Limits</i>	<i>Lane Configuration</i>	<i>Daily Volume</i>	<i>LOS</i>
Warner Av between Main St & Halladay St	4 lanes undivided	28,640	F
Warner Av between Standard Ave & Grand Ave	4 lanes undivided	23,814	D

Source: IBI 2014.

A four-lane arterial is designed to accommodate up to 30,000 vehicles per day if it is divided (center median) and 20,000 vehicles if undivided. A four-lane undivided arterial roadway with average daily traffic volumes of 20,000 vehicles is operating at LOS C (stable flow). Within the study area, Warner Avenue has a median (striped not raised) in some segments and no center median in other segments; therefore, this four-lane section of Warner Avenue is designed to accommodate up to 20,000 vehicles per day. However, between Main Street and Halladay Street there are currently approximately 28,640 vehicles per day, and between Standard Avenue and Grand Avenue approximately 23,814 vehicles per day. By the year 2035, estimated traffic volumes along this segment are forecast at up to 29,600 vehicles per day. Current vehicle volumes exceed the road capacity, and future volumes would be at the top carrying capacity for a four-lane divided arterial. Currently Warner Avenue between Main Street and Halladay Street is operating at LOS F and between Standard Avenue and Grand Avenue at LOS E.



Intersection Level of Service

A summary of the AM and PM peak hour level of service (LOS) analysis results for the year 2012 existing condition are included in Table 5.10-6.

**Table 5.10-6
Existing Intersection Level of Service**

	<i>Intersection</i>	<i>V/C (Average Delay)</i>	<i>LOS</i>	<i>V/C (Average Delay)</i>	<i>LOS</i>
1	Main St & Edinger Ave	0.786	C	0.842	D
2	Grand Ave & Edinger Ave	0.697	B	0.791	C
3	Flower St & Warner Ave	0.780	C	0.838	D
4	Main St & Warner Ave	0.726	C	0.836	D
5	Halladay St & Warner Ave	0.564	A	0.582	A
6	Standard Ave & Warner Ave	0.433	A	0.519	A
7	Grand Ave & Warner Ave	0.465	A	0.648	B
8	Wright St & Warner Ave	0.339	A	0.497	A
9	Main St & Dyer Rd	0.735	C	0.862	D
10	Grand Ave & Dyer Rd	0.685	B	0.686	B
11	Maple St & Warner Ave	(1.5)	A	(1.1)	A

Source: IBI 2014.

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The minimum acceptable level of service established by the Circulation Element of the City of Santa Ana General Plan is LOS D for major intersections in the City.³ All study intersections currently operate at an acceptable level of service during both peak hour time periods.

The intersection of Maple Street and Warner Avenue is estimated to operate at level of service A. Due to the intersection configuration—two-way stop control in the north–south direction—the volumes that approach the intersection in these directions experience higher delays. Because of the traffic on Warner Avenue it takes additional time to make left turns from Maple Street onto Warner Avenue.

Cherry Aerospace Driveway and Operations

Cherry Aerospace is located at 1224 East Warner Avenue. Access to and from the site is currently provided via three driveways. The first driveway (Driveway 1) is located at the intersection of Standard Avenue and Warner Avenue and provides one-way access out of the Cherry Aerospace parking lot. The second driveway (Driveway 2) is located along Warner Avenue 130 feet east of Standard Avenue and provides one-way access into the parking lot. The third driveway (Driveway 3) is located along Warner Avenue 186 feet east of Standard Avenue and provides two-way access in and out of the Cherry Aerospace parking lot (see Figure 5.10-3, *Existing Cherry Aerospace Driveways*). The facility provides access to three types of vehicle traffic: employee parking, visitor parking, and shipping and receiving trucks. The existing bus stop for eastbound Routes 55, 72, and 463 at the intersection of Warner Avenue and Standard Avenue is on the south side of Warner Avenue between Driveways 1 and 2.

Employees and visitors enter the parking lot via Driveway 2 and exit the parking lot via Driveway 1. Driveway 3 is designated for shipping and receiving trucks. All driveways are gated and require a scan badge before entering the parking lot. Shipping and receiving trucks currently park along the center median on Warner Avenue and cross the street to obtain a scan badge before entering the parking lot.

Regulatory Setting

State

Complete Streets Act of 2008


The purpose of the Complete Streets Act of 2008 (Assembly Bill 1358, California Government Code Sections 65040.2 and 65302) is to ensure that all users of the transportation system, including pedestrians, bicyclists, and transit users as well as children, older individuals, and individuals with disabilities, are able to travel safely and conveniently on streets and highways within the public right-of-way. The City is currently in the process of updating their circulation element. The Complete Streets Act requires that city general plan circulation elements comply with the complete streets principals (planning for all modes). Following the widening, Warner Avenue would be consistent with the City's General Plan Circulation Element and therefore would comply with the policies outlined in the Complete Streets Act.

³ LOS E is acceptable in major development areas; however, the project site is not in a major development area as defined in the City's General Plan Growth Management Element (Santa Ana 1991).

Existing Cherry Aerospace Driveways



1 Driveway, Cherry Aerospace Property

 Bus Stop, Eastbound Routes 55, 72, and 463

Source: IBI 2013c

Warner Avenue Widening from Main Street to Grand Avenue Draft EIR

0 70
Scale (Feet)



PlaceWorks • Figure 5.10-3

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Regional

Congestion Management Plan

To address the increasing public concern that traffic congestion is impacting the quality of life and economic vitality of the State of California, the congestion management plan (CMP) was enacted by Proposition 111. The intent of the CMP is to provide the analytical basis for transportation decisions through the State Transportation Improvement Program (STIP) process. The CMP in effect in Orange County was issued by the Orange County Transportation Authority (OCTA) in October 2011. The CMP designates a highway network that includes all state highways and principal arterials within the county and monitors the network's LOS standards.

The CMP traffic impact analysis guidelines require analyses of all CMP arterial monitoring intersections where a project could add a total of 50 or more trips during either the AM or PM peak hours of adjacent street traffic. Additionally, all CMP mainline freeway monitoring locations where a project could add 150 or more trips in either direction during the peak hours must be analyzed. The nearest CMP arterial is Edinger Avenue; the nearest freeway is SR-55.

Master Plan of Arterial Highways

The OCTA Master Plan of Arterial Highways (MPAH) designates Warner Avenue as a major arterial, defined as a six-lane divided 120-foot wide arterial designed to accommodate 45,000 to 60,000 vehicles per day. The MPAH establishes a countywide roadway network intended to ensure coordinated transportation system development among local jurisdictions in Orange County (OCTA 2011a).

Methodology

The traffic analysis includes an assessment of traffic conditions for the Warner Avenue roadway segment and intersections under the following analysis timeframes. Existing conditions are based on 2012, as traffic counts for the project were done in that year.

- Existing Condition without Project: Year 2012
- Existing Condition with Project: Year 2012
- Opening Year without Project: Year 2020
- Opening Year with Project: Year 2020
- Horizon Year without Project: Year 2035
- Horizon Year with Project: Year 2035

A supplemental analysis was conducted in January 2015. The analysis compares traffic volumes identified in the *Warner Avenue Widening from Main Street to Grand Avenue Project Traffic Impact Study*, which used 2012 traffic counts, with more recent counts conducted by the City of Santa Ana in 2013. This comparison provided a high-level evaluation of whether the use of updated traffic counts could result in changes to the conclusions presented in the traffic analysis, or result in new significant traffic impacts that were not previously identified. The traffic study and memorandum are included as Appendix L of this Draft EIR and summarized at the end of this chapter.

Two scenarios are used in evaluating project traffic impacts. Direct impacts are evaluated using existing conditions (2012) as a baseline, in accord with a 2010 Appellate Court decision (*Sunnyvale West Neighborhood Association v. City of Sunnyvale City Council*; 190 Cal.App.4th 1351). Cumulative impacts are assessed using forecast traffic conditions in the project future year (2020, 2035).



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Forecasting 2020 and 2035 Without-Project Conditions

The opening year 2020 and horizon year 2035 volumes were derived based on existing peak hour count data and forecast link volumes obtained from the Orange County Transportation Analysis Model (OCTAM 3.4). OCTAM 3.4 is the accepted regional model for forecasting travel demand for Orange County. Growth factors for each intersection approach and departure were interpolated from OCTAM 3.4 link plots for 2010 and 2035. OCTAM includes projected trips from cumulative projects. The model uses the latest adopted demographic forecasts – including growth in housing, population, and employment – from Orange County Projections (OCP) issued by the Center for Demographic Research at California State University, Fullerton. The OCP demographic projections are consistent with the anticipated growth that is expected in conjunction with the City’s general plan land use and circulation elements. The average growth along Warner is 1.04 percent per year for AM peak and 1.24 percent per year for PM peak. These growth factors were then applied to existing counts to forecast future turning movement volumes at each of the study area intersections. Additional detail on the OCTAM forecasts and applied growth factors is provided in Appendix L. Cumulative impacts are analyzed in the opening year plus project (2020) and horizon year plus project (2035) analyses.

5.10.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project could:

- T-1 Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- T-2 Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- T-3 Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- T-4 Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- T-5 Result in inadequate emergency access.
- T-6 Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Thresholds T-2 and T-3

These impacts will not be addressed in the following analysis.

Level of Service Thresholds

The minimum acceptable level of service established by the City of Santa Ana's General Plan Circulation Element is LOS D for major intersections in the City—except in major development areas, where LOS E is considered to be the minimum acceptable LOS.⁴ Project impacts to intersections are considered significant if an unacceptable peak hour LOS is projected or if the project increases traffic at an intersection by 1 percent of capacity (0.010) if the intersection already operates at an unacceptable level.

The Congestion Management Plan establishes LOS E as the minimum acceptable level of service for CMP roadways (freeways and Smart Streets). A significant impact is caused by a 1 percent increase in V/C (0.010) if the CMP intersection that already operates at LOS F. Within the project study area, Edinger Avenue is designated a CMP roadway. SR-55, the nearest freeway to the study area, is also an element of the CMP highway system. There are no CMP intersections in the study area; the nearest such intersection to the study area is that of Edinger Avenue, with the ramps to and from southbound SR-55.

5.10.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study identified potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

The Warner Avenue Widening from Main Street to Grand Avenue project proposes to improve the one-mile segment of Warner Avenue between Main Street and Grand Avenue from a four-lane undivided arterial to a six-lane divided arterial. These changes would bring Warner Avenue into compliance with the MPAH and are expected to improve mobility and safety. The modifications to Warner Avenue intersections are described below and are shown in Figure 5.10-4, *Roadway and Intersection Geometry with Project*.



Flower Street and Warner Avenue (#3): The intersection of Flower Street and Warner Avenue would be improved to provide a dedicated westbound right turn lane, resulting in one left turn lane, two through lanes, and one right turn lane in the westbound direction.

Main Street and Warner Avenue (#4): The intersection of Main Street and Warner Avenue would be improved to provide dual eastbound and westbound left turn lanes. The east leg of the intersection would be widened to provide three westbound approach lanes and three eastbound departure lanes. In the existing condition, there are three westbound departure lanes on the west leg of the intersection, so no changes would be made for this segment.

Halladay Street and Warner Avenue (#5): In addition to widening this intersection to provide six through lanes on Warner Avenue, a left turn pocket would be provided to access Halladay Street.

Standard Avenue and Warner Avenue (#6): Currently there is a driveway on the south side of Warner Avenue that lines up with Standard Avenue and provides egress movements only for Cherry Aerospace (see Figure 4-1b). The project would change the existing driveways to Cherry Aerospace. To maximize employee and truck access to the site, the driveway at Standard Avenue (Driveway 1) would be reconfigured to include two-way access, with one inbound lane and three outbound lanes (1 left-turn lane, 1 through lane, and 1 right-turn lane). The second driveway (Driveway 2) along Warner Avenue would be closed, and the third driveway (Driveway 3) would be maintained, designated for truck access only.

⁴ The project site is not in a major development area.

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Grand Avenue and Warner Avenue (#7): As part of the project, one additional through lane will be provided in the westbound direction on Warner Avenue. This would result in two left turn lanes, three through lanes, and one right turn lane in the westbound direction.

Maple Street and Warner Avenue (#11): In the existing condition, Maple Street and Warner Avenue is an unsignalized intersection. As part of the project this intersection would be signalized and the existing Class I bikeway crossing would be rerouted to this location.

Unsignalized Intersections: A raised landscaped median would be installed along Warner Avenue between Main Street and Grand Avenue as part of the project, with median breaks provided exclusively at signalized intersections. Unsignalized intersections where left turn movements are currently permitted would be restricted to right-turn-in and right-turn-out movements only. This includes the Warner Avenue intersections with Cypress Avenue, Orange Avenue, Oak Street, Kilson Drive, Hickory Street, Halladay Street north of Warner Avenue, Cedar Street, Evergreen Street, and all other access driveways within the corridor.

IMPACT 5.10-1: THE PROPOSED WIDENING OF WARNER AVENUE WOULD IMPROVE ROADWAY AND CIRCULATION PERFORMANCE ON THE WIDENED SEGMENTS OF WARNER AVENUE. [THRESHOLD T-1 (PART)]

Impact Analysis:

Existing plus Project Traffic Conditions

Daily traffic volumes and LOS in existing (2012) without-project and with-project conditions are shown below in Table 5.10-7. As shown, in 2012 with-project conditions, daily traffic volumes are estimated to increase to 29,833 vehicles per day on Warner Avenue between Main Street and Halladay Street, an increase of 1,193 vehicles per day, or about 4.2 percent, over existing traffic volume. The estimated increase in traffic volume on Warner Avenue between Standard Avenue and Grand Avenue would be 1,106 vehicles per day, or about 4.6 percent above existing volume. The project would increase roadway capacity and improve Warner Avenue traffic flow in comparison to existing conditions.

**Table 5.10-7
2012 Segment LOS**

Segment Limits	Without Project			With Project		
	Lane Configuration	Daily Volume	LOS	Lane Configuration	Daily Volume	LOS
Warner Av between Main St & Halladay St	4 lanes undivided	28,640	F	6 lanes divided	29,833	A
Warner Av between Standard Ave & Grand Ave	4 lanes undivided	23,814	D	6 lanes divided	24,920	A

Source: IBI 2014.

Opening Year 2020 Conditions

As shown in Table 5.10-8, without the project in year 2020, the arterial segment level of service on Warner Avenue between Main Street and Halladay Street and Standard Avenue and Grand Avenue are both projected to be LOS F. With project implementation, however, arterial segment LOS would improve to LOS A for both segments. The project would have a favorable impact on traffic conditions on Warner Avenue in 2020 Opening Year conditions.

**Table 5.10-8
2020 Segment LOS**

Segment Limits	Without Project			With Project		
	Lane Configuration	Daily Volume	LOS	Lane Configuration	Daily Volume	LOS
Warner Avenue between Main St. & Halladay St	4-lanes undivided	29,091	F	6 lanes divided	29,164	A
Warner Avenue between Standard Ave & Grand Ave	4 lanes undivided	26,369	F	6 lanes divided	27,030	A

Source: IBI 2014.

Horizon Year 2035 Conditions

Anticipated Transportation Improvements

The traffic modeling of the future without-project and with-project conditions incorporates roadway network modifications that are expected to be in place by year 2035. All of the following modifications are outside of the traffic study area.

- Alton Overcrossing: The four-lane overcrossing will pass over SR-55 and connect the Alton Avenue segment at Standard Avenue in Santa Ana with Alton Parkway at Daimler Street in Irvine. Drop ramps will be provided from the overcrossing facility to the SR-55 high occupancy vehicle (HOV) lanes. This improvement will occur south of the study area boundary.
- Santa Ana Blvd Extension: This project extends Santa Ana Boulevard as a four-lane primary arterial from Raitt Street to the west along the Pacific Electric right-of-way to SR-22. This improvement would occur north and west of the study area boundary.
- Bristol Street Widening: The 3.9-mile segment of Bristol Street between Warner Avenue and Memory Lane will be widened from four undivided lanes to six divided lanes. This improvement will occur west of the study area boundary.
- Tustin Ranch Road Extension: This project will extend Tustin Ranch Road as a six-lane major arterial between Irvine Center Drive and Warner Avenue. This improvement will occur in the City of Tustin, east of the study area boundary.
- Warner Avenue Extension: Warner Avenue will be extended as a six-lane major arterial between Tustin Ranch Road and Red Hill Avenue. This improvement will occur in the City of Tustin, east of the study area boundary.



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The OCTAM network for 2035 also includes the following improvements outside of the traffic study area:

- Freeway improvement projects (Renewed Measure M Early Action Plan)⁵
- Transit Improvements (Balanced Alternative of OCTA's LRTP).⁶

2035 Forecast Warner Avenue Operation

As shown in Table 5.10-9, without the project the arterial segment level of service on Warner Avenue between Main Street and Halladay Street and Standard Avenue and Grand Avenue are both projected to be LOS F in year 2035. Unacceptable levels of service on Warner Avenue in 2035 without-project and 2020 without-project conditions show that the proposed widening of Warner Avenue is needed to accommodate forecast traffic growth. With project implementation, arterial segment LOS would improve to LOS A and B for both segments.

**Table 5.10-9
2035 Segment LOS**

Segment Limits	Without Project			With Project		
	Lane Configuration	Daily Volume	LOS	Lane Configuration	Daily Volume	LOS
Warner Avenue between Main St. & Halladay St	4-lanes undivided	29,955	F	6 lanes divided	30,174	A
Warner Avenue between Standard Ave & Grand Ave	4 lanes undivided	31,921	F	6 lanes divided	34,278	B

Source: IBI 2014.

IMPACT 5.10-2 THE PROPOSED PROJECT WOULD NOT RESULT IN TRAFFIC THAT EXCEEDS LEVEL OF SERVICE THRESHOLDS AT STUDY AREA INTERSECTIONS [THRESHOLD T-1 (PART)].

2012 Plus Project Conditions

A summary of the AM and PM peak hour level of service analysis results for the existing year 2012 without project and with project conditions is included in Table 5.10-10. The proposed project would result in improved operations at two of the study intersections—Warner Avenue at Main Street and at Halladay Street—during both the AM and PM peak hours. All intersections are forecast to operate at an acceptable LOS C or better with the project during AM peak hours.

⁵ The nearest freeway improvement to the project site in the Renewed Measure M Early Action Plan is addition of one lane in each direction to the segment of SR-55 between the Interstate 5 (I-5) and I-405 freeways. Environmental documentation for that project is anticipated to be completed in early 2014 (OCTA 2013).

⁶ The nearest transit improvement to the project site specified in the LRTP Preferred Plan Project List is a proposed bus rapid transit (BRT) service on Bristol Street and State College Boulevard between Brea Mall and Irvine Transportation Center (OCTA 2011).

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**Table 5.10-10
2012 Intersection LOS**

Intersection		Without Project				With Project				Change in V/C (Delay)	
		AM		PM		AM		PM		AM	PM
		V/C (Delay)	LOS	V/C (Delay)	LOS	V/C	LOS	V/C	LOS		
1	Main St & Edinger Ave	0.786	C	0.842	D	0.786	C	0.842	D	0.000	0.000
2	Grand Ave & Edinger Ave	0.697	B	0.791	C	0.697	B	0.791	C	0.000	0.000
3	Flower St & Warner Ave	0.780	C	0.838	D	0.780	C	0.790	D	0.000	- 0.048
4	Main St & Warner Ave	0.726	C	0.836	D	0.648	B	0.688	B	- 0.078	- 0.148
5	Halladay St & Warner Ave	0.564	A	0.582	A	0.445	A	0.482	A	- 0.119	- 0.100
6	Standard Ave & Warner Ave	0.433	A	0.519	A	0.436	A	0.554	A	0.003	0.035
7	Grand Ave & Warner Ave	0.465	A	0.648	B	0.450	A	0.600	B	0.015	- 0.048
8	Wright St & Warner Ave	0.339	A	0.497	A	0.339	A	0.497	A	0.000	0.000
9	Main St & Dyer Rd	0.735	C	0.862	D	0.735	C	0.862	D	0.000	0.000
10	Grand Ave & Dyer Rd	0.685	B	0.686	B	0.685	B	0.686	B	0.000	0.000
11	Maple St & Warner Ave*	(1.5)	A	(1.1)	A	0.333	A	0.427	A	n/a	n/a

Source: IBI 2014.

*As part of the project this intersection would be signalized.



The proposed project results in a 1 percent increase in PM Peak Hour V/C ratio at one of the study intersections, Warner Avenue at Standard Avenue; however, the intersection would continue to operate at LOS A and is therefore not considered a significant impact. All intersections are forecast to operate at LOS D or better in with-project conditions during PM peak hours.

Future Year 2020 Traffic Conditions

A summary of the AM and PM peak hour level of service analysis results for the opening year 2020 without project and with project condition is included in Table 5.10-11.

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**Table 5.10-11
2020 Intersection LOS**

	Intersection	Without Project				With Project ¹				Change in V/C (Delay) ¹	
		AM		PM		AM		PM		AM	PM
		V/C (Delay)	LOS	V/C (Delay)	LOS	V/C	LOS	V/C	LOS		
1	Main St & Edinger Ave	0.871	D	0.926	E	0.866	D	0.931	D	-0.005	0.005
2	Grand Ave & Edinger Ave	0.788	C	0.880	D	0.788	C	0.884	D	0.000	0.004
3	Flower St & Warner Ave	0.809	D	0.910	E	0.828	D	0.870	E	-0.040	0.015
4	Main St & Warner Ave	0.798	C	0.852	D	0.741	C	0.710	C	-0.057	-0.142
5	Halladay St & Warner Ave	0.620	B	0.649	B	0.517	A	0.574	A	-0.103	-0.075
6	Standard Ave & Warner Ave	0.560	A	0.521	A	0.555	A	0.595	A	-0.005	0.074
7	Grand Ave & Warner Ave	0.636	B	0.818	D	0.634	B	0.767	C	-0.002	-0.051
8	Wright St & Warner Ave	0.418	A	0.682	B	0.426	A	0.696	B	0.008	0.014
9	Main St & Dyer Rd	0.832	D	0.935	E	0.825	D	0.937	E	-0.007	0.002
10	Grand Ave & Dyer Rd	0.692	B	0.699	B	0.698	B	0.701	C	0.006	0.002
11	Maple St & Warner Ave ²	(2.6)	A	1.4 s ⁽¹⁾	A	0.354	A	0.418	A	n/a	n/a

Source: IBI 2014.

¹ Significant impacts are shown in *italicized boldface*

² The project would signalize this intersection.

AM Peak Hour

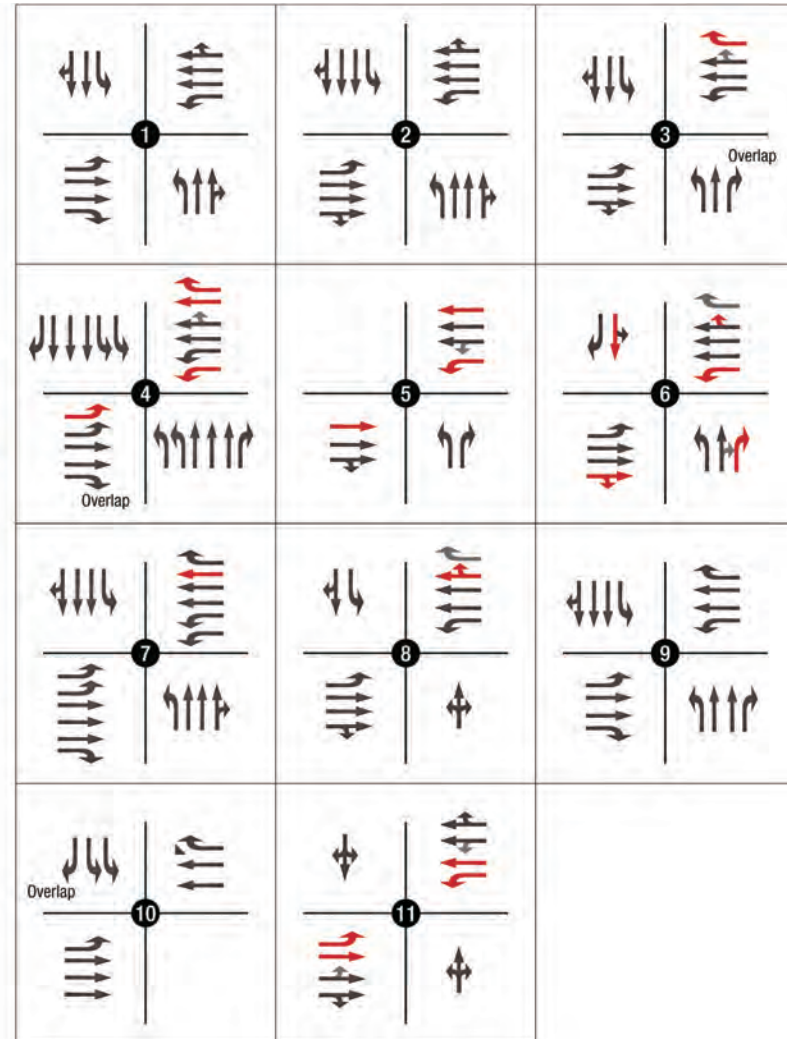
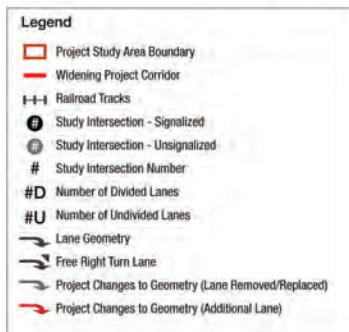
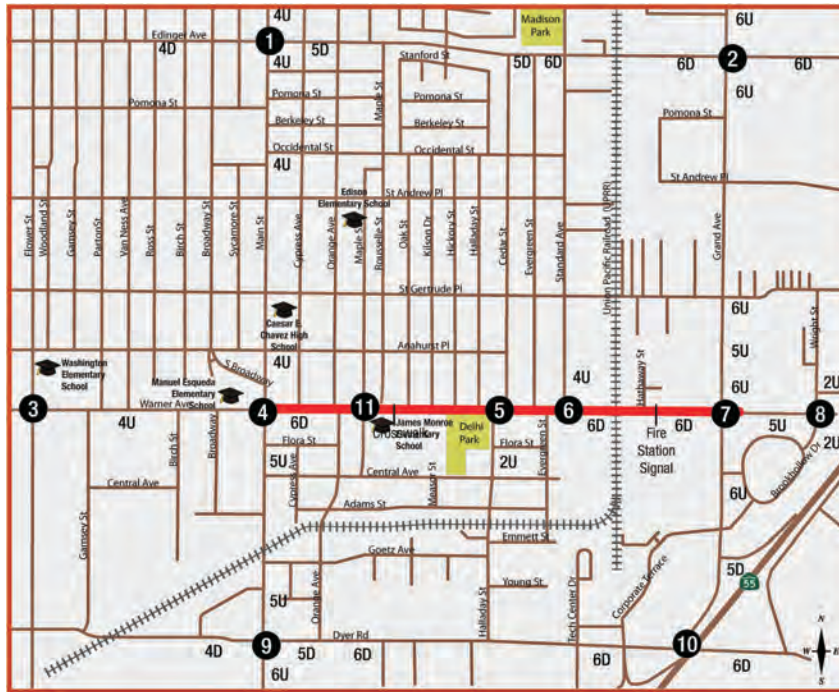
The proposed project would result in improved operations at five of the study intersections during the AM peak hour.⁷ Favorable impacts are not classified as significant or less than significant, because Threshold T-1 asks whether a project would *conflict* with an applicable plan, ordinance, or policy. The proposed project results in a 1 percent increase in volume-to-capacity (V/C) ratio at one of the study intersections, Warner Avenue at Flower Street; however, the intersection would continue to operate at an acceptable level of service and is therefore not considered significant.

PM Peak Hour

The proposed project would result in improved operations at four of the study intersections during the PM peak hour. The proposed project results in a 1 percent increase in volume-to-capacity (V/C) ratio at two of the study intersections. Both of these intersections—Warner Avenue at Flower Street and at Grand Avenue— would continue to operate at an acceptable level of service, and thus no significant impact would occur at those two intersections.

⁷ Main Street at Edinger Avenue, Warner Avenue, and Dyer Road; and Warner Avenue at Halladay Street and at Grand Avenue.

Roadway and Intersection Geometry with Project



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Horizon Year 2035 Traffic Conditions

A summary of the AM and PM peak hour level of service analysis results for the year 2035 without and with project conditions is included in Table 5.10-12.

**Table 5.10-12
2035 Intersection LOS**

	Intersection	Without Project				With Project ¹				Change in V/C (Delay) ¹	
		AM		PM		AM		PM		AM	PM
		V/C (Delay)	LOS	V/C (Delay)	LOS	V/C	LOS	V/C	LOS		
1	Main St & Edinger Ave	0.920	E	0.974	E	0.911	E	0.983	E	-0.009	0.009
2	Grand Ave & Edinger Ave	0.844	D	0.928	E	0.845	D	0.937	E	0.001	0.009
3	Flower St & Warner Ave	0.826	D	0.951	E	0.856	D	0.917	E	0.030	-0.034
4	Main St & Warner Ave	0.840	D	0.861	D	0.796	C	0.730	C	-0.044	-0.131
5	Halladay St & Warner Ave	0.648	B	0.700	B	0.563	A	0.628	B	-0.085	-0.072
6	Standard Ave & Warner Ave	0.641	B	0.547	A	0.628	B	0.634	B	-0.006	0.087
7	Grand Ave & Warner Ave	0.780	C	1.036	F	0.778	C	0.946	E	-0.002	-0.090
8	Wright St & Warner Ave	0.474	A	0.811	D	0.487	A	0.840	D	0.013	0.029
9	Main St & Dyer Rd	0.898	D	0.978	E	0.884	D	0.910	E	-0.014	-0.068
10	Grand Ave & Dyer Rd	0.697	B	0.705	C	0.704	C	0.701	C	0.007	-0.004
11	Maple St & Warner Ave ²	2.6 s ⁽¹⁾	A	1.4 s ⁽¹⁾	A	0.380	A	0.430	A	n/a	n/a

Source: IBI 2014

¹ Significant impacts are shown in *italicized boldface*

² The project would signalize this intersection.



AM Peak Hour

The proposed project improvements are expected to provide acceptable operations (LOS D or better) at 10 of the 11 study intersections in the AM peak hour along the project corridor through the horizon year. The intersection of Main Street and Edinger Avenue (#1) is forecast to operate at an unacceptable level of service (LOS E) in the without-project condition. This intersection continues to operate at LOS E in the with-project condition; however, the volume-to-capacity improves by 0.009.

PM Peak Hour

The proposed project improvements are expected to provide acceptable operations (LOS D or better) at 6 of the 11 study intersections along the project corridor in the PM Peak Hour through the horizon year. Five of the study intersections are forecast to operate at an unacceptable level of service E or worse, with or without the project.

No project-related AM or PM impacts are anticipated at the signalized intersections of Warner Avenue at Halladay Street, Standard Avenue, and Maple Street. These streets will serve as the primary access points into and out of the surrounding neighborhoods, and all three streets are anticipated to operate at LOS B or better in the AM and PM peak hours.

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IMPACT 5.10-3: PROJECT CONSTRUCTION MAY RESULT IN TEMPORARY IMPACTS TO LEVELS OF SERVICE AT WARNER AVENUE/MAIN STREET AND WARNER AVENUE/HALLADAY STREET INTERSECTIONS. [THRESHOLD T-1 [PART]]

Impact Analysis: Construction would be completed in linear segments so the entire length of Warner Avenue within the project limits is not disrupted at once. In addition, the number of intersecting cross-streets that require closure during construction would be minimized. This would reduce access challenges for residents who live on the north side of Warner Avenue. If a cross-street must be closed during construction, motorists could use a nearby open road. During demolition and construction, the four existing travel lanes on Warner Avenue would be narrowed to two lanes, one lane in each direction, along the side opposite the area of construction.

Five intersections were evaluated for construction impact using year 2020 without-project volumes and temporary loss of one traffic lane; see Table 5.10-13. The analysis determined that three studied intersections would continue to operate at acceptable LOS D or better and two intersections would operate at unacceptable LOS: Main Street and Warner Avenue at LOS E during PM peak hour, and Halladay Street and Warner Avenue at LOS F during PM peak hour. Additionally, because the Maple Street and Warner Avenue intersection is unsignalized, the delay would be worsened in the north and south directions (the reduction in delay shown in project construction conditions for the intersection of Warner Avenue and Maple Street in Table 5.10-13 does not reflect what is expected at the northbound and southbound approaches to that intersection). These impacts would be temporary, and traffic flow would improve once the construction is complete. In addition, it is anticipated that construction-related vehicle traffic and equipment movement would not occur during peak periods, and lane closures during peak periods would be minimized to the extent possible.⁸ Where lane closures during peak periods cannot be avoided, traffic would be managed to give priority to the direction that has the heaviest traffic. Short-term roadway closures would occur during removal and relocation of overhead electrical poles. During demolition and construction, vehicle, equipment, and materials staging and storage would be located on one or more of the acquired lots. No permanent equipment staging would occur in the active public right-of-way. Fencing around the construction staging area would ensure safety and separation of the public from construction equipment and materials.

**Table 5.10-13
Construction Impacts on Intersection Operation**

Intersection	Without Project				With Project ¹				Change in V/C (Delay) ¹	
	AM		PM		AM		PM		AM	PM
	V/C (Delay)	LOS	V/C (Delay)	LOS	V/C	LOS	V/C	LOS		
Main St & Warner Ave	0.798	D	0.852	D	0.752	C	0.909	E	0.046	0.057
Halladay St & Warner Ave	0.620	B	0.649	B	0.620	B	1.072	F	0	0.423
Standard Ave & Warner Ave	0.560	A	0.521	A	0.560	A	0.860	D	0	0.339
Grand Ave & Warner Ave	0.636	C	0.818	D	0.636	C	0.821	D	0	0.003
Maple St & Warner Ave ²	2.6 s	A	1.4 s	A	2.6 s	A	2.3 s	A	0	0.9 s

Source: IBI 2014.

¹ Significant impacts are shown in **italicized boldface**

² The project would signalize this intersection.

⁸ Construction work hours would be 7:00 AM to 8:00 PM Monday through Friday except federal holidays. Thus, movements of construction equipment and heavy trucks would be mostly limited to between the hours of 9:00 AM to 4:00 PM and 6:00 PM to 8:00 PM.

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A construction traffic management plan identifying construction traffic control requirements, traffic detours, and other necessary measures would be required (see Mitigation Measures).

IMPACT 5.10-4: THE PROJECT WOULD NOT RESULT IN HAZARDOUS CONDITIONS, CONFLICTING USES, OR INADEQUATE EMERGENCY ACCESS. [THRESHOLDS T-4 AND T-5]

Impact Analysis: The roadway segment between Grand Avenue and Main Street is generally straight and does not involve any sharp curves or steep slopes. The proposed project is in compliance with the roadway designation contained in the City's General Plan Circulation Element and in the MPAH. Changes to the existing lane geometry would accommodate the existing and future traffic and improve the performance of Warner Avenue.

Emergency Access

The actual roadway construction, including demolition, is expected to take up to 16 months or 4 months per quarter-mile segment, at which time the access to and from Warner Avenue for that segment would be restricted. Although the restricted use of Warner Avenue has the potential to adversely impact the area emergency access, at no time during construction would Warner Avenue be completely blocked, and other detour routes in the area are available to provide alternate access as necessary. Therefore, the project would not substantially reduce emergency access to the project site or surrounding neighborhoods.

Railroad Grade Crossing

UPRR Santa Ana Branch tracks cross Warner Avenue between Besson Lane and Standard Avenue; the crossing is identified as CPUC No. 001BK-519.16 and DOT No. 761248L. The California Public Utilities Commission (CPUC) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires CPUC approval for construction or alteration of crossings and grants the CPUC exclusive power on design, alteration, and/or closure of crossings in California.

CPUC General Order (GO) No. 88-B requires staff approval for alteration of existing public crossings. The City of Santa Ana would contact the CPUC Rail Crossings Engineering Section (RCES) staff to arrange a diagnostic meeting with representatives of the CPUC and UPRR to discuss any proposed changes on the crossing. The project would not make any changes to the crossing except to pave additional street right-of-way and paint bike lanes, and the project is not anticipated to increase hazards at this crossing. The proposed project would not conflict with the CPUC plans or policies or otherwise decrease the performance or safety of the rail facility.

IMPACT 5.10-5: THE PROJECT WOULD DEVELOP IMPROVED NON-MOTORIZED TRAVEL OPTIONS ALONG WARNER AVENUE. [THRESHOLD T-6 (PART)]

Impact Analysis: The City supports an integrated multimodal circulation system, in part by fostering patterns of land use and urban design that improve convenience and safety for pedestrians, bicyclists, and users of public transportation. Implementation of the proposed project would be consistent with the City's policy in that the proposed widening would provide sidewalks and bike lanes along the entire length of the project site.

The City adopted a Bikeway Master Plan in 1995 that provides comprehensive linkages to the City's major activity centers and regional bikeway routes. According to Exhibit 2, *Bikeway Master Plan of the*



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Circulation Element, the Warner Avenue segment between Flower Street and Pacific Electric Bicycle Trail is designated as Class II bike path but the segment east of the bike trail is not a classified bike path in the Bikeway Master Plan. However, the planned segments of bicycle paths within the project site have not been developed. The proposed widening, including bike lanes on Warner Avenue the full length of the project site, would provide bike lane connection between a Class I bikeway, Pacific Electric Bikeway and a Class II bikeway, Grand Avenue. Therefore, the proposed project would improve the overall bikeway connectivity and safety in the City, consistent with the City's alternative transportation policy.

Additionally, provision of safe, level, unobstructed sidewalks that are a consistent width (typically 5 to 7 feet) would be provided as part of the City's effort to improve the existing system of pedestrian facilities. The project would also improve safety for people in wheelchairs and people with strollers.

Because of the inherent pedestrian hazard, in California, it is not legal for people to cross any street at unmarked locations between immediately adjacent signalized crossings or where crossings are expressly prohibited. The raised center median would require people to cross Warner Avenue at a traffic signal where there are crosswalks. This is a significantly safer place to cross than between lights without the median.

IMPACT 5.10-6 PROJECT CONSTRUCTION MAY REQUIRE ADDITIONAL TEMPORARY SAFETY MEASURES TO ASSURE SAFE ROUTES TO SCHOOLS FOR ELEMENTARY SCHOOLS NEXT TO THE PROJECT SITE [THRESHOLDS T-4 (PART) AND T-6 (PART)]

Impact Analysis: There are two schools next to the project site: James Monroe Elementary School at 417 East Central Avenue along the south side of Warner Avenue near its intersection with Oak Street; and Manuel Esqueda Elementary School at 2240 South Main Street at the northwest corner of the intersection of Warner Avenue and Main Street (see Figure 3-3, *Existing Land Use*). Temporary changes to roadway and intersection configuration during project construction, including changes to crosswalks and pedestrian crossing signals, may require additional, temporary safety measures for students and other pedestrians during project construction.

IMPACT 5.10-7 THE PROJECT COULD REQUIRE TEMPORARY ALTERATIONS, INCLUDING RE-ROUTING, OF OCTA BUS SERVICES DURING PROJECT CONSTRUCTION; AND PERMANENT RELOCATION OF THE BUS STOP AT WARNER AVENUE AND STANDARD AVENUE. [THRESHOLD T-6 (PART)]

Impact Analysis: During project construction the four existing travel lanes on Warner Avenue would be narrowed to two lanes, one lane in each direction, along the side opposite the area of construction.

OCTA operates three bus routes along Warner Avenue: Route 72 operates all day on the whole length of the project site; Route 463 operates peak hours only on the whole length of the project site; and Route 55 operates all day on Warner Avenue between Halladay Street and Grand Avenue. Due to the proposed narrowing of Warner Avenue during construction, operation of transit buses on Warner Avenue may not be practicable. Buses stopped to load and unload passengers would block traffic; it is assumed that the two open lanes during construction would not be wide enough for vehicles to pass a bus stopped next to the side of the roadway. Buses also require concrete pads next to the roadway to load and unload passengers in wheelchairs. In the lane next to the construction area it may not be practicable to provide concrete pads for loading and unloading passengers in wheelchairs; in any case, it may not be possible to connect such pads to existing sidewalks with pavement for use by persons in wheelchairs.

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The proposed truck access reconfiguration and concrete access pad for the Cherry Aerospace facility could potentially impact bus operations at the existing Warner Avenue/Standard Avenue bus stop. Route 72 runs along Warner Avenue with approximately 45-60 minute headways between 5 am – 9 pm on weekdays. Route 55 operates on Warner Avenue at Standard Avenue with weekday peak-hour frequency of three buses per hour. Route 463 operates on Warner Avenue during weekday peak hours only, at a frequency of three buses per hour.

Therefore, project construction could require temporary alteration, which may include rerouting, of OCTA bus routes serving Warner Avenue between Main Street and Grand Avenue. Construction of the proposed truck access reconfiguration and concrete access pad for the Cherry Aerospace facility would require permanent relocation of the OCTA bus stop for eastbound Route 72, which is now between Cherry Aerospace Driveways 1 and 2. Coordination with OCTA would be required for addressing temporary changes to bus routes operating on the affected segment of Warner Avenue, and in choosing a new permanent bus stop location for the existing stop next to Cherry Aerospace.

IMPACT 5.10-8 THE PROPOSED RAISED MEDIAN IN WARNER AVENUE WOULD REQUIRE RECONFIGURATION OF THE CHERRY AEROSPACE DRIVEWAY AND TRUCK ACCESS THAT COULD IMPACT THE INTERSECTION OF STANDARD AVENUE AND WARNER AVENUE OR ADJACENT STUDY AREA INTERSECTIONS. [THRESHOLD T-1 (PART)]

The proposed raised median in Warner Avenue would preclude Cherry Aerospace delivery trucks to park along the center median. The City has coordinated with Cherry Aerospace and provided a preliminary design to modify the Standard Avenue facility driveway (Driveway 1) to provide two-way access and to provide for a truck turn-out at Standard Avenue. The proposed improvements are described in the Cherry Aerospace Technical Memorandum (Appendix L). Driveway 1 would be reconfigured to include 1 inbound lane and 3 outbound lanes (1 left-turn lane, 1 through lane and 1 right-turn lane). The second driveway (Driveway 2) along Warner Avenue would be closed, and the third driveway would be maintained and designated for truck access only.

A truck turn-out along eastbound Warner Avenue just east of Standard Avenue would be improved to allow trucks to temporarily park their vehicle while getting clearance to enter the Cherry Aerospace parking lot through Driveway 3. The turn-out would allow trucks to safely wait, without impeding traffic, while checking in with the security booth and gaining access to the facility. The conceptual design is shown in Figure 5.10-5, *Proposed Cherry Aerospace Driveway Reconfiguration*.

A supplemental intersection traffic analysis was to evaluate the potential intersection impacts of the proposed access reconfiguration at Standard Avenue and Warner Avenue for Cherry Aerospace. The results as shown on Table 5.10-14, *Standard Avenue/Warner Avenue LOS Results – AM and PM Peak Hours*, indicate that the intersection would operate at acceptable levels of service with the proposed project and proposed reconfiguration of the Cherry Aerospace driveway. The technical memorandum also concludes that the driveway reconfiguration would not adversely impact the level of service at adjacent study intersections.



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**Table 5.10-14
Cherry Aerospace Intersection Operation**

Year	Without Project		With Project		Change in V/C Ratio	Significant Impact?
	V/C Ratio	LOS	V/C Ratio	LOS		
AM Peak Hour						
2012	0.519	A	0.436	A	-0.083	No
Opening Year 2020	0.560	A	0.555	A	-0.005	No
Horizon Year 2035	0.641	B	0.628	B	-0.013	No
PM Peak Hour						
2012	0.519	A	0.554	A	0.035	No
Opening Year 2020	0.521	A	0.595	A	0.074	No
Horizon Year 2035	0.547	A	0.634	B	0.087	No

5.10.4 Cumulative Impacts

Cumulative traffic impacts of the project are addressed above in Impacts 5.10-1 and 5.10-2 through the use of OCTAM Model to forecast 2020 and 2035 conditions, including forecast trips from cumulative projects and from regional growth. Implementation of the proposed project would result in short-term construction impacts but, overall, would improve long-term study area roadway conditions. No cumulative adverse impacts from project operation would occur. The proposed project would not generate any additional traffic volume and is intended to better accommodate existing and forecast traffic volumes. Widening of Warner Avenue is consistent with OCTA's MPAH and the City's General Plan Circulation Element. The proposed project is not part of a program of similar related projects; thus, project construction impacts would not be cumulative in nature.

5.10.5 Existing Regulations

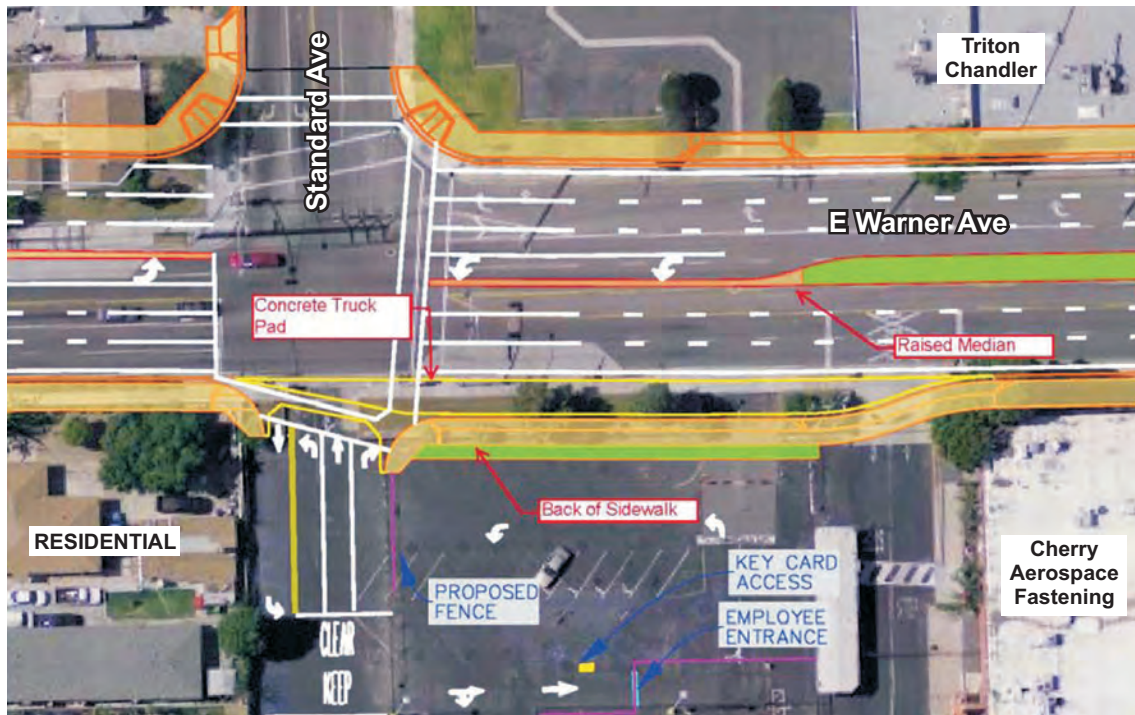
State

- Complete Streets Act of 2008 (Assembly Bill 1358, Government Code Sections 65040.2 and 65302)

Regional

- OCTA Master Plan of Arterial Highways (MPAH)
- OCTA Congestion Management Plan (CMP)

Proposed Cherry Aerospace Driveway Configuration



A. Proposed Driveway Reconfiguration

0 70
Scale (Feet)



B. Proposed Truck Turnout

0 70
Scale (Feet)



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5.10.6 Level of Significance before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.10-1, 5.10-2, 5.10-4, 5.10-5, and 5.10-8.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.10-3 Project construction would temporarily adversely impact traffic conditions at the intersections of Warner Avenue with Main Street and with Halladay Street.
- Impact 5.10-6 Project construction could temporarily require temporary additional safety measures to assure safe routes to schools for two schools next to the project site.
- Impact 5.10-7 Project construction could require temporary alteration of OCTA bus services within the project site.

5.10.7 Mitigation Measures

Impact 5.10-3

T-1 Any temporary lane closures shall be limited to non-rush-hour periods. Directions to alternative routes shall be provided to drivers, bicyclists, and pedestrians during road closures. Road closures shall not last over 24 hours without advance written approval of the Executive Director of the City of Santa Ana Public Works Agency or designee.

T-2 Prior to the beginning of any utility relocation, demolition, or construction work, a detailed construction traffic control plan shall be prepared by a licensed civil engineer. The construction traffic control plan shall be based on the most recent version of the Greenbook: Standard Specifications for Public Works Construction; California Department of Transportation California Manual on Uniform Traffic Control Devices (state); Southern California Chapter of the American Public Works Association Work Area Traffic Control Handbook; and City Standard Provisions (local). The traffic control plan shall include extensive public outreach and public awareness through the use of mailers and notices in local papers and other publications.

Impact 5.10-6

T-3 The construction traffic control plan required by Mitigation Measure T-2 shall include addition of any needed temporary safety measures to the Safe Routes to Schools plans for James Monroe Elementary School and Manuel Esqueda Elementary School.

Impact 5.10-7

T-4 At least three months before the start of any project work that could impact the Warner Avenue roadway, concrete pads at existing bus stops in the project site, or sidewalks, the City of Santa Ana and the project traffic engineer shall coordinate with the Orange County Transportation Authority to specify any needed temporary alterations of service on OCTA Routes 55, 72, and 463. Such alterations may include rerouting bus routes off of Warner Avenue in the project site and permanent relocation of the bus stop at Standard Avenue and Warner Avenue due to the proposed truck turn-out for Cherry Aerospace.



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5.10.8 Level of Significance after Mitigation

Impact 5.10-3

Implementation of Mitigation Measures T-1 and T-2 would reduce construction traffic impacts to the intersections of *Warner Avenue* with Main Street and Halladay Street. However, whether the mitigation measures would reduce construction traffic impacts to less than significant levels cannot be forecast. Therefore, construction traffic impacts would be significant and unavoidable.

Impact 5.10-6

Implementation of Mitigation Measure T-3 would reduce impacts to safe routes to schools to less than significant.

Impact 5.10-7

Implementation of Mitigation Measure T-4 would reduce potential impacts to OCTA bus services to less than significant.

Traffic Impact Study Supplemental Analysis Conclusions

The supplemental analysis conducted in January 2015 found no significant change in the impact conclusions (see Appendix L). The updated count data provided by the City show a decrease in ADT along the following segments:

- Warner Ave: Main St to Halladay St
- Warner Ave: Main St to Flower St
- Warner Ave: Grand Ave to Pullman St
- Grand Ave: Edinger Ave to Warner Ave
- Grand Ave: Warner Ave to Dyer Rd

The decreases in ADT along these segments either improve or maintain LOS compared to data collected in 2012. The decrease in ADT along Warner Avenue should also help alleviate intersection conditions during the Year 2020 Project Construction scenario. The following segments experience an increase in ADT:

- Warner Ave: Standard Ave to Grand Ave
- Main St: Edinger Ave to Warner Ave
- Main St: Warner Ave to Dyer Rd
- Dyer Rd: Main St to Grand Ave

Most of the increases are minimal and range from 2.5 percent to 7.5 percent between 2012 and 2013, with LOS remaining the same in both the Without Project and With Project conditions. Overall, the project improves operations at intersections and no significant traffic impacts or unacceptable levels of service were identified for intersections located within these segments in the With Project or Project Construction phases. Consequently, the roadway segment locations with increases in ADT volumes are not anticipated to experience any significant traffic impacts, which is consistent with the conclusions of the traffic study.

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The segment of Main Street between Warner Avenue and Dyer Road experiences an increase of approximately 15 percent in ADT, and results in an unacceptable LOS E in the Horizon Year 2035 Without Project and With Project scenarios. However, this increase in LOS does not result in a significant traffic impact because there is no forecast change in ADT between the Without Project and With Project condition. This change in ADT may result in intersection volume-to-capacity (V/C) changes at the study intersections of Main Street and Warner Avenue and Main Street and Dyer Road. Main Street and Warner Avenue is forecast to operate at LOS C in the Horizon Year 2035 With Project scenario during both peak hours. Main Street and Dyer Road is forecast to operate at LOS D during the AM Peak hour and LOS E during the PM Peak hour. However, the project results in improvement in intersection V/C at both intersections, therefore, it is anticipated that no significant project impact would result at these locations from the increase in ADT volumes.

The updated count data provided for Edinger Avenue between Main Street and Grand Avenue, a CMP designated arterial shows a decrease in ADT, with levels of service remaining the same. No additional significant traffic impacts are anticipated as a result of the updated traffic count data.



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5.11 UTILITIES AND SERVICE SYSTEMS

Utilities and service systems include water supply and distribution systems; wastewater (sewage) conveyance and treatment; storm drainage systems; solid waste generation; and energy use.

Water supply, wastewater treatment capacity, and landfill capacity pertaining to the project are addressed in the Initial Study, included as Appendix A of this Draft EIR. Therefore, only storm drainage systems are addressed in this section.

5.11.1 Environmental Setting

Storm Drainage Systems

The project site is in the Santa Ana River Watershed, which covers 2,800 square miles of mountains, foothills, and valleys in southwestern California, including parts of Los Angeles, Riverside, San Bernardino, and Orange counties. The Santa Ana River originates in the San Bernardino Mountains and flows in a generally southwesterly direction for over 100 miles until it discharges into the Pacific Ocean. The site is in the East Coast Plain of the Lower Santa Ana River Watershed; the East Coast Plain spans much of central and south-central Orange County (CNRA; Cal/EPA 2007).

Storm drains in Warner Avenue discharge to the Santa Ana Delhi Channel near the intersection of Warner Avenue and Flower Street, about 0.5 mile west of the west end of the project site. The capacities of storm drains in segments of Warner Avenue in the project site are listed below in Table 5.11-1. As shown in previous Figure 5.6-3, *Regional Drainage* the Santa Ana Delhi Channel extends southward and discharges into Upper Newport Bay about 4.4 miles south of the project site; Newport Bay discharges into the Pacific Ocean (OC Watersheds 2013). The Santa Ana Delhi Channel near Warner Avenue is a reinforced concrete rectangular channel 32 feet wide at its base and 12 feet deep (OCFCD 2000).

Existing underground storm drains in Warner Avenue in the project site are considered inadequate to handle existing runoff, and storm events over the last several years have generated significant flooding onsite. Adequacy of drainage capacity was assessed for a 10-year storm, as set forth in the Orange County Local Drainage Manual. One 12-foot travel lane in an arterial street must remain clear for traffic in each direction, using the 10-year storm.

Regulatory Setting

Water quality requirements for discharges to municipal storm drainage systems are set forth in the General Construction Permit, Order No. 2009-0009-DWQ, issued by the State Water Quality Control Board; and the Municipal Separate Storm Sewer System (MS4) Permit, Order No. R8-2009-0030, issued by the Santa Ana Regional Water Quality Control Board. Both permits are pursuant to National Pollution Discharge Elimination System (NPDES) regulations implementing the federal Clean Water Act.

5.11.2 Thresholds of Significance

According to CEQA Guidelines Appendix G, a project would normally have a significant effect on the environment if the project:

- USS-1 Would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.



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- USS-2 Would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- USS-3 Would require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- USS-4 Would not have sufficient water supplies available to serve the project from existing entitlements and resources, and new and/or expanded entitlements would be needed.
- USS-5 Would result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- USS-6 Would be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
- USS-7 Would not comply with federal, state, and local statutes and regulations related to solid waste.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold USS-1 (Water quality requirements)
- Threshold USS-2 (Water treatment and wastewater treatment capacity)
- Threshold USS-4 (Water supplies)
- Threshold USS-5 (Wastewater treatment capacity)
- Threshold USS-6 (Landfill capacity)
- Threshold USS-7 (Laws and regulations governing solid waste disposal)

These impacts will not be addressed in the following analysis.

5.11.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

The project would relocate all overhead power transmission poles and lines, street light poles, and gas and water valves along Warner Avenue to align with the new right-of-way. No disruption of services is anticipated. Underground utilities would remain in place. All relocation would take place concurrently with roadway widening construction.

IMPACT 5.11-1: THE PROJECT WOULD INSTALL EXPANDED STORMWATER DRAINAGE FACILITIES IN WARNER AVENUE IN PARTS OF THE PROJECT SITE. [THRESHOLD USS-3]

Impact Analysis: As described in Section 5.6, *Hydrology and Water Quality*, the properties lining the project corridor include a mixture of residential, commercial, and industrial, with longitudinal grades along the street typically running between 0.2 percent to 0.5 percent draining toward the south and west. Storm drain piping conveys runoff to the existing OCFCD Facility F01, also known as the Santa Ana Delhi

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Channel. The Drainage Study indicates that the improvements to the project area would have a negligible impact to the amount of impervious areas of the adjacent drainage basins. Drainage system improvements that would be installed as part of the project would increase the street's volume capacity to carry storm runoff. Proposed upgrades to the storm drainage in the project site are listed below in Table 5.11-1.

**Table 5.11-1
Proposed Upgrades to Storm Drainage System**

Pipe Reach, Location, and Type	Capacity Needed, cubic feet per second (cfs)	Existing Capacity, cfs	Existing Deficiency, cfs	Proposed Upgrade	Upgrade Capacity, cfs
4706-4707 Grand Avenue Reinforced Concrete Box (RCB), 8 feet by 6 feet	396.36	396.41	None	None	Not applicable
4705-4706 Grand Avenue to Union Pacific Railroad Tracks RCB, 8 feet by 6 feet	355.41	396.41	None	None	Not applicable
3826-3834 Standard Avenue to Halladay Street Reinforced Concrete Pipe (RCP), 27 inches	128.72	15.11	113.61	66-inch pipe	164.35
3834-3845 Evergreen Street to Halladay Street RCP, 27 inches	145.85	14.79	131.06	66-inch pipe	160.89
3845-3805 Halladay Street to Rousselle Street RCP, 27 inches	189.36	16.61	172.75	72-inch pipe	227.91
3805-3733 Rousselle Street to Maple Street RCP, 27 inches	1,110.73	168.57	942.16	11-foot x 8-foot reinforced concrete box (RCB)	1,141.97
3733-3739 Maple Street to Orange Avenue RCP, 60 inches	1,123.07	258.98	864.09	11-foot x 8-foot RCB	1,208.03
3739-3745 Orange Avenue to Cypress Avenue RCP, 60 inches	1,150.36	241.89	908.47	11-foot x 9-foot RCB	1,327.15
3745-3746 Cypress Avenue to Main Street RCP, 60 to 66 inches	1,167.79	192.62	975.17	13-foot x 9-foot RCB	1,310.51
3746-3746 Main Street RCP, 66 to 69 inches	1,167.79	146.31	1,021.48	13-foot x 9-foot RCB	1,310.51

Source: IBI Group 2009a.



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As shown above in Table 5.11-1, after installation of proposed storm drain improvements there would be adequate storm drainage capacity along the entire project site from Main Street to Grand Avenue. Storm drain impacts would be less than significant.

The following utility companies have facilities within the project limits: electric power lines – Southern California Edison; gas lines - Southern California Gas Company; telephone and telecommunication lines - AT&T, MCI/Verizon, Mpower Communications, Airtouch Cellular, and Time Warner Cable. These utility companies do not have any facilities along Warner Avenue between Main Street and Grand Avenue: Time Warner Telecom, Qwest, XO Communications and Abovenet. Most of the utilities are aligned longitudinally paralleling the centerline of Warner Avenue. For purposes of the preliminary design of the planned roadway widening, it is assumed that subsurface utilities would be protected in place and the surface or above surface facilities would be relocated or adjusted to grade, where necessary. The project would not require new or expanded utility services beyond its existing and forecast supplies. Impacts would be less than significant.

5.11.4 Cumulative Impacts

Cumulative developments in the Lower Santa Ana River Watershed would increase impervious areas in the watershed, resulting in increases in runoff volumes and flow rates. Thus, other developments could have substantial adverse impacts on storm drainage capacity and flooding.

Cumulative projects, like the proposed project, would be required to infiltrate, retain, or biotreat runoff from an 85th percentile storm, which is roughly equivalent to a two-year storm. Cumulative projects would be required to maximize amount of permeable areas onsite, conserve natural areas, and minimize changes to predevelopment hydrology, and cumulative impacts concerning storm drainage systems would be less than significant. The proposed project would not contribute to significant cumulative impacts.

5.11.5 Existing Regulations and Standard Conditions

Federal

- United States Code, Title 33, Sections 1251 et seq.: Clean Water Act
- Code of Federal Regulations Title 40 Parts 122 et seq.: National Pollutant Discharge Elimination System (NPDES)

State

- California Water Code Sections 10610 et seq.: Urban Water Management Planning Act

City of Santa Ana

- Municipal Code Sections 39-105 et seq.: Water conservation measures
- Municipal Code Section 41-1503: Landscape water use standards

5.11.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the Impact 5.11-1 would be less than significant.

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5.11.7 Mitigation Measures

No mitigation measures are required.

5.11.8 Level of Significance After Mitigation

Impacts would be less than significant.



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6. *Significant Unavoidable Impacts*

Chapter 1, *Executive Summary*, contains Table 1-1, which summarizes the impacts, mitigation measures, and levels of significance before and after mitigation. While mitigation measures would reduce the level of impact, the following impacts would remain significant, unavoidable, and adverse after mitigation measures are applied:

Noise

The use of heavy construction equipment during project construction would have the potential to cause excessive noise levels for an extended duration at noise-sensitive uses in the vicinity of the project site. A significant noise impact would occur if the noise increase at a sensitive receptor is greater than 1.0 dBA and results in a level greater than 65 dBA CNEL.

Future ambient noise would range from 55.7 to 73.9 dBA CNEL. During project construction the increase in noise over existing would be between 0.6 and 4.7 dBA. Eight homes would experience a noise level increase over 1.0 dBA due to the project and would be exposed to exterior noise levels over 65 dBA, which would have the potential to cause interior noise levels to be above 45 dBA CNEL threshold. Therefore, construction noise would be significant. To reduce temporary construction noise at the second row of homes north of the project site, Mitigation Measure N-3 would require construction vehicles and equipment to be properly maintained and stored as far as possible from adjacent residents and James Monroe Elementary School. Additionally Mitigation Measure N-4 would require the construction of the permanent walls as soon as practicable. Even with incorporation of the required mitigation measures, noise levels during construction would not be reduced to less than significant levels; therefore, this impact would remain significant and unavoidable.



Transportation and Traffic

Project construction would have substantial temporary traffic impacts to the intersections of Warner Avenue with Main Street and Halladay Street, which would operate at unacceptable LOS—Main Street and Warner Avenue at LOS E during PM peak hour, and Halladay Street and Warner Avenue at LOS F during PM peak hour. Implementation of Mitigation Measures T-1 and T-2 would reduce construction traffic impacts by limiting road closures and preparation of a construction traffic control plan. Even with implementation of mitigation, traffic impacts during construction would not be reduced to less than significant levels. Therefore, construction traffic impacts would be significant and unavoidable.

6. Significant Unavoidable Adverse Impacts

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7. *Alternatives to the Proposed Project*

7.1 **PURPOSE AND SCOPE**

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion of reasonable project alternatives that would “feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives” (CEQA Guidelines Section 15126.6). This chapter identifies potential alternatives to the proposed project and evaluates them, as required by CEQA.

Key provisions of the CEQA Guidelines on alternatives (Section 15126.6[a] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR.

- “The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly” (15126.6[b]).
- “The specific alternative of ‘no project’ shall also be evaluated along with its impact” (15126.6[e][1]).
- “The no project analysis shall discuss the existing conditions at the time the Notice of Preparation (NOP) is published, and at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives” (15126.6[e][2]).
- “The range of alternatives required in an EIR is governed by a ‘rule of reason’ that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project” (15126.6[f]).
- “Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)” (15126.6[f][1]).
- “For alternative locations, “only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR” (15126.6[f][2][A]).
- “An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative” (15126.6[f][3]).



7. Alternatives to the Proposed Project

For each project alternative, this analysis:

- Describes the alternative,
- Analyzes the impact of the alternative as compared to the proposed project,
- Identifies the impacts of the project that would be avoided or lessened by the alternative,
- Assesses whether the alternative would meet most of the basic project objectives,
- Evaluates the comparative merits of the alternative and the project.

Per the CEQA Guidelines Section 15126.6(d), additional significant effects of the alternatives are discussed in less detail than the significant effects of the project as proposed.

7.2 PROJECT OBJECTIVES

The following objectives have been established for the Warner Avenue Widening from Main Street to Grand Avenue and will aid decision makers in their review of the project, associated environmental impacts, and project alternatives.

1. Design and construct Warner Avenue to be consistent with the City's General Plan Circulation Element and County of Orange Master Plan of Arterial Highways (MPAH) designation as a major arterial.
2. Alleviate traffic congestion and delays within the Warner Avenue project limits.
3. Provide roadway capacity to accommodate existing and future traffic volumes.
4. Increase vehicular safety and reduce accidents by removing left turn hazards.
5. Comply with the Complete Streets Act by providing safe and accessible travel for bicyclist, pedestrians, and wheelchairs through new bike lanes and wider parkway and sidewalks.
6. Minimize property acquisition including public facilities.
7. Improve stormwater drainage and water quality.

7.3 SIGNIFICANT IMPACTS OF THE PROJECT

A primary consideration in defining project alternatives is their potential to reduce or eliminate project-related significant impacts and to meet most of the project objectives. The impact analysis in Chapter 5 of this Draft EIR concludes that the following impacts would remain significant and unavoidable for the proposed project even after implementation of feasible mitigation measures.

Noise

Short-term use of heavy construction equipment during project construction would have the potential to cause excessive noise levels for an extended duration at noise-sensitive uses (residential development, school and park) in the vicinity of the project site. Each construction phase would generate noise levels ranging from 82 to 87 dBA L_{eq} at 25 feet, and as noise diminishes with distance, these levels at 400 feet away from a given receptor would range from 58 to 63 dBA L_{eq} . For most of the construction duration, noise from heavy earthmoving equipment would be heard. Although the City's Municipal Code permits construction activities between 7:00 AM and 8:00 PM on weekdays and Saturdays, construction activities

7. Alternatives to the Proposed Project

for the Warner Avenue widening project would typically be limited to 7:00 AM to 5:00 PM, Monday through Friday. Because the operation of heavy earthmoving equipment would have the potential to substantially elevate noise levels at nearby residential areas for an extended duration over several months, construction noise is considered significant. To reduce temporary construction noise at the second row of homes north of the project site, Mitigation Measure N-3 would require construction vehicles and equipment to be properly maintained and stored as far as possible from adjacent residents and James Monroe Elementary School. Additionally Mitigation Measure N-4 would require the construction of the permanent walls as soon as practicable. Even with incorporation of the required mitigation measures, noise levels during construction would not be reduced to less than significant levels; therefore, this impact would remain significant and unavoidable.

Transportation and Traffic

Short-term project construction would have substantial temporary traffic impacts to the intersections of Warner Avenue at Main Street and Warner Avenue at Halladay Street. Two intersections would operate at unacceptable LOS: Main Street and Warner Avenue at LOS E during PM peak hour, and Halladay Street and Warner Avenue at LOS F during PM peak hour. Implementation of mitigation measures T-1 and T-2 would reduce construction traffic impacts by limiting road closures and preparation of a construction traffic control plan. Even with implementation of mitigation, traffic impacts during construction would not be reduced to less than significant levels. Therefore, construction traffic impacts would be significant and unavoidable.

7.4 PRELIMINARY ENGINEERING DESIGN PROCESS

The preferred design for the Warner Avenue widening evolved from the study of numerous alternatives considering optional road cross-sections and varying alignments. The basis for the conceptual engineering designs was the project objectives as listed above in Section 7.1.2. Preliminary alignments were prepared based on the cross-sections as detailed in Table 7-1, *Alternative Roadway Cross-Sections*. The cross-sections are named based on their total Right of Way (ROW) width in feet (100, 110, 120, etc.) and by the primary alignment based on either the existing centerline (Center) or on the ROW being extended primarily north (North) or (South). With the exception of the 100-foot ROW alternative which would not include bike lanes, each of the alternatives included 6 lanes, a raised median, bike lanes, and sidewalks and parkway on both sides of the roadway. The 100-foot ROW option included all of the components with the exception of bike lanes. As shown, the width of each of the features varies depending upon the cross-section.



**Table 7-1
Alternative Comparison – Cross-Section Detail**

	Existing Conditions (No Project)	Proposed Project (110 North)	100 ROW	110 ROW	120 ROW
Travel lanes	4	6	6	6	6
Lane width	10 to 12 feet	11-foot	11-foot	11-foot	12-foot
Raised median	none	14-foot	14-foot	14-foot	14-foot
Bike lanes	none	5-foot	none	5-foot	7-foot
Sidewalk & Parkway	4 to 10 feet	10-foot	10-foot	10-foot	10-foot
Total ROW	70 to 120 feet	110 feet	100 feet	110 feet	120 feet

7. Alternatives to the Proposed Project

Preliminary engineering designs were prepared for each the following cross-sections as listed in Table 7-1 and are depicted in Figures 7-1 through 7-6 (100 ROW, 110 Center, 110 South, 120 North, 120 Center, 120 South, respectively). The parcel acquisition required to implement each of the respective alternative designs is highlighted in the figures for both 'partial' and 'full' acquisitions. Full acquisitions indicate that any buildings on the parcel would also have to be removed. Table 7-2 details the required parcel acquisition for each of the preliminary roadway designs

7. Alternatives to the Proposed Project

**Table 7-2
Alternative Comparison – Parcel Acquisition**

	Proposed Project (110 North)		100 ROW		110 Center		110 South		120 North		120 Center		120 South	
	Full	Partial	Full	Partial	Full	Partial	Full	Partial	Full	Partial	Full	Partial	Full	Partial
Single-Family Residential	26	6	10	1	30	1	7	14	27	14	29	2	11	11
Multifamily Residential	1	--	--	--	1	7	8	--	1	4	4	4	8	--
Duplex Residential	4	--	--	--	4	--	2	1	2	--	4		3	--
Subtotal	31	6	10	1	35	8	17	15	30	18	37	6	22	11
Commercial/Retail/Restaurant														
Arco Station + Smog Pros	1		--	--	1	--	1	--	1	--	1	--	1	--
Waba Grill	--	2	--	2	--	2	--	--	2	--	--	2	--	--
Wells Fargo	2		--	2	2	--	2	--	2	--	2		2	--
Strip Commercial ¹	--	3	2	1	--	3	3	--	--	3	--	3	3	--
Subtotal	3	5	2	5	3	5	6	--	5	3	3	5	6	--
Public Facilities														
Delhi Park	--	--	--	1	--	1	--	1	--	--	--	1	--	1
James Monroe Ele. School	--	--	--	1	--	1	--	1	--	--	--	1	--	1
Fire Station	--	1	--	--	--	1	--	1	--	1	1	--	1	--
National Guard Armory	--	--	--	3	--	3	--	3	--	--	--	3	--	3
Maple Street Bike Path	--		--	1	--	1	--	1	--	--	--	1	--	1
Subtotal	--	1	--	6	--	7	--	7	--	1	1	6	1	6
Utilities²	1	3	1	1	1	2	1	1	2	1	1	2	--	1
Industrial/Office														
Triton Chandelier	--	1	--	1	--	1	--	--	1	--	--	1	--	--
SW Gill Inc.	--	1	--	1	--	1	--	--	1	--	--	1	--	--
Montroy Supply Company	--	1	--	--	--	1	--	--	1	--	1	--	--	--
Cherry Aerospace	--	1	--	--	--	1	1	--	--	1	1	--	1	--
Hardy & Harper	--	2	--	2	--	2	--	2	--	2	--	2	1	1
Heritage Paper	--	1	--	--	--	1	--	1	--	1	--	1	--	1
Offices east of Grand Avenue	--	5	--	--	--	5	--	5	--	5	--	5	--	5
Subtotal	--	12	--	4	--	12	1	8	3	9	2	10	2	7
TOTAL	35	27	13	17	39	34	25	31	40	32	44	29	31	25
GRAND TOTAL	62		30		66		56		72		73		56	

Note: This table is based on assessor parcel numbers (APNs) as listed in Chapter 4, *Project Description*. Note that multiple APN's (parcels) comprise some single properties and that one property may have multiple businesses or addresses. Based on Draft Relocation Impact Statement (see Appendix K of this EIR) the total acquisition would be 34 full and 22 partial properties.

¹ Includes Oli's Bakery, El Taco Vaquero, Shopping Center (hair salon, market, laundry).

² Includes parcels with utility poles, Union Pacific Railroad (UPRR) tracks, open space access easement.

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100' Widening Alternative



LEGEND

	FULL ACQUISITION		EXISTING PROPERTY LINES (PER RECORD MAPS AND PARCEL MAPS)		PROPOSED RIGHT OF WAY (100')
	PARTIAL ACQUISITION				

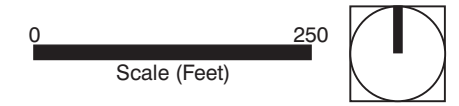
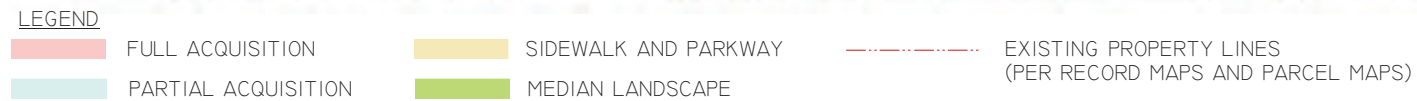
0 250
Scale (Feet)



7. Alternatives to the Proposed Project

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110' Center Widening Alternative



7. Alternatives to the Proposed Project

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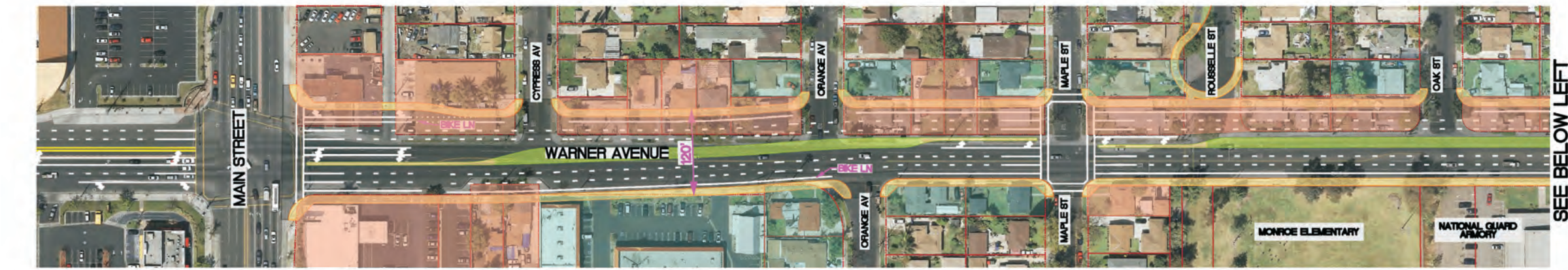
110' South Widening Alternative



7. Alternatives to the Proposed Project

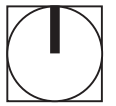
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120' North Widening Alternative



LEGEND

 FULL ACQUISITION	 SIDEWALK AND PARKWAY	 EXISTING PROPERTY LINES (PER RECORD MAPS AND PARCEL MAPS)
 PARTIAL ACQUISITION	 MEDIAN LANDSCAPE	



7. Alternatives to the Proposed Project

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120' Center Widening Alternative



7. Alternatives to the Proposed Project

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120' South Widening Alternative



7. Alternatives to the Proposed Project

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7. Alternatives to the Proposed Project

7.5 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

Five project alternatives were identified, considered, and rejected from further analysis as described below:

- Alternative Project Site
- Preliminary Engineering Alternatives
 - 100 ROW
 - 110 Center Alternative
 - 120 North Alternative
 - 120 Center Alternative

7.5.1 Alternative Project Site

CEQA requires that the discussion of alternatives focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project. The Warner Avenue Widening from Main Street to Grand Avenue project is site specific and cannot be located on another street.

7.5.2 Preliminary Engineering Alternatives

As detailed above in Section 7.2, *Preliminary Engineering Design Process*, in addition to the proposed project (110 North), six other preliminary conceptual designs were considered to relieve traffic congestion along this portion of Warner Avenue. Of these options four were rejected from further consideration: 100 ROW, 110 Center, 120 North, and 120 Center.

- **100 ROW** – The 100-foot right-of-way (100 ROW) is the narrowest ROW considered for the Warner Avenue widening and in comparison to the other alternatives is the only one that would not include bike lanes. This alternative would result in a significantly lower number of parcel acquisitions. However, this alignment would require partial acquisitions of a strip of land from Delhi Park, James Monroe Elementary School, and National Guard Armory, which are public facilities utilized by the surrounding communities. The 100-foot cross-section does not represent a typical width for a major arterial. The OCTA designate a typical width for a major arterial as 120 feet. As with the proposed project (110 North), the determining factor for consistency with OCTA’s Master Plan of Highways (MPAH) is the carrying capacity of the roadway. The “planned capacity” is determined by the number of through lanes. As long as there are three through lanes in each direction on Warner Avenue, the roadway is consistent with the MPAH. MPAH consistency is primary criterion for determining the City’s commitment to maintaining the integrity of the regional transportation system and consistency is required for eligibility for funding programs. However, another commitment is the provision of bike lanes and compliance with Complete Streets Act of 2008 (Assembly Bill 1358, California Government Code Sections 65040.2 and 65302). Compliance with this Act would ensure that all users of the transportation system are able to travel safely and conveniently on city streets and public right-of-way, including bicyclists. The 100 ROW Alternative would increase the carrying capacity of the roadways by developing additional traffic lanes, but would also result in a reduction in some public facility acreage and would not include essential bicycle lanes.



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- **110 Center** – Under this alternative, a modified Major Arterial 110-foot ROW would align the road widening on both sides of the existing centerline (see Figure 7-2, *110' Center Widening Alternative*). This alternative would increase parcel acquisition compared to the proposed project (110 North), requiring 39 full and 34 partial parcel acquisitions.

Compared to the proposed project this alternative would require removal of the fire station, two large industrial facilities (parcel and buildings) (Cherry Aerospace and Montroy Supply) and four additional residential parcels on the south side of Warner Avenue; along with the loss of some property at the James Monroe Elementary School, National Guard Armory, and Delhi Park; and partial loss at five more industrial parcels.

Although this alternative would have the same ROW width (110 feet), because the alignment is shifted to the south it would result in an increase in parcel acquisition and demolition and construction-related impacts (air quality, greenhouse gas emissions, noise, etc.). Because of the increase in parcel acquisition and building demolition there would be an increase in environmental impacts compared to the proposed project (110 North).

- **120 North** – Under this alternative the City of Santa Ana standard Major Arterial 120-foot ROW, would be implemented. Most of the widening would occur north of the existing centerline (see Figure 7-4, *120' North Widening Alternative*). This alternative would require 40 full and 32 partial parcel acquisitions in comparison to the proposed project's (110 North) 35 full and 27 partial. A primary difference between this alternative and the proposed project is the required acquisition of an additional full commercial parcel and three full industrial parcels. This alternative would also result in a sufficient increase in partial residential parcel acquisitions, and one less full residential acquisitions. Along several segments of Warner Avenue between Main Street and Standard Avenue, the second row of residential parcels (located behind the parcels fronting Warner Avenue) would require partial acquisition by the City. The reason for these acquisitions is due to the impacts to the existing driveway approaches along the joining cross-streets. To maintain driveway access, the existing driveway approaches would need to be shifted north to accommodate the new curb returns. In some instances, this may be a significant enough impact to these parcels to warrant the assumption of full acquisitions.

Similar to the proposed project (110 North), this alignment would avoid impacts to the James Monroe Elementary School, National Guard Armory, and Delhi Park, which are public facilities utilized by the surrounding communities.

This alternative would require similar roadway improvement impacts as the proposed project (110 North), but would increase land use impacts associated with the parcel acquisition and construction-related impacts associated with building demolition in comparison to the proposed project. It would not have the potential to reduce any significant environmental impacts.

- **120 Center** – Under this alternative the City of Santa Ana's standard 120-foot. Major Arterial ROW would be implemented. The road widening would occur on both sides of the existing centerline (see Figure 7-5, *120' Center Widening Alternative*). This alternative would require 44 full and 29 partial parcel acquisitions in comparison to 35 full and 27 partial acquisitions for the proposed project (110 North). This alternative would require the highest number of parcel and building acquisitions of the project alternatives.

7. *Alternatives to the Proposed Project*

Compared to the proposed project (110 North), this alignment would require the acquisition and removal of the fire station, two large industrial facilities (Cherry Aerospace and Montroy Supply), and six more residences, and the loss of some property at the James Monroe Elementary School, National Guard Armory, and Delhi Park. Partial residential parcel impacts would shift to the south side of Warner Avenue.

This alternative would require similar roadway improvement impacts as the proposed project (110 North), but would increase land use impacts associated with the parcel acquisition and construction-related impacts associated with building demolition in comparison to the proposed project. It would not have the potential to reduce any significant environmental impacts.

7.6 ALTERNATIVES CONSIDERED

Five project alternatives were identified and analyzed for relative impacts as compared to the proposed project (110 North):

- No Project Alternative
- 110 South Alternative
- 120 South Alternative
- Revised Construction Alternative

7.6.1 No Project Alternative

Section 15126.6(e) of the CEQA Guidelines requires the analysis of a No Project Alternative. The No Project analysis must discuss the existing condition, as well as what would be reasonably expected to occur in the foreseeable future if the project were not to be approved. Since the proposed project is a development project, Section 15126.6(e)(3)(B) of the CEQA Guidelines is directly applicable to the project:

If the project is...a development project on an identifiable property, the “no project” alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects that would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this “no project” consequence should be discussed. In certain instances, the “no project” alternative means “no build” wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project’s non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.

In this alternative, Warner Avenue from Main Street to Grand Avenue would not be widened and the existing roadway configuration and intersection traffic controls would remain. The new bicycle lanes and improved sidewalks included in the proposed project would not be constructed. No parcels would be acquired, and no buildings would be demolished. Drainage improvements included in the proposed project would not be installed.



7. Alternatives to the Proposed Project

7.6.1.1 Environmental Analysis

Air Quality

The No Project Alternative would not involve any demolition or construction and would not generate air pollutant emissions from such activities. In comparison to the proposed project, this alternative would potentially result in more vehicle idling and acceleration since congestion would not be relieved by the road widening. Short-term construction impacts would be eliminated. Therefore, this alternative would eliminate short-term impacts and result in an increase in long-term operational emissions compared to the proposed project. Overall, air quality impacts for this alternative would be similar to the proposed project.

Cultural Resources

Under this alternative no structures would be demolished and no ground disturbance would occur. Thus, no impacts to previously undiscovered archaeological resources would occur. Impacts of the proposed project to cultural resources were concluded to be less than significant after implementation of mitigation measures. The No Project Alternative, however, would reduce potential cultural resource impacts in comparison to the proposed project.

Geology and Soils

The project site is in a zone of required investigation for liquefaction. While liquefaction hazard onsite is unknown, shallow groundwater, one of the three factors contributing to liquefaction susceptibility, is present under the site. The proposed project would remove and replace the existing asphalt and road bed; the replacement road bed may reduce potential damage to the roadway from liquefaction. Therefore, without the road improvements, the No Project Alternative may have an increase in liquefaction hazard compared to the proposed project. Geology and soils impacts may be increased slightly under this alternative. Proposed project impacts would be less than significant after implementation of mitigation measures.

Greenhouse Gas Emissions (GHG)

This alternative would not involve demolition and construction and resulting GHG emissions. Short-term construction impacts would be significantly less. Long-term operation would involve more idling and accelerating of vehicles, thereby increasing emissions compared to operation of the widened roadway in the proposed project. Overall, GHG impacts under this alternative would be similar to the proposed project.

Hazards and Hazardous Materials

Hazards and hazardous materials impacts would be reduced under this alternative. This alternative would not demolish buildings that could contain lead-based paint or asbestos-containing materials; would not use hazardous materials required for construction; and would not disturb soil that could be contaminated by nearby leaking underground storage tanks (LUSTs). Hazards and hazardous materials impacts for the proposed project were identified as less than significant after implementation of mitigation measures.

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Hydrology and Water Quality

This alternative would not generate possible contaminants during construction or additional polluted stormwater runoff from the additional traffic and widened roadway. However, this alternative would not install drainage improvements to improve water quality and remedy severe existing drainage deficiencies as described in Section 5.6, *Hydrology and Water Quality*. The lack of drainage improvements under this alternative would increase impacts to hydrology and water quality compared to the proposed project. Project-related hydrology and water quality impacts were identified as less than significant.

Land Use and Planning

The existing Delhi community would not be disrupted under the No Project Alternative. No parcel acquisition would be required, and no residents, business or employees would be displaced. Short-term construction-related impacts that have the potential to divide the community also would not occur. Since 'social' impacts are not the realm of CEQA or the EIR (unless they indirectly result in physical impacts), these impacts are not significant for the project as proposed. The community would not be physically divided as the project would not implement any physical barriers precluding movement from one part of the community to another. Moreover, the proposed project would improve vehicle circulation and provide bike lanes that would have the potential to make the community more cohesive. Land use and planning impacts of this alternative would be neutral to those of the proposed project and less than significant.

Noise

The No Project Alternative would eliminate the significant and unavoidable short-term construction noise impact of the proposed project and also reduce the long-term operational noise impacts of the project as proposed. Under this alternative, no demolition or construction activities would occur. Operational noise impacts would be less than the proposed project because:

- (1) Increased congestion would cause a reduction in vehicular speeds, which would result in less noise than free-flow traffic conditions; this decrease would not be substantial.
- (2) Elimination of ROW acquisition and removal of existing homes. Noise would be substantially less at the second row of homes that are north and south of the acquired parcels; currently the existing buildings along Warner Avenue shield noise to the second row of homes. The proposed project would result in some of these parcels becoming first-row parcels.

Operational noise impacts of the proposed project were concluded to be less than significant after implementation of mitigation. Noise impacts would be substantially reduced under this alternative.

Population and Housing

Under this alternative no buildings would be removed and no residents or employees would be displaced. In comparison, the proposed project would displace 26 single-family residential homes, one multifamily home, four duplexes, two businesses, and an estimated 196 residents. This alternative would reduce population and housing impacts. These impacts for the proposed project would however, be less than significant upon implementation of relocation assistance.



7. Alternatives to the Proposed Project

Transportation and Traffic

This alternative would not increase the capacity of Warner Avenue and would not improve traffic flow within or beyond the Main Street to Grand Avenue segment. This alternative would not develop bicycle lanes and improved sidewalks on Warner Avenue. This alternative, however, would avoid short-term adverse construction-related impacts at the Warner Avenue/Main Street and with Warner Avenue/Halladay Street intersections. This alternative would also avoid the temporary need to modify three Orange County Transportation Authority bus routes/stops in the project area. Although this alternative would eliminate short-term construction-related impacts, overall, the transportation and traffic impacts of the No Project Alternative would be greater than the proposed project. Alleviating existing traffic congestion and providing capacity to accommodate existing and future traffic flows are primary objectives of the project.

Utilities and Service Systems

In comparison to the proposed project, the No Project Alternative would not install storm drainage improvements addressing existing drainage deficiencies within the project area. Other utility impacts (water, wastewater, and solid waste) were determined to be less than significant in the Initial Study for the proposed project and not analyzed in the EIR. Since the No Project Alternative would not include the beneficial impacts of storm drainage improvements, utility and service system impacts for the No Project Alternative would be greater than for the project.

7.6.1.2 Ability to Reduce Environmental Impacts

The No Project Alternative would reduce environmental impacts to cultural resources, hazards and hazardous materials, noise, and population and housing. Impacts related to geology and soils, hydrology and water quality, transportation and traffic, and utilities and service systems would be greater than for the proposed project. All other environmental topics would be similar to the proposed project.

7.6.1.3 Ability to Achieve Project Objectives

The No Project Alternative would not require any parcel acquisition and therefore would achieve project objective No. 6. It would not achieve any of the other project objectives.

7.6.2 110 South Alternative

After a full review of the 120-foot ROW Alternatives, the City investigated the application of a modified Major Arterial ROW street cross section with a 110-foot ROW. This would have narrower travel lanes and Class II bike lanes to maintain a 14-foot raised median that would be wide enough to accommodate left turn pockets. The 110-foot ROW was a compromise to minimize the ROW impacts of the 120-foot ROW while still conforming to the required characteristics and design elements of an arterial street. The 110 North alignment ultimately became the proposed project.

The 110 South Alternative would align the road widening to the south of the existing centerline (see Figure 7-3 *110' South Widening Alternative*). Compared to the proposed project, the major differences with this alignment are the acquisition and building demolition of three additional commercial parcels at the strip commercial center and one industrial parcel, Cherry Aerospace. The majority of impacts to land uses would be shifted from the north to the south side of Warner Avenue and would result in the reduction of 14 residential parcel acquisitions. Additionally, impacts to industrial parcels on the north side

7. *Alternatives to the Proposed Project*

of Warner Avenue would be reduced. This alternative would result in the loss of a strip of property along James Monroe Elementary School, National Guard Armory, and Delhi Park.

7.6.2.1 Environmental Analysis

Air Quality

The 110 South Alternative would require similar demolition and construction activities as the proposed project. The road widening would occur mostly on the south of the existing centerline, but the same construction materials and haul trips would be required. Under this alternative less demolition of residential buildings would be required, and more acquisition of partial parcels that consist of only taking a partial strip of land closest to Warner Avenue to make room for sidewalks and parkways. Nevertheless, overall air quality impacts under the alternative would have a nominal difference compared to the proposed project. Therefore, air quality impacts under the proposed project and the alternative would be similar.

Cultural Resources

This alternative would involve similar ground disturbance during the demolition, grading, and paving of the widened roadway. Thus, cultural resources under the alternative and proposed project would be similar.

Geology and Soils

According to the State California Seismic Hazard Zone Map, the project site is located within a liquefaction zone. Liquefaction hazard is unknown; however, shallow groundwater is present under the project site and is a contributing factor to liquefaction susceptibility. Similar to the proposed project, this alternative would remove and replace existing asphalt and road bed, creating a new foundation that may reduce potential damage to the site. Therefore, geology and soils impacts would be the same for the alternative and the proposed project.

Greenhouse Gas Emissions

Similar to the proposed project, the 110 South Alternative would improve traffic flow and reduce vehicle idling and accelerating with the addition of two traffic lanes to Warner Avenue. Demolition requirements are slightly reduced compared to the proposed project; however, GHG emissions will remain at a similar level since the same number of construction equipment pieces would be required during the process. Thus, GHG emissions under the alternative would be similar to the proposed project. As with the proposed project, GHG emissions would be less than significant with mitigation.

Hazards and Hazardous Materials

This alternative would share similar hazardous impacts as the proposed project from demolishing structures that could contain lead-based paint or asbestos-containing materials, using hazardous materials required for construction, and disturbing soil that could be contaminated by nearby LUSTs. The 110 South Alternative would require fewer building demolitions, but the overall possibility of hazards and hazardous materials impacts would be on similar levels to the proposed project. The alternative would involve similar amounts of hazardous material use, disturbed soils, and roadway debris as the proposed project. Impacts under the alternative are therefore similar to the proposed project.



7. Alternatives to the Proposed Project

Hydrology and Water Quality

This alternative would have the same possibility of generating contaminants during construction or contributing polluted stormwater runoff from the added traffic and widened roadway as the proposed project. It would also call for installation of drainage improvements and repair of drainage deficiencies as the proposed project requires in Section 5.6, *Hydrology and Water Quality*. Thus, hydrology and water quality impacts would be similar under the proposed project and this alternative.

Land Use and Planning

This alternative requires the acquisition of 6 fewer full parcels compared to the proposed project. Residential parcels along the north side of Warner Avenue would be spared and instead a strip of land along three public facilities on the south side of the road would be acquired. It will however require the demolition of Cherry Aerospace, a large industrial parcel that provides the community with income and employment opportunities. While fewer homes would be demolished under this alternative, the demolition of Cherry Aerospace would not be an economically feasible substitute and would result in a different but similar level land use and planning impact as the proposed project. This alternative would result in the loss of a strip of property along the north side of James Monroe Elementary School, National Guard Armory, and Delhi Park. This would not remove any buildings but would reduce the acreage of public facilities in the City. Land use and planning impacts would therefore be greater than the proposed project.

Noise

The 110 South Alternative would affect mostly parcels along the south side of Warner Avenue. Short-term construction noise impacts would be similar but overall it would affect fewer residential parcels, as there are fewer homes on the south side of the street. Although the residents impacted by construction noise would differ, similar to the proposed project, construction noise impacts would be significant and unavoidable. As shown in Table 7-2, 10 fewer parcels would require demolition of structures under this alternative in comparison to the proposed project. Although the overall construction noise would be slightly reduced due to less demolition, construction noise would still be considered significant and unavoidable for this alternative.

Residents impacted would differ from the proposed project since most of the residential land uses affected would be located along the south side rather than the north side of Warner Avenue. Since there would be fewer residential buildings to be demolished and less residential neighborhoods, there would be fewer second row houses that would be exposed to increased traffic noise. Thus, long-term operational noise impacts would be less than the proposed project.

Population and Housing

This alternative would displace 17 residential parcels and 7 businesses (commercial, industrial, office) parcels. The proposed project would displace 31 residential parcels and 3 business parcels. Because the alternative alignment falls further south where more businesses and industrial uses are located, the alternative would reduce the number of displaced residents while increasing displaced businesses and industrial uses. Similar to the proposed project, the 110 South Alternative would not require construction of replacement housing;¹ therefore, the population and housing impact would be similar.

¹ CEQA Guidelines Appendix G: Would the project displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

7. Alternatives to the Proposed Project

Transportation and Traffic

The 110 South Alternative would widen the roadway and improve sidewalks and parkways like the proposed project. Although this alternative alignment is slightly south of the proposed alignment, the significant short-term construction-related impacts at Warner Avenue/Main Street and Warner Avenue/Halladay Street intersections would still occur. Temporary modification of three Orange County Transportation Authority bus routes/stops in the project area would also be required for the alternative alignment. Thus, the transportation and traffic impacts under the alternative would be similar to the proposed project and would share the same significant and unavoidable traffic impacts even after mitigation measures.

Utilities and Service Systems

This alternative would involve the same storm drainage improvement installation and existing drainage deficiencies repair as the proposed project. Water, wastewater, and solid waste impacts were determined less than significant in the Initial Study for the proposed project and therefore are not analyzed in the EIR. The proposed project and this alternative would have similar utilities and service systems impacts.

7.6.2.2 Ability to Reduce Environmental Impacts

The 110 South Alternative would reduce environmental impacts to noise and population and housing. All other environmental topics would be similar to the proposed project.

7.6.2.3 Ability to Achieve Project Objectives

Similar to the proposed project, this alternative would increase the carrying capacity of Warner Avenue by developing additional through lanes and left turn lanes on Warner Avenue and therefore would achieve project objectives No. 1, 2, 3, and 4. Similar to the proposed project, this alternative includes development of bicycle lanes and improved parkways and sidewalks and installation of storm drainage improvements that would achieve project objective No. 5 and No. 7. With a more southern alignment, this alternative minimizes parcel acquisitions, particularly residential homes, and achieves project objective No. 6.

7.6.3 120 South Alternative

This 120-foot width alternative would extend mostly towards the south of the existing centerline (see Figure 7-6, *120' South Widening Alternative*). Compared to the proposed project, the major differences with this alignment are the acquisition and building removal of three additional commercial parcels (at the strip commercial center), the fire station, and two industrial parcels (Cherry Aerospace and Hardy & Harper Asphalt). The majority of the impacts to residential homes would be shifted from the north to the south side of Warner Avenue and result in fewer home acquisitions.

This alternative would result in the loss of a significant strip of property along Warner Avenue at the James Monroe Elementary School, National Guard Armory, and Delhi Park.



7. Alternatives to the Proposed Project

7.6.3.1 Environmental Analysis

Air Quality

This alternative would require similar demolition and construction activities as the proposed project. However, the road widening would include 10 feet more width of demolition and excavation and may require additional construction materials and haul trips. Furthermore, while this alternative would require acquisition of fewer residential homes, it would require demolishing large commercial, public facility, and industrial parcels that would further increase construction-related emissions. Therefore, air quality impacts under this alternative may be greater than the proposed project and will require mitigation measures to reduce its impacts to less than significant.

Cultural Resources

The impact on cultural resources would involve similar ground disturbance as the proposed project during demolition, excavation, grading, and paving of the widened roadway. There are no indications of significant archaeological or historical resources in the project area and no historical buildings would be demolished under the proposed project or this alternative; therefore this alternative alignment would have similar impacts on cultural resources as the proposed project.

Geology and Soils

The project site is within a liquefaction zone according to the State California Seismic Hazard Zone Map but liquefaction hazard is unknown. Shallow groundwater is found underneath the project site though and is a contributing factor to liquefaction susceptibility. This alternative, like the proposed project, would remove existing asphalt and replace it with new pavement that may help with foundation support and reduce potential liquefaction damage to the site. Therefore, geology and soils impacts under this alternative would be similar to the proposed project.

Greenhouse Gas Emissions

The 120 South Alternative would have slightly different impacts as the proposed project in regards to greenhouse gas emissions. Both would improve traffic flow and reduce vehicle idling and acceleration in long-term operations. However, the alternative's short-term GHG emissions from construction and demolition includes fewer residential homes, but larger industrial and commercial demolitions and wider traffic lanes that may produce more debris and require more construction material, leading to an increase in GHG emissions from the construction equipment. Thus, GHG emissions under the alternative would be greater than the proposed project and require mitigation to less than significant.

Hazards and Hazardous Materials

This alternative and the proposed project share similar hazards and hazardous materials impacts due to demolishing structures that could contain lead-based paint or asbestos-containing materials, using hazardous materials for construction, and disturbing soil that could be contaminated by nearby LUSTs. The alternative would require the demolition of more industrial and commercial parcels and larger structures instead of residential homes and may involve more disturbed soils, and more roadway and demolition debris than the proposed project. Therefore, impacts under the alternative would be slightly greater than the proposed project.

7. *Alternatives to the Proposed Project*

Hydrology and Water Quality

Hydrology and water quality impacts from this alternative are similar to the proposed project and would occur from the possibility of generating contaminants during construction or contributing polluted stormwater runoff from the added traffic and widened roadway. While there may be a slight increase in polluted stormwater runoff caused by wider traffic and bicycle lanes in the alternative, the difference between this alternative and that of the proposed project would be nominal. Similar to the proposed project, the alternative includes installing drainage improvements and addressing drainage deficiencies. Thus, hydrology and water quality impacts would be similar under the alternative and proposed project.

Land Use and Planning

This 120 South Alternative requires the acquisition of 6 fewer parcels. The 11 residential parcels would be spared, but at the expense of multiple large industrial and commercial parcels, including a strip commercial space, Cherry Aerospace and Hardy & Harper Asphalt, as well as a fire station. This alternative would result in the loss of a strip of property along the north side of James Monroe Elementary School, National Guard Armory, and Delhi Park. This would not remove any buildings but would reduce the acreage of public facilities in the City. The alternative would better maintain the character of the Delhi community with the reduction in residential home demolitions; however businesses and retail areas would be affected in return. In both cases, either residential parcels or industrial and commercial parcels would be adversely affected. Because of the loss of public land, land use and planning impacts would be greater than the proposed project.

Noise

The 120 South Alternative would affect mostly parcels along the south side of Warner Avenue, in contrast to the proposed project that would affect mostly the parcels along the north side. Short-term construction noise impacts would be similar but overall, this alternative would affect fewer residential parcels because there are fewer residential land uses on the south side of Warner Avenue. While the affected residents would be different from those affected by the proposed project, the construction noise impacts would be significant and unavoidable.

Table 7-2 shows that 9 fewer residential parcels would be demolished under this alternative; however, it would require the demolition of large industrial and commercial parcels that would still generate significant and unavoidable construction noise impacts.

Residents impacted would differ from the proposed project since most of the residential land uses affected would be located along the south side rather than the north side of Warner Avenue. Since there would be fewer residential buildings to be demolished and less residential neighborhoods, there would be fewer second row houses that would be exposed to increased traffic noise. Thus, long-term operational noise impacts would be less than the proposed project.

Population and Housing

This alternative would displace 22 residential parcels and 8 business parcels (commercial, industrial, office). The proposed project would displace 31 residential parcels and 3 business parcels. While this alternative would displace fewer residential parcels, it does substantially increase displacement of other business land uses which would increase the displacement of people (employees of businesses). Similar



7. Alternatives to the Proposed Project

to the proposed project, the 110 South Alternative would not require construction of replacement housing;² therefore, the population and housing impact would be similar.

Transportation and Traffic

The 120 South Alternative would widen the roadway, introduce bicycle lanes, and improve sidewalks and parkways like the proposed project. Similar to the proposed project, this alternative would not lessen the adverse impacts of traffic congestion and would experience negative impacts of construction at the Warner Avenue/Main Street and Warner Avenue/Halladay Street intersections. Temporary modification of three Orange County Transportation Authority bus routes/stops in the project area would also be required with the 120 South Alternative. Thus, the transportation and traffic impacts of the proposed project and alternative would be similar and remain significant and unavoidable after implementation of mitigation measures.

Utilities and Service Systems

Installation and improvements of storm drains and existing drainage deficiencies would be similar to the proposed project. Water, wastewater, and solid waste impacts were determined to be less than significant in the Initial Study and therefore are not analyzed in the EIR. Utilities and Service Systems would remain the same between the proposed project and alternative.

Ability to Reduce Environmental Impacts

The 120 South Alternative would increase environmental impacts to air quality, greenhouse gas emissions, hazards and hazardous materials, and noise. All other environmental topics would be similar to the proposed project.

7.6.3.2 Ability to Achieve Project Objectives

By increasing the carrying capacity of the roadways by developing additional through lanes and left turn lanes on Warner Avenue, this alternative would achieve project objective No. 1, 2, 3, and 4. Similar to the proposed project, the 120 South Alternative includes development of wider bicycle lanes, improved parkways and sidewalks, and installation of storm drainage improvements that would achieve project objective No. 5 and 7. Since the overall parcel acquisition is reduced in comparison to the proposed project, this alternative is considered to achieve project objective No. 6.

7.6.4 Revised Construction Alternative

The Revised Construction Alternative would change the equipment mix and scheduling and was selected for evaluation because of its potential to reduce the significant construction-related noise impacts of the proposed project (110 North). This alternative would have the same project design (110-foot north alignment) as the proposed project. The operation of heavy earthmoving equipment would substantially elevate noise levels near residential areas and schools (considered sensitive noise receptors) for an extended duration over several months; therefore, construction noise is considered significant. Table 7-3 shows the alternative's extended construction schedule and decrease in the number of heavy construction equipment. This extended construction schedule would allow for a reduction of the number of heavy earthmoving equipment and construction activities occurring daily and a reduction in noise.

² CEQA Guidelines Appendix G: Would the project displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

7. Alternatives to the Proposed Project

**Table 7-3
Revised Construction Alternative**

<i>Phase</i>	<i>Proposed Construction Equipment</i>	<i>Proposed Duration</i>	<i>Alternative Construction Equipment</i>	<i>Alternative Duration</i>
1. Right-of-Way Clearance				
Demolition of Existing Structures	2 backhoes and 1 front-end loader	3 months ¹	1 backhoe and 1 front-end loader	6 months ¹
OHE Removal	2 cranes and 1 pole-pulling machine	6 months ¹	1 crane and 1 pole-pulling machine	12 months ¹
2. Roadway Construction				
Demolition of AC/Curb/Gutter	1 front-end loader with breaker attachment	3 days ²	1 front-end loader with breaker attachment	6 days ²
Excavation/Removal of Fill and Subbase	2 backhoes and 1 front-end loader	5 days ²	1 backhoe and 1 front-end loader	10 days ²
Foundation Construction	1 paver & 2 rollers	17 days ²	1 paver & 1 roller	34 days ²
Paving	1 paver & 2 rollers	17 days ²	1 paver & 1 roller	34 days ²

Note: Duration of each phase is approximate.

¹ ROW clearance, demolition, and removal of buildings, pads, and poles would be done over 3 to 5 years as parcels are acquired by the City.

² Duration is for each side of the street required for widening in 0.25-mile segments. For example, laying pavement would take 17 days for a 0.25-mile section on the north side of Warner Avenue and another 17 days for a 0.25-mile section on the south side of Warner Avenue.



7.6.4.1 Environmental Analysis

Air Quality

Extending the construction schedule under this alternative would reduce the daily emissions of criteria air pollutants because construction activities would be less intensive per day. There would potentially be less building and pavement demolition and the associated debris hauls per day or less grading and the associated soil haul per day as well. However, extending the construction schedule would not decrease the total amount of debris or soil haul required to complete the project, therefore this alternative would have similar air quality impacts as the proposed project. As in the proposed project, air quality impacts would be mitigated to less than significant under this alternative.

Cultural Resources

This Revised Construction Alternative would only change the construction equipment and scheduling and does not alter the alignment or road width, therefore the required ground disturbance and demolition of buildings will remain the same. Thus, cultural resource impacts under this alternative would be the same as the proposed project.

Geology and Soils

The project site for this alternative remains the same as the proposed project. The site is within a liquefaction zone identified in the State California Hazard Zones Map. Liquefaction hazard onsite is unknown; however shallow groundwater is present under the project site and is one of the contributing factors to liquefaction susceptibility. Similar to the proposed project, this alternative would require removal and replacement of existing asphalt with new foundation and pavement that may reduce

7. Alternatives to the Proposed Project

potential damage to the site. Therefore, geology and soils impacts will remain the same for the alternative and the proposed project.

Greenhouse Gas Emissions

The alternative would develop additional traffic lanes to the roadway and reduce vehicle idling and acceleration after completion, similar to the proposed project. The longer construction period under the alternative would mean longer construction traffic and therefore more idling. As idling and stop and go traffic generates more GHG emissions, the alternative would result in higher GHG emissions. However, the increase would be nominal as it would be for a relatively short period of time until the roadway is built out. Therefore, the total GHG emissions impacts would essentially be the same as the proposed project and would require mitigation to be less than significant.

Hazards and Hazardous Materials

This alternative requires the same parcel acquisitions as the proposed project and has the potential of demolishing structures that could contain lead-based paint or asbestos-containing materials, using hazardous materials required for construction, and disturbing soil that could be contaminated by nearby LUSTs. Because these activities are consistent with those of the proposed project, the impacts under the alternative would be the same as the proposed project and would be less than significant after implementation of mitigation measures.

Hydrology and Water Quality

Hydrology and water quality impacts under the Revised Construction Alternative would not change from the proposed project. The possibility of generating contaminants during construction or additional polluted stormwater runoff from the added traffic and widened roadways would remain the same. Drainage improvement installations and repair of drainage deficiencies under the alternative would also not change from the proposed project. Thus, impacts under this alternative would be the same as the proposed project.

Land Use and Planning

The land use and planning impacts under this alternative would be similar to the proposed project. Acquisition of certain parcels would remain the same and have similar short-term construction-related impacts that have the potential to temporarily divide the community as the proposed project. The alternative would improve bicycle and pedestrian mobility as the proposed project would by developing bicycle lanes and improving sidewalks and parkways. Therefore, land use and planning impacts under this alternative would be the same as the proposed project.

Noise

The alternative construction equipment mix and schedule assumes that slightly more than half of the construction equipment would be utilized compared to the proposed project, which means that the construction schedule would take about twice as long. Table 7-4 below shows the extended construction phase duration and the noise levels for each phase when measured at certain distances from the center of construction activity.

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**Table 7-4
Revised Construction Alternative Noise Levels**

<i>Phase</i>	<i>Distance from Receptor (feet)</i>					<i>Phase Duration</i>
	<i>25</i>	<i>50</i>	<i>100</i>	<i>200</i>	<i>400</i>	
Right-of-Way Clearance						
Demolition of Existing Structures	82	77	71	65	59	6 months
OHE Removal	79	73	67	61	55	12 months
Roadway Construction						
Demolition of AC/Curb/Gutter	84	78	72	66	60	6 days
Excavation/Removal of Fill/Subbase	83	77	71	65	59	10 days
Foundation Construction	81	75	69	63	57	34 days
Paving	81	75	69	63	57	34 days

Notes: Noise levels shown in dBA Leq. Construction noise levels derived from calculations performed with the FHWA RCNM (See Table 5.8-11).

The noise levels presented above in Table 7-4 represent the average noise levels (dBA L_{eq}) audible to receptors at certain distances (25, 50, 100, 200, 400 feet) from the center of construction activity. The noise levels for receptors 25 feet away would experience noise levels ranging from 79 to 84 dBA Leq. As noise dissipates at a rate of approximately 6 dBA per doubling distance, the noise levels would be 73 to 78 dBA Leq at 100 feet away, 67 to 72 at 200 feet away, and 55 to 60 at 400 feet away. The noise levels for receptors would be approximately 3 dBA less when compared to the proposed project's construction schedule.



Under this alternative, residents within a distance of 100 feet from the center of activity would be exposed to noise levels that would be readily perceptible and disturbing due to construction activity. Under the proposed project, that distance would be 200 feet, impacting more residents during the construction period. Project-related noise would subside as construction activities moved farther along the road. However, under this alternative, while the number of receptors impacted at a given time would be less, the construction period would take twice as long and noise reductions would be slight and impacts would still be significant. Therefore, although different, the level of short-term construction noise impacts would be similar to the proposed project; construction noise impacts would be significant and unavoidable.

Long-term operational noise would be similar for this alternative as the proposed project because this alternative would only modify the construction phasing and schedule. As with the proposed project, long term noise impacts would be less than significant with implementation of mitigation measures.

Population and Housing

This alternative requires the acquisition of the same parcels as the proposed project; 31 residential and 3 business parcels. Relocation assistance would be the same for both the alternative and the proposed project. Thus, population and housing impacts would be the same.

7. Alternatives to the Proposed Project

Transportation and Traffic

This alternative would widen the roadway to the same number of traffic lanes, develop bicycle lanes, and improve sidewalks and parkways as the proposed project. However, the short-term adverse impacts of construction at Warner Avenue/Main Street and Warner Avenue/Halladay Street intersections would occur in both this alternative and the proposed project. These adverse impacts may be felt for even longer than the proposed project because the construction schedule would be extended in the alternative. Furthermore, the temporary modification of three Orange County Transportation Authority bus routes/stops in the project area would go on twice as long as detailed in the proposed project because of the extended construction schedule under the alternative. Thus, this alternative would have greater impact on transportation and traffic than the proposed project. Impacts under the proposed project would still have significant and unavoidable traffic impacts even after mitigation measures.

Utilities and Service Systems

As the proposed project, this alternative would involve installing storm drainage improvements and addressing existing drainage deficiencies within the project area. Water, wastewater, and solid waste impacts were determined to be less than significant in the Initial Study for the proposed project and are not analyzed in the EIR.

7.6.4.2 Ability to Reduce Environmental Impacts

Impacts related to transportation and traffic would be greater than for the proposed project. All other environmental topics would be similar to the proposed project.

7.6.4.3 Ability to Achieve Project Objectives

This alternative would increase the carrying capacity of Warner Avenue by developing additional through lanes and left turn lanes and therefore would achieve project objective No. 1, 2, 3, and 4. As with the proposed project, this alternative includes development of bicycle lanes, improved parkways and sidewalks, and installation of storm drainage improvements that would achieve project objective No. 5 and 7. This alternative would require the same parcel acquisitions as the proposed project; therefore, project objective No. 6 would be achieved to the same degree in the alternative as the proposed project.

7.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the “environmentally superior alternative” and, in cases where the “No Project” Alternative is environmentally superior to the proposed project, the environmentally superior alternative must be identified from the other alternatives (CEQA 15126.6(e)(2)). Table 7-5 provides a summary of the alternatives impact analysis.

7. Alternatives to the Proposed Project

**Table 7-5
Comparison of Alternatives to the Proposed Project**

<i>Environmental Issue Area</i>	<i>Proposed Project (110 North)</i>	<i>No Project</i>	<i>110 South</i>	<i>120 South</i>	<i>Revised Construction Alternative</i>
Air Quality	LS	=	=	>	=
Cultural Resources	LS	<	=	=	=
Geology and Soils	LS	>	=	=	=
Greenhouse Gas Emissions	LS	=	=	>	=
Hazards and Hazardous Materials	LS	<	=	>	=
Hydrology and Water Quality	LS	>	=	=	=
Land Use and Planning	LS	=	>	>	=
Noise	S	<*	<	<	=
Population and Housing	LS	<	=	=	=
Transportation and Traffic	S	>	=	=	>
Utilities and Service Systems	LS	>	=	=	=

Notes:

- < Impacts would be less than those of the proposed project
- > Impacts would be greater than those of the proposed project
- = Impacts would be similar to the proposed project
- LS Less than Significant Impact
- S** Significant Impact
- * Eliminates a significant and unavoidable impact



Each alternative selected for analysis in this document has a different combination of environmental effects whose significance would be equal to, greater than, or less than the proposed project. The proposed project has two environmental impacts that are considered significant and unavoidable: Noise and Transportation and Traffic. The only alternative that would eliminate these significant and unavoidable project-related impacts is the No Project Alternative; however, it would not achieve any of the objectives of the project, which is to alleviate traffic and congestion on Warner Avenue by widening the roadway. Additionally, in compliance with CEQA Guidelines Section 15126.6(e)(2), if the environmentally superior alternative is the No Project Alternative, the EIR must identify an environmentally superior alternative among the other alternatives.”

Taking into account all project alternatives and their impacts, the 110 South Alternative would be the environmentally superior. In comparison to the proposed project (110 North), the 110 South Alternative would reduce noise impacts. All other environmental topics would be similar to the proposed project.

Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts” (Guidelines Sec. 15126.6[c]). These are factors which will be considered by the City of Santa Ana decision makers in determining whether to approve the proposed project or one of the alternatives identified above.

7. Alternatives to the Proposed Project

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8. Impacts Found Not to Be Significant

California Public Resources Code Section 21003 (f) states: "...it is the policy of the state that...[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in the California Environmental Quality Act (CEQA) Guidelines (Guidelines) Section 15126.2(a), which states that "[a]n EIR shall identify and focus on the significant environmental impacts of the proposed project" and Section 15143, which states that "[t]he EIR shall focus on the significant effects on the environment." The Guidelines allow use of an Initial Study to document project effects that are less than significant (Guidelines Section 15063[a]). Guidelines Section 15128 requires that an EIR contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant, and were therefore not discussed in detail in the Draft EIR.

8.1 ASSESSMENT IN THE INITIAL STUDY

The Initial Study prepared for the proposed project in October 2012 determined that impacts listed below would be less than significant. Consequently, they have not been further analyzed in this Draft EIR. Please refer to Appendix A for explanation of the basis of these conclusions. Impact categories and questions below are summarized directly from the CEQA Environmental Checklist, as contained in the Initial Study.



**Table 8-1
Impacts Found Not to Be Significant**

<i>Environmental Issues</i>	<i>Initial Study Determination</i>
I. AESTHETICS. Would the project:	
a) Have a substantial adverse effect on a scenic vista?	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	Less Than Significant Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less Than Significant Impact
II. AGRICULTURE RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact

8. Impacts Found Not to Be Significant

**Table 8-1
Impacts Found Not to Be Significant**

<i>Environmental Issues</i>	<i>Initial Study Determination</i>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	No Impact
d) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	No Impact
III. AIR QUALITY. Would the project:	
e) Create objectionable odors affecting a substantial number of people?	Less than Significant Impact
IV. BIOLOGICAL RESOURCES. Would the project:	
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less Than Significant Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact
V. CULTURAL RESOURCES. Would the project:	
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less Than Significant Impact
d) Disturb any human remains, including those interred outside of formal cemeteries?	Less Than Significant Impact
VI. GEOLOGY AND SOILS. Would the project:	
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	No Impact
ii) Strong seismic ground shaking?	Less Than Significant Impact
iv) Landslides?	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	No Impact

8. Impacts Found Not to Be Significant

**Table 8-1
Impacts Found Not to Be Significant**

<i>Environmental Issues</i>	<i>Initial Study Determination</i>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than Significant Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	No Impact
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than Significant Impact
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	No Impact
IX. HYDROLOGY AND WATER QUALITY. Would the project:	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	No Impact
j) Inundation by seiche, tsunami, or mudflow?	No Impact
X. LAND USE AND PLANNING. Would the project:	
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	No Impact
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	No Impact
XI. MINERAL RESOURCES. Would the project:	
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	No Impact
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No Impact



8. Impacts Found Not to Be Significant

**Table 8-1
Impacts Found Not to Be Significant**

<i>Environmental Issues</i>	<i>Initial Study Determination</i>
XII. NOISE. Would the project result in:	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	No Impact
XIII. POPULATION AND HOUSING. Would the project:	
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No Impact
XIV. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	
a) Fire protection?	Less Than Significant Impact
b) Police protection?	Less Than Significant Impact
c) Schools?	No Impact
d) Parks?	Less Than Significant Impact
e) Other public facilities?	Less Than Significant Impact
XV. RECREATION.	
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact
XVI. TRANSPORTATION/TRAFFIC. Would the project:	
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	No Impact
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	No Impact
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less Than Significant Impact
XVII. UTILITIES AND SERVICE SYSTEMS. Would the project:	
a) Exceed waste water treatment requirements of the applicable Regional Water Quality Control Board?	Less Than Significant Impact
b) Require or result in the construction of new water or waste water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	No Impact
d) Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?	Less Than Significant Impact
e) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No Impact

8. Impacts Found Not to Be Significant

Table 8-1
Impacts Found Not to Be Significant

<i>Environmental Issues</i>	<i>Initial Study Determination</i>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Less Than Significant Impact
g) Comply with federal, state, and local statutes and regulations related to solid waste?	Less Than Significant Impact



8. Impacts Found Not to Be Significant

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9. *Significant Irreversible Changes Due to the Proposed Project*

Section 15126.2(c) of the CEQA Guidelines requires that an Environmental Impact Report (EIR) describe any significant irreversible environmental changes that would be caused by the proposed project should it be implemented. Specifically, the CEQA Guidelines state:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highways improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The following are the significant irreversible changes that would be caused by the proposed project, should it be implemented:

- Implementation of the proposed project would include construction activities that would entail the commitment of nonrenewable and/or slowly renewable energy resources; human resources; and natural resources such as lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, water, and fossil fuels. The commitment of resources required for the construction and operation of the proposed project would limit the availability of such resources for future generations or for other uses during the life of the project.
- The project would remove a bank building (1968), gas station (1962), and residential buildings dating from between 1920 and 1962. Land uses that have been onsite for between 45 and 93 years would be replaced with a wider Warner Avenue. Upon project development it is very unlikely that the conversion of these land uses would be reversed.

Given the low likelihood that the project site would revert to its original form, the proposed project would generally commit future generations to these environmental changes.



9. Significant Irreversible Changes Due to the Proposed Project

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10. Growth-Inducing Impacts of the Proposed Project

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also required is an assessment of other projects that would foster other activities which could affect the environment, individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through analysis of the following questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- Would this project result in the need to expand one or more public services to maintain desired levels of service?
- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?



Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment, beyond the direct consequences of developing the land use concept examined in the preceding sections of this EIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

The project would widen a one-mile segment of Warner Avenue in the City of Santa Ana from four to six lanes, increasing the capacity of the roadway segment by about 50 percent. However, surrounding areas of the City of Santa Ana are completely built out. Therefore, new development on land near the project site is impossible. Redevelopment would require willing sellers and would be required to comply with City zoning and General Plan land use regulations.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

The project would not require expansion of any public service, as substantiated in the Initial Study included as Appendix A of this Draft EIR.

10. Growth-Inducing Impacts of the Proposed Project

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

Operation of the widened roadway would not generate employment. Project construction employment would not result in significant growth; as explained in the Initial Study, Appendix A to this Draft EIR, construction employment is expected to be absorbed from the regional labor force and is not expected to attract new workers into the region.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Project approval by the City of Santa Ana and project construction would not set precedents. Local jurisdictions routinely approve and carry out road improvements.

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