Draft Environmental Assessment
Rosecrans/Marquardt Grade Separation Project

Issued by: Federal Railroad Administration (FRA)
Pursuant to 42 USC § 4332, 49 USC § 303, and 64 FR 28545

For more information on the Environmental Assessment, please contact:

Lyle Leitelt, AICP
Community Planner
U.S. Department of Transportation
Federal Railroad Administration
Office of Railroad Policy and Development
1200 New Jersey Ave SE
Washington, DC 20590

April 2018

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Approved by:

5/2/2018

Jamie Rennert **Date**
Director, Office of Program Delivery
Federal Railroad Administration

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TABLE OF CONTENTS

EXECUTIVE SUMMARY xi

1.0 PURPOSE AND NEED OF THE PROJECT 1

1.1 Introduction 1

1.2 Project Area and Study Area 1

1.3 Project Background 10

1.4 Purpose and Need 10

2.0 DESCRIPTION OF ALTERNATIVES 12

2.1 Introduction 12

2.2 Criteria for Evaluating Alternatives 12

2.3 Evaluated Alternatives 12

2.3.1 Alternative 1: No Build Alternative 12

2.3.2 Alternative 2: Offset Overpass with Connector Road (Build Alternative) 13

2.4 Alternatives Dismissed 13

2.4.1 Offset Overpass with One-Way Frontage Roads 13

2.4.2 Offset Underpass with Frontage Roads 14

2.4.3 Offset Underpass with Connector Roads 14

2.4.4 Offset Overpass with Connector Roads 15

2.4.5 Other Alternatives Withdrawn from Consideration 15

3.0 ENVIRONMENTAL RESOURCES, IMPACTS, AND MITIGATION 21

3.1 Environmental Issues Excluded from Discussion 21

3.2 Existing and Future Land Use 23

3.2.1 Regulatory Setting 23

3.2.2 Affected Environment 27

3.2.3 Environmental Consequences 35

3.2.4 Avoidance, Minimization, and/or Mitigation Measures 35

3.3 Consistency with Regional and Local Plans and Programs 36

3.3.1 Regulatory Setting 36

3.3.2 Affected Environment 37
3.3.3 Environmental Consequences 37
3.3.4 Avoidance, Minimization, and/or Mitigation Measures 40
3.4 Community Character and Cohesion 40
3.4.1 Regulatory Setting 40
3.4.2 Affected Environment 41
3.4.3 Environmental Consequences 41
3.4.4 Avoidance, Minimization, and/or Mitigation Measures 43
3.5 Relocations and Real Property Acquisition 44
3.5.1 Regulatory Setting 44
3.5.2 Affected Environment 44
3.5.3 Environmental Consequences 44
3.5.4 Avoidance, Minimization, and/or Mitigation Measures 48
3.6 Environmental Justice 48
3.6.1 Regulatory Setting 48
3.6.2 Affected Environment 49
3.6.3 Environmental Consequences 51
3.6.4 Avoidance, Minimization, and/or Mitigation Measures 59
3.7 Utilities/Emergency Services 59
3.7.1 Affected Environment 59
3.7.2 Environmental Consequences 65
3.7.3 Avoidance, Minimization, and/or Mitigation Measures 65
3.8 Traffic and Transportation/Pedestrian and Bicycle Facilities 69
3.8.1 Regulatory Setting 69
3.8.2 Affected Environment 69
3.8.3 Environmental Consequences 76
3.8.4 Avoidance, Minimization, and/or Mitigation Measures 78
3.9 Visual/ Aesthetics 83

3.9.1 Regulatory Setting 83
3.9.2 Affected Environment 83
3.9.3 Environmental Consequences 83
3.9.4 Avoidance, Minimization, and/or Mitigation Measures 85
3.10 Cultural Resources 85
3.10.1 Regulatory Setting 85
3.10.2 Affected Environment 85
3.10.3 Environmental Consequences 94
3.10.4 Avoidance, Minimization, and/or Mitigation Measures 95
3.11 Water Quality and Storm Water Runoff 96
3.11.1 Regulatory Setting 96
3.11.2 Affected Environment 98
3.11.3 Environmental Consequences 98
3.11.4 Avoidance, Minimization, and/or Mitigation Measures 99
3.12 Hazardous Waste/ Materials 100
3.12.1 Regulatory Setting 100
3.12.2 Affected Environment 101
3.12.3 Environmental Consequences 103
3.12.4 Avoidance, Minimization, and/or Mitigation Measures 104
3.13 Air Quality 105
3.13.1 Regulatory Setting 105
3.13.2 Affected Environment 109
3.13.3 Environmental Consequences 115
3.13.4 Avoidance, Minimization, and/or Mitigation Measures 126
3.14 Noise and Groundborne Vibrations 126
3.14.1 Regulatory Setting 126
3.14.2 Affected Environment 135
3.14.3 Environmental Consequences 137

3.14.4 Avoidance, Minimization, and/or Mitigation Measures 140
3.15 Cumulative Impacts 141
3.15.1 Regulatory Setting 141
3.15.2 Existing and Future Land Use 141
3.15.3 Consistency with Regional Local Plans and Programs 142
3.15.4 Community Character and Cohesion 143
3.15.5 Relocations and Real Property Acquisition 144
3.15.6 Environmental Justice 144
3.15.7 Utilities/Emergency Services 145
3.15.8 Traffic and Transportation/Pedestrian and Bicycle Facilities 146
3.15.9 Visual/Aesthetics 147
3.15.10 Cultural Resources 148
3.15.11 Water Quality and Storm Water Runoff 149
3.15.12 Hazardous Waste/Materials 150
3.15.13 Air Quality 151
3.15.14 Noise and Vibration 151
4.0 PUBLIC COMMENTS AND COORDINATION 153
4.1 Alternatives Analysis 153
4.2 Public Review Period 153
5.0 LIST OF PREPARERS 154
6.0 DISTRIBUTION LIST 155
6.1 Elected Officials 155
6.2 Federal Agencies 160
6.3 State Agencies 161
6.4 Local Agencies 162
6.5 Other Stakeholders 165
7.0 REFERENCES 166

APPENDICES

Appendix A. SHPO Correspondence, January 9, 2017

Appendix B. FRA Correspondence February 16, 2017

Appendix C. SHPO Concurrence November 22, 2017

Appendix D. Notice of Exemption

Appendix E. CPUC Nomination

Appendix F. CPUC Nomination Approval

LIST OF TABLES

Table S-1-1. Impact Summary xiii

Table 3-1. Current and Future Development Projects in the Cities of Santa Fe Springs, La Mirada, and Norwalk 32

Table 3-2. Consistency with State, Regional, and Local Plans and Programs 37

Table 3-3. Right of Way Impacts 46

Table 3-4. Racial and Ethnic Characteristics in the Study Area and Los Angeles County 52

Table 3-5. Households with Income in the Past 12 Months below Poverty Level in the Study Area and Los Angeles County 54

Table 3-6. Significant Delay Impact Criteria 76

Table 3-7. Intersection Level of Service and Delay 81

Table 3-8. Native American Consultation Summary 90

Table 3-9. Impervious Surface Area 99

Table 3-10. Summary of Ambient Air Quality Standards and Attainment Designations 106

Table 3-11. Federal General Conformity De Minimis Levels for Los Angeles County 109

Table 3-12. SCAB Emissions Inventory and Projections 110

Table 3-13. Summary of Ambient Air Quality Monitoring Data 112

Table 3-14. Annual Construction Emissions of Criteria Air Pollutants 116

Table 3-15. Operational Emissions of Criteria Air Pollutants 116

Table 3-16. Predicted Mobile-Source CO Concentrations at Primarily Affected Intersections 118

Table 3-17. FTA Land Use Categories and Noise Metrics 127

Table 3-18. FTA Construction Noise Assessment Criteria 131

Table 3-19. Groundborne Vibration Impact Criteria for General Assessment (VdB) 131

Table 3-20. Construction Vibration Criteria for the Evaluation of Structural Damage 132

Table 3-21. Activity Categories and Noise Abatement Criteria 134

Table 3-22. Predicted Rail Noise Levels at Nearest Residential Land Uses 139

LIST OF FIGURES

Figure 1-1. Regional Location Map 3
Figure 1-2. Project Location Map 5
Figure 1-3. Project Area 7
Figure 2-1. Alternative 2 – Plan View 17
Figure 2-2. Right of Way Exhibit 19
Figure 3-1. Community Impacts Study Area 25
Figure 3-2. Zoning Map 30
Figure 3-3. Visual Simulation 43
Figure 3-4. Environmental Justice Populations 56
Figure 3-5. Utilities in the Project Area 62
Figure 3-6. Emergency Services 67
Figure 3-7. Los Angeles Metro 2014 Bike Map 71
Figure 3-8. Train Station and Bus Stop Locations 73
Figure 3-9. Area of Potential Effects 87
Figure 3-10. National Mobile Source Air Toxics Emission Trends 2010-2050 or Vehicles Operating on Roadways Using U.S. EPA's Moves2014a Model 122
Figure 3-11. Noise Exposure Criteria for Category 1 and 2 Land Uses 130
Figure 3-12. Allowable Increase in Cumulative Noise Exposure for Category 1 and 2 Land Uses 130

ACRONYMS AND TERMS

ADL	Aerially Deposited Lead
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act
ASR	Archaeological Survey Report
BACT	Best Available Control Technology
BMP	Best Management Practice
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHSRA	California High-Speed Rail Authority
CIA	Community Impact Assessment
CIH	certified industrial hygienist
CO	carbon monoxide
CTC	California Transportation Commission
CWA	Clean Water Act
CZMA	Coastal Zone Management Act of 1972
DOGGR	Division of Oil, Gas and Geothermal Resources
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EAP	Emergency Action Plan
EO	Executive Order
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FIP	Federal Implementation Plan
FRA	Federal Railroad Administration
FTIP	Federal Transportation Improvement Program
GCP	Green Construction Policy
GPR	ground penetrating radar
ISA	Initial Site Assessment
LACM	Natural History Museum of Los Angeles County
LACSD	Los Angeles County Sanitation District

LARWQCB	Los Angeles Regional Water Quality Control Board
LBP	Lead Based Paint
LCP	Lead Compliance Plan
LEDPA	Least Environmentally Damaging Practicable Alternative
LOS	Level of Service
LOSSAN	Los Angeles-San Diego-San Luis Obispo
Metro	Metropolitan Transportation Authority
MS4	Municipal Separate Storm Sewer
MVF	Motor Vehicle Fuels
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NO_2	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NPMS	National Pipeline Mapping System
O_3	Ozone
PHMSA	Pipeline and Hazardous Materials Safety Administration
PM_{10} and $PM_{2.5}$	Particulate Matter
PRC	CA Public Resources Code
PSR	Paleontological Resources Phase I Assessment
RAP	Relocation Assistance Program
RCP	Regional Comprehensive Plan
RMS	Root mean square
RON	Resolution of Necessity
ROW	Right of Way
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments

SI	Site investigation
SIP	State Implementation Plan
SLR	Sea Level Rise
SoCalGas	Southern California Gas
STLC	soluble threshold limit concentration
SWMP	Statewide Storm Water Management Plan
SWRCB	State Water Resources Control Board
TCE	Temporary Construction Easement
TSCA	Toxic Substance Control Act
TTLC	Total Threshold Limit Concentration
U.S.	United States
U.S. EPA	United States Environmental Protection Agency
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	United States Department of Transportation
VdB	Root mean square vertical vibration velocity in decibels
WP	Work Plan

EXECUTIVE SUMMARY

The Los Angeles County Metropolitan Transportation Authority (Metro) is partnering with the Federal Railroad Administration (FRA), BNSF Railway (BNSF), and the City of Santa Fe Springs (City) to construct an overpass at the intersection of Rosecrans Avenue, Marquardt Avenue, and the BNSF right of way (ROW) in the City of Santa Fe Springs (Project). The project area is bordered by Foster Road to the north, Interstate 5 (I-5) to the south, Carmenita Road to the west, and Valley View Avenue to the east.

The Rosecrans/Marquardt Grade Separation Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA), FRA's Procedures for Considering Environmental Impacts (FRA Procedures), and the Council on Environmental Quality (CEQ) NEPA implementing regulations. The purpose of this Environmental Assessment (EA) is to assess the potential direct, indirect, and cumulative impacts on the human and natural environment resulting from the Project. As the NEPA Lead Agency, FRA has the primary responsibility for preparing the EA.

The Project has been selected for federal funding through the 2016 Transportation Investment Generating Economic Recovery (TIGER) competitive grant program. The FRA is administering TIGER grant funds for the construction of the Project. Other funding sources for the Project include Proposition 1A, Measure R, State's Section 190 program, and the BNSF Railway Railroad Share.

The purpose of the Project is to:

1) Improve safety;

2) Maintain access to the railroad for emergency responders;

3) Maintain existing railroad facilities and operations; and

4) Accommodate future High-Speed Rail (HSR) in the corridor.

The Rosecrans/Marquardt Avenue and BNSF railroad tracks intersection experiences an average of 45,000 vehicles and 112 trains traveling through the intersection within each 24-hour period, as estimated using Los Angeles County Department of Public Works traffic data from 2011 (Los Angeles County Department of Public Works, 2015). The BNSF line serves approximately 55 long distance and local freight trains, as well as up to 57 passenger trains for both Metrolink commuter and Amtrak within a 24-hour time period (Los Angeles County Metropolitan Tranportation Authority, 2016). The existing BNSF railroad tracks and roadway are at the same grade. This causes a high volume of vehicle conflicts at the intersection. In addition, the railroad crossing traverses the intersection diagonally, which results in poor sight distance between roadway and railroad vehicles.

The combination of these factors has caused the intersection to experience a higher proportion of traffic incidents than average, including fatalities. The ongoing danger has prompted the California Public Utilities Commission (CPUC) under Section 190 to rate this intersection as the most hazardous at-grade railroad crossing in the state. The completion of this Project would alleviate the existing vehicle conflicts and safety hazards at the intersection.

Motorist, cyclist, bus, and emergency vehicle access will need to be provided at all times during construction of the Project. In addition, train volume in the BNSF corridor is anticipated to increase in the future. Additionally, a third BNSF track is planned for this corridor. The Project would facilitate continued access to and around the project area, including access to the railroad.

The intersection of railroad and roadway infrastructure poses competing interests, which lead to collisions and accidents in the project area. To accommodate existing and planned railroad facilities and operations, the Project would elevate Rosecrans Avenue to an overpass, which would allow critical improvements along the roadway and BNSF ROW to occur.

The BNSF corridor has been identified as the proposed corridor for the Los Angeles to Anaheim segment of the California High Speed Rail (HSR) system. FRA's Record of Decision (ROD) for the California High-Speed Train System Tier I EIR/EIS identified the BNSF corridor (identified as the "LOSSAN Corridor" in the ROD) as the preferred alignment for the high-speed rail system. The project area does not currently accommodate for future HSR planned in the BNSF railroad corridor. The Project would be designed to accommodate and not preclude future HSR infrastructure, if after completing the necessary project-level environmental reviews, FRA selects a build alternative using the BNSF railroad corridor. This will minimize time and costs between both projects.

This EA includes a discussion of Alternative 1 (No Build Alternative), which serves as a baseline for comparing potential impacts resulting from the Project. The No Build Alternative includes only regular maintenance and repair activities necessary to keep the roadways and railroad tracks operational at existing service. Under this alternative, the current configuration of the Rosecrans/Marquardt Avenue and BNSF railroad tracks intersection would be maintained. This alternative would not achieve the desired safety or circulation improvements, and would therefore, not meet the Project purpose and need.

Under Alternative 2 (Build Alternative), Rosecrans Avenue would be re-aligned to the south, and an overpass would be constructed over the BNSF railroad tracks. The southern leg of Marquardt Avenue would be extended under the overpass and connected to Rosecrans Avenue. The northern leg of Marquardt Avenue would be connected to Stage Road. A frontage road would also be constructed to connect Anson Avenue to the northern leg of Marquardt Avenue and Stage Road. Traffic signals would be installed on Rosecrans Avenue: one at the intersection with Marquardt Avenue to the west, and one to the east of the overpass structure at the intersection with Iseli Road. **Table S-1-1** below identifies impacts anticipated to result from the Project.

Table S-1-1. Impact Summary

Environmental Topic	Alternative 2: Offset Overpass with Connector Road
Air Quality	No impact with avoidance and minimization measures
Animal Species	No Impact
Coastal Zone	No Impact
Consistency with Regional and Local Plans and Programs	No impact with avoidance and minimization measures
Community Character and Cohesion	No impact with avoidance and minimization measures
Cultural Resources	No impact with avoidance and minimization measures
Environmental Justice	No Impact
Existing and Future Land Use	No impact with avoidance and minimization measures
Farmlands/Timberlands	No Impact
Geology/Soils/Seismicity	No Impact
Population Growth	No Impact
Hazardous Waste	No impact with avoidance and minimization measures
Hydrology & Floodplain	No Impact
Invasive Species	No Impact
Existing and Future Land Use	No impact with avoidance and minimization measures
Noise & Groundborne Vibrations	No impact with avoidance and minimization measures
Parks & Recreational Facilities	No Impact
Plant Species	No Impact
Relocations and Real Property Acquisition	No impact with avoidance and minimization measures
Threatened & Endangered Species	No Impact

Environmental Topic	Alternative 2: Offset Overpass with Connector Road
Traffic & Transportation	No impact with avoidance and minimization measures
Utilities/Emergency Services	No impact with avoidance and minimization measures
Visual/Aesthetics	No impact with avoidance and minimization measures
Water Quality & Storm Water	No impact with avoidance and minimization measures
Wetlands & Other Waters	No Impact
Wild & Scenic Rivers	No Impact

1.0 PURPOSE AND NEED OF THE PROJECT

1.1 Introduction

The Los Angeles County Metropolitan Transportation Authority (Metro) is partnering with the Federal Railroad Administration (FRA), BNSF Railway (BNSF), and the City of Santa Fe Springs (City) to construct an overpass at the intersection of Rosecrans Avenue, Marquardt Avenue, and the BNSF right of way (ROW) in the City of Santa Fe Springs (Santa Fe Springs) (Project). The study area is bordered by Foster Road to the north, north of Interstate 5 (I-5) to the south, Carmenita Road to the west, and west of Valley View Avenue to the east (see **Figure 1-1.** Regional Location Map**, Figure 1-2.** Project Location Map, **Figure 1-3**. Project Area).

FRA and Metro have prepared this Rosecrans/Marquardt Grade Separation Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA), FRA Procedures for Considering Environmental Impacts (FRA Procedures), and the Council on Environmental Quality (CEQ) NEPA implementing regulations. The purpose of this EA is to assess the potential direct, indirect, and cumulative impacts on the human and natural environment resulting from the Project. As the NEPA Lead Agency, FRA has the primary responsibility for preparing the EA.

The Project has been selected for federal funding through the 2016 Transportation Investment Generating Economic Recovery (TIGER) competitive grant program. The FRA is administering TIGER grant funds for the construction of the Project. Other funding sources for the Project include Proposition 1A, Measure R, State's Section 190 program, and the BNSF Railway Railroad Share.

1.2 Project Area and Study Area

The project area is in an industrial area of Santa Fe Springs, and includes the existing roadways; the BNSF railroad tracks; and industrial and commercial buildings. The existing roadways are asphalt-paved with curbs, gutters, and sidewalks, and provide access to industrial and commercial businesses. Existing roadways in the project area include:

- Rosecrans Avenue, an 84-foot-wide, 4-lane roadway (two lanes in each direction) within a 100-foot-wide ROW that runs in an east-west direction and is classified as a major arterial roadway with approximately 25,000 vehicle trips per day;
- Marquardt Avenue, a 64-foot-wide, 2-lane roadway (one lane in each direction) within an 80-foot-wide ROW that runs in a north-south direction and is classified as a minor arterial roadway with approximately 5,000 vehicle trips per day;

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Figure 1-1. Regional Location Map

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Figure 1-2. Project Location Map

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Figure 1-3. Project Area

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- Stage Road, a 35 to 40-foot-wide, 2-lane roadway (one lane in each direction) within a 70-foot-wide ROW that runs in a northwest to southeast direction with exclusive eastbound and westbound turn lanes onto Marquardt Avenue from Rosecrans Avenue, approximately 80 feet north of and parallel to the BNSF railroad tracks, and is classified as a major arterial roadway with approximately 5,000 to 10,000 vehicle trips per day; and
- Anson Avenue, a 50-foot-wide, 2-lane cul-de sac (one lane in each direction) within a 64-foot-wide ROW that runs in a north-south direction and is approximately 700 feet east of the Rosecrans/Marquardt intersection and BNSF railroad tracks intersection.

Existing BSNF railroad tracks diagonally traverse the project area at grade level from northwest to southeast through the Rosecrans/Marquardt intersection. The project area is zoned as light industrial and is populated with industrial and commercial buildings (City of Santa Fe Springs, 2007b). A motorcycle parts store is in the northeast corner of the Rosecrans/Marquardt intersection, a warehouse in the southeast corner of the intersection, a metal stamping facility in the southwest corner of the intersection, and offices and a recycling facility in the southeast corner of the intersection.

The railroad corridor that runs through the project area serves approximately 55 long distance and local freight trains, as well as an average of 57 passenger trains for both Metrolink and Amtrak, making it the second busiest intercity passenger railroad corridor in the nation (Biggs Cardosa Associates, Inc., 2016). Most of the long-distance freight traffic along the corridor goes in and out of the Ports of Long Beach and Los Angeles, and the corridor is an important route for the movement of goods from the ports to the rest of the country.

The project area is within the Los Angeles – San Diego – San Luis Obispo Rail Corridor (LOSSAN Corridor), a 351-mile rail corridor that travels through a 6-county coastal region in Southern California. The LOSSAN Corridor is under jurisdiction of the LOSSAN Rail Corridor Agency, which is a joint powers authority originally formed in 1989 that works to increase ridership, revenue, capacity, reliability, coordination and safety on the coastal rail line between San Diego.

The railroad corridor has been designated by the United States Department of Defense as part of the Strategic Rail Corridor Network (STRACNET). STRACNET is an interconnected and continuous rail line network consisting of over 36,000 miles of track serving over 120 defense installations. Railroad designated for STRACNET must comply with certain specifications that meet the needs of the United States military (Military Traffic Management Command Transporation Engineering Agency, 1998). In addition, the railroad corridor has been identified by the California High-Speed Rail Authority (CHSRA) as a viable shared HSR corridor alternative for the LA-Anaheim section.

A study area is the area in which direct and/or indirect impacts associated with a project are likely to occur at their greatest intensity. The study area is inclusive of the project area, and exact study area boundaries differ between specific environmental topics. The study area for each environmental topic is described within its respective topic section of Chapter 3.

1.3 Project Background

In 2003, the Project was environmentally cleared under the California Environmental Quality Act (CEQA) in an Environmental Impact Report (EIR) that was prepared for the Third Track and Grade Separation Project on the BNSF Railway East - West Main Line Railroad Track (Triple Track Project) (State Clearing House (SCH) #200204111), with Caltrans as the CEQA Lead Agency. The objective of the Triple Track Project was to increase the efficiency of the BNSF main east-west corridor to better accommodate existing and future freight and passenger service and to allow specific increases in the speed and volume of planned intercity and commuter railroad passenger service. Specific improvements included in the Triple Track Project are:

- Installation of a specific set of grade separations to substantially enhance safety and traffic flow on surface streets throughout the railroad corridor; and
- Installation of a third main track to enhance the efficiency of train movement along this corridor to ensure passenger service operates on a frequent and reliable schedule.

Several grade separations were environmentally cleared through the Triple Track Project EIR. Two of the grade separations, Passons Boulevard and Valley View Avenue, were completed in 2012 and 2014 respectively.

Since the 2003 Triple Track Project EIR was completed, the design of the Project has changed. The Project is statutorily exempt from CEQA, and will not require additional environmental review under CEQA (see Appendix D).

1.4 Purpose and Need

The purpose of the Project is to:

1) Improve safety;
2) Maintain access to the railroad for emergency responders;
3) Maintain existing railroad facilities and operations; and
4) Accommodate future High-Speed Rail in the corridor.

The Rosecrans/Marquardt Avenue and BNSF railroad tracks intersection experiences an average of 45,000 vehicles and 112 trains traveling through the intersection within each 24-hour period, as estimated using Los Angeles County Department of Public Works traffic data from 2011 (Los Angeles County Department of Public Works, 2015). The BNSF line serves approximately 55 long distance and local freight trains, as well as up to 57 passenger trains for both Metrolink commuter and Amtrak within a 24-hour time period (Los Angeles County Metropolitan Tranportation Authority, 2016). The existing BNSF railroad tracks and roadway are at the same grade. This causes a high volume of vehicle conflicts at the intersection. In addition, the railroad crossing traverses the intersection diagonally, which results in poor sight distance between roadway and railroad vehicles.

The combination of these factors has caused the intersection to experience a higher proportion of traffic incidents than average, including fatalities. The ongoing danger has prompted the CPUC under Section 190 to rate this intersection as the most hazardous at-grade railroad crossing in the state (see Appendix E and Appendix F). The completion of this Project would alleviate the existing vehicle conflicts and safety hazards at the intersection.

Motorist, cyclist, bus, and emergency vehicle access will need to be provided at all times during construction of the Project. In addition, train volume in the BNSF corridor is anticipated to increase in the future. Additionally, a third BNSF track is planned for this corridor. The Project would facilitate continued access to and around the project area, including access to the railroad.

The intersection of railroad and roadway infrastructure poses competing interests, which lead to collisions and accidents in the project area. To accommodate existing and planned railroad facilities and operations, the Project would elevate Rosecrans Avenue to an overpass, which would allow critical improvements along the roadway and BNSF ROW to occur.

The project area does not currently accommodate for future HSR planned in the BNSF railroad corridor. At the conclusion of the California High-Speed Train System Tier 1 EIR/EIS, FRA and CHSRA identified the BNSF corridor as the proposed corridor for the HSR Los Angeles to Anaheim project section. FRA and CHSRA are currently conducting further Tier 2 environmental analysis and this Project would be designed to accommodate and not preclude future HSR infrastructure, minimizing time and costs between both projects.

2.0 DESCRIPTION OF ALTERNATIVES

2.1 Introduction

2.2 Criteria for Evaluating Alternatives

This EA evaluates the proposed action and the Project alternatives that were developed to meet the identified purpose and need of the Project. When developing alternatives, the following criteria were considered:

- Traffic impacts during construction;
- Required utility relocations;
- Access to businesses during construction;
- ROW impacts;
- Impacts to railroad operations; and
- Project costs.

Several build alternatives were considered, but only one build alternative was recognized as feasible, Alternative 2: Offset Overpass with Connector Road. The Build Alternative was identified as a suitable alternative using the criteria above. Therefore, the alternatives considered for the Project are the Alternative 1 (No Build Alternative) and one Build Alternative (Alternative 2). Resource areas evaluated for each alternative include land use, community impacts, utilities/emergency services, traffic and transportation/pedestrian and bicycle facilities, visual/aesthetics, cultural resources, water quality and storm water runoff, hazardous waste/materials, air quality, and noise. In addition, the potential cumulative impact of past, present, and reasonably foreseeable future projects in the project region are evaluated with respect to these resources.

2.3 Evaluated Alternatives

2.3.1 Alternative 1: No Build Alternative

Under Alternative 1 (No Build Alternative), the current configuration of the Rosecrans/Marquardt Avenue and BNSF railroad tracks intersection would be maintained, and the at-grade railroad crossing would remain. This alternative would not improve safety because each user (trains, vehicles, and pedestrians) would continue sharing the Rosecrans/Marquardt intersection crossing, which would not address the risk of collision. Additionally, the segment of BNSF corridor in the project area has been planned for a third set of BNSF tracks, which would require changes in roadway geometry in the project area. Existing conditions are not conducive to accommodate future HSR infrastructure. Under the No Build Alternative, construction activities would not be completed. However, this alternative would not help to achieve the desired safety or circulation improvements, and would therefore not meet the Project purpose and need.

2.3.2 Alternative 2: Offset Overpass with Connector Road (Build Alternative)

Under Alternative 2 (Build Alternative), Rosecrans Avenue would be realigned to the south, and an overpass would be constructed to raise Rosecrans Avenue over Marquardt Avenue, the BNSF ROW, and Stage Road (see **Figure 2-1.** Alternative 2 – Plan View**)**. The southern leg of Marquardt Avenue would be extended under the overpass and connected to Rosecrans Avenue. The northern leg of Marquardt Avenue would be connected to Stage Road. A frontage road would also be constructed to connect Anson Avenue to the northern leg of Marquardt Avenue and Stage Road.

Traffic signals would be installed along Rosecrans Avenue: one at the intersection with Marquardt Avenue to the west, and one to the east of the overpass at the intersection with Iseli Road. Other improvements include sidewalk construction, street lighting installation, landscape installation/replacement, parking lot reconfiguration, and utility relocations. Alternative 2 would require full acquisition of eight properties, including six industrial properties and two commercial properties (Sierra Plaza and Animal Hospital), and various partial and temporary easements, including seven roadway easements, one footing easement, one utility easement, and 15 temporary construction easements (TCEs) (see **Figure 2-2.** Right of Way Exhibit). Construction would be completed over an approximately 24-month period.

Improvements considered under Alternative 2 would meet the purpose and need of the Project. Connectivity between Rosecrans Avenue, Marquardt Avenue, Stage Road, and Anson Avenue would be maintained through the use of signalized intersections. Utilities in the existing roadway would remain in their existing alignment, minimizing the duration of construction. Proposed transportation structures would be located outside of the BNSF ROW, so that a third set of BNSF tracks and future HSR tracks would be accommodated. The majority of construction activities under this alternative would be completed outside of the existing Rosecrans Avenue footprint in order to meet the purpose and need element, "maintain access to the railroad for emergency responders", which includes access during Project construction. Access disruptions to residents, businesses, and the community during construction would be minimized to the maximum extent feasible. Operation of Alternative 2 would enhance mobility and quality of life for the community. Therefore, the Project would help achieve the desired safety and circulation improvements, and would meet the Project purpose and need.

2.4 Alternatives Dismissed

The following alternatives were considered, but dismissed in January of 2016 after completion of the Alternatives Analysis Report that was prepared for the Project (Biggs Cardosa Associates, Inc., 2016).

2.4.1 Offset Overpass with One-Way Frontage Roads

Under the Offset Overpass with One-Way Frontage Roads Alternative, Rosecrans Avenue would be realigned to the south of the existing roadway footprint with a grade-separated overpass. Marquardt Avenue, south of Rosecrans Avenue, would maintain partial connectivity to Rosecrans Avenue with the use of frontage roads. Marquardt Avenue (south) would continue under the realigned Rosecrans Avenue and would connect to an on-ramp and off-ramp to Rosecrans Avenue on either side of the underpass. Due

to the loss of northbound right turn and westbound left turn movements, Marquardt Avenue (south) would only be accessible to Rosecrans Avenue in the eastbound travel direction, west of the railroad corridor.

This alternative would affect 23 properties through ROW acquisition including full acquisition of eight properties, including six industrial properties and two commercial properties (Sierra Plaza and Animal Hospital), and various partial and temporary easements, including seven roadway easements, one footing easement, one utility easement, and 15 TCEs (see **Figure 2-2.** Right of Way Exhibit). The ROW costs associated with this alternative would be substantial. Under this alternative, the Project purpose and need would be met; however, Alternative 2 would accomplish the same improvements with minimized ROW impacts. Therefore, the alternative was dismissed from consideration.

2.4.2 Offset Underpass with Frontage Roads

The Offset Underpass with Frontage Roads Alternative would depress Rosecrans Avenue underneath the BNSF tracks and adjacent roadways. For this alternative, the proposed horizontal realignment of Rosecrans Avenue would be the same as described in the Offset Overpass with One-Way Frontage Roads alternative (Section 2.4.1). Marquardt Avenue (south) would continue over the realigned Rosecrans Avenue and would connect to an on-ramp and off-ramp to Rosecrans Avenue on either side of the overpass. Marquardt Avenue (north) would be connected to the extension of Stage Road in this alternative, and would stay at-grade on its own roadway bridge across the lowered portion of Rosecrans Avenue. The connection to Rosecrans Avenue would be maintained through the extension of Anson Avenue to Stage Road.

Shoofly tracks would be required to maintain railroad operations during construction, increasing cost and lengthening the duration of construction (36 to 40 months). Depressing the roadway would require significant utility relocations, which are especially challenging for the gravity lines (e.g., sewers and storm drains). Another challenge for an underpass alternative is accommodating future HSR. BNSF infrastructure constructed under this alternative would require widening, or partial demolition and reconstruction, to accommodate future HSR. While an underpass would require less ROW acquisition (seven full property acquisitions) the lengthy construction period, long-term disruption in traffic due to a long construction period, substantial utility relocations, substantial railroad impacts, substantial costs, and lack of HSR accommodation would result in several challenges under this alternative. Therefore, the alternative was dismissed from consideration.

2.4.3 Offset Underpass with Connector Roads

Under this alternative, the proposed realignment of Rosecrans Avenue would be similar to the alignment described for the Offset Overpass with One-Way Frontage Roads alternative (Section 2.4.1). Marquardt Avenue (south) would stay at grade and be extended across the lowered Rosecrans Avenue on a roadway bridge. The roadway would continue through the existing footprint of Rosecrans Avenue and connect to the realigned Rosecrans Avenue at a signalized intersection, similar to Alternative 2. Marquardt Avenue (north) would also be connected to the extension of Stage Road in this alternative similarly to Alternative

2. The roadway would stay at grade on its own bridge across the lowered portion of Rosecrans Avenue. The direct connection to Rosecrans Avenue would be severed for both Marquardt Avenue (north) and Stage Road. Access to Rosecrans Avenue would be provided through an extension of Anson Avenue.

Complications with the Offset Underpass with Connector Roads alternative would be the same as identified for the Offset Underpass with Frontage Roads alternative (Section 2.4.2). Therefore, the alternative was dismissed from consideration.

2.4.4 Offset Overpass with Connector Roads

Under this alternative, the proposed improvements would include all features described in Alternative 2: Offset Overpass with Connector Road, and would include an additional Connector Road to complete connection from Marquardt Avenue (north) to Rosecrans Avenue. The Connector Road was removed due to truck turning issues. The City of Santa Fe Springs, after review with their Fire Department, supported eliminating this connection to mitigate truck turning issues. Additionally, traffic volumes are light, and eliminating this connection did not result in significant trip redistribution in the traffic analyses.

2.4.5 Other Alternatives Withdrawn from Consideration

Other alternatives withdrawn from consideration include those that depressed the BNSF tracks (trench) under the roadways, those that shifted the alignment of Rosecrans Avenue to the north, and those that raised or lowered Marquardt Avenue (Biggs Cardosa Associates, Inc., 2016).

Lower BNSF Tracks into Trench or Raise Tracks

A trench is not feasible because of the proximity of the Coyote Creek Channel. The BNSF tracks would need to be lowered approximately 30 feet below existing grade to provide adequate vertical clearance underneath Rosecrans Avenue (which would remain at-grade). With the longitudinal slopes permitted by BNSF, it would be impossible to return the tracks to existing grade at the bridge over the Coyote Creek Channel. Depressing the tracks would therefore sever this flood control channel, located less than 0.25 mile northwest of the railroad crossing. Eliminating the flood control channel is not feasible.

Other key concerns are the industrial spur tracks, lead track, and storage tracks to the southeast of the grade crossing. These tracks are important to BNSF's operations, and the connection to these tracks would be severed by any lowering of the tracks. Similarly, raising the BNSF tracks would sever the spur, lead, and storage tracks from the mainline tracks. Modifications to the rail elevations (lowering or raising) are not feasible.

Shift Rosecrans Avenue to the North

Realigning Rosecrans to the north is not feasible because of the skewed orientation of the BNSF tracks with the Rosecrans/Marquardt intersection. Realigning Rosecrans to the north would reduce the distance between the critical point of vertical clearance over (or under) BNSF's ROW and Coyote Creek. Reconstruction of the Coyote Creek Bridge would be necessary, resulting in added project costs, and requiring coordination with the Los Angeles County Flood Control District, the United States Army Corps

of Engineers, the Regional Water Quality Control Board, and the California Department of Fish and Wildlife.

Raise or Lower Marquardt Avenue

Raising or lowering Marquardt Avenue to connect to the raised or lowered portion of Rosecrans Avenue was considered. Raising or lowering Marquardt Avenue is not feasible because of the substantial ROW impacts, primarily because of the loss of access to the properties from Marquardt Avenue, extending approximately 1,000 feet to the north and south of Rosecrans Avenue. As a result, the vast majority of fronting properties within these limits would require full acquisition and relocation, adding substantial project costs and greatly affecting the surrounding businesses.

Figure 2-1. Alternative 2 – Plan View

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Figure 2-2. Right of Way Exhibit

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3.0 Environmental Resources, Impacts, and Mitigation

3.1 Environmental Issues Excluded from Discussion

As part of the environmental analysis carried out for the Project, the following environmental issues were excluded from analysis in this EA. The following resources were excluded because the resources were not identified as present in or near the project area according to the Community Impact Assessment and Natural Environmental Resources (Minimal Impacts) conducted for the Project (GPA Consulting, 2016a; GPA Consulting, 2016c). As a result, there is no further discussion about these resources in this document:

- Farmlands/Timberlands;
- Coastal Zone;
- Wild and Scenic Rivers; and
- Natural Communities (vernal pools, riparian habitat, grasslands, or woodlands).

In addition to resources not present, other resources found within the study area were found not be impacted by the Project. Those resources include:

- Parks and Recreational Facilities: No parks are in the project footprint; however, the following parks are in the 0.5-mile buffer:
    - John Zimmerman Park at 13031 Shoemaker Ave in Norwalk;
    - Gardenhill Park at 14435 Gardenhill Drive in La Mirada;
    - Neff Park at 14300 San Bruno Drive in La Mirada;
    - Ramona Park at Mapledale Street and Pontlavoy Avenue in Norwalk;
    - Frontier Park at Foster Road and Marquardt Avenue in La Mirada; and
    - Norwalk Golf Center at 13717 Shoemaker Avenue in Norwalk (GPA Consulting, 2016a).

  While several parks are within the 0.5-mile buffer, no parks or recreational facilities are located directly in the project area. Therefore, the Project would not result in any permanent impacts or acquisition of parks or recreational facilities. Additionally, none of the parks or recreational facilities that are outside of the project area, but within the 0.5-mile buffer, would be indirectly affected by construction noise, pollutant emissions, or visual/aesthetic changes because the distance from the project area exceeds the reach of any potential direct or indirect impacts resulting from expected construction activity. Therefore, no impacts on parks and recreational facilities are anticipated to result from the Project.

- Geology/Soils/Seismicity: The project area is currently occupied by existing transportation infrastructure that has been designed according to current standards to ensure a reasonable degree of structural integrity. The Project would also be constructed according to these same

standards and would be able to withstand typical bedrock accelerations and site-specific geologic and soil conditions. Because the Project would not worsen existing hazards or result in additional exposure of the public to hazards, no impacts related to geology/soils/seismicity are anticipated to result from the Project.

- Hydrology and Floodplain: According to the Federal Emergency Management Agency (FEMA) Map Number 06037C1843F, the Project is in Zone X, which is an area outside of the base floodplain (100-year) elevation of a water course or lake. The project area is highly developed and contains little pervious surface. The Project would not increase impervious surface, alter hydrology, and is not in a floodplain; therefore, no impacts on hydrology and floodplain are anticipated to result from the Project.
- Wetlands and Other Waters: The biological study area (BSA) is in an urban area of Los Angeles County, and is completely developed. Coyote Creek, a concrete-lined channel owned and operated by the Los Angeles County Flood Control District, flows under Rosecrans Avenue at the western end of the BSA (GPA Consulting, 2016c). No other waterways exist within the BSA. Roadway striping would be required along Rosecrans Avenue over Coyote Creek; however, the limits of structural work for the Project would be approximately 15 feet to the east of Coyote Creek. The Project would not require work within waters of the United States (U.S.) or state; therefore, regulatory permits from the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), or the California Department of Fish and Wildlife (CDFW) would not be required for the Project. Because the Project would not encroach into waterways, no impacts on wetlands or other waters are anticipated to result from the Project.
- Threatened and Endangered Species: According to the California Natural Diversity Database (CNDDB) and the United States Fish and Wildlife Service (USFWS) species list searches, special-status species have the potential to be in the BSA based on geographical location. However, the project area is entirely within an urbanized area of Los Angeles County. Because of past disturbance, existing development, and current operations within the railroad corridor, there is no suitable habitat for any federally or state-listed threatened or endangered plant or wildlife species within the BSA, and no suitable habitat was observed within the BSA during a project level survey of the project area (GPA Consulting, 2016c). Because federally or state-listed species are not expected to be in the BSA, no impacts on federally or state-listed species are anticipated to result from the Project.
- Invasive Species: Several invasive plant species are in the BSA, including Peruvian pepper (*Schinus molle*), Brazilian pepper (*Schinus terebinthifolius*), and Canary Island date palm (*Phoenix canariensis*) (GPA Consulting, 2016c). Existing vegetation would be preserved to the extent feasible, and Best Management Practices (BMP), such as identification of existing invasive species, avoidance of invasive species in erosion control, staff training, equipment cleaning, and

monitoring would be implemented in accordance with Executive Order 13112. Therefore, the introduction or spread of invasive species is not anticipated.

3.2 Existing and Future Land Use

The following discussion incorporates the results of the Community Impact Assessment (CIA) prepared for the Project (GPA Consulting, 2016a).

3.2.1 Regulatory Setting

Federal Railroad Administration

1999 Procedures for Considering Environmental Impacts

64 FR §28545 (May 26, 1999) outlines the procedures for the assessment of environmental impacts of actions and legislation proposed by FRA. Assessment procedures require that impacts of each alternative on local land use controls and comprehensive regional planning as well as on development within the affected environment, including, where applicable, other proposed Federal actions in the area. Where inconsistencies or conflicts exist, this section should describe the extent of reconciliation and the reason for proceeding notwithstanding the absence of full reconciliation. If conflicts would result from the project, early notification to the State or Federal land management entity, and incorporation of such conflicts into the environmental document, would be required.

City of Santa Fe Springs

General Plan and Land Use Map

The City of Santa Fe Springs General Plan is a comprehensive planning document that addresses many aspects of community life in the city (City of Santa Fe Springs, 1994). The land use element of the general plan provides direction for future planning, designates future land use patterns, provides an inventory of current land uses, and specifies the appropriate density and intensity of development. The City of Santa Fe Springs General Plan Land Use Map shows the land use designations in the planning area (City of Santa Fe Springs, 2007a).

Zoning Ordinance and Zoning Map

The City of Santa Fe Springs Zoning Ordinance is included in Chapter 155 of the City of Santa Fe Springs Municipal Code, and is intended to implement the City of Santa Fe Springs General Plan by dividing the city into zoning districts (City of Santa Fe Springs, 2015). The City of Santa Fe Springs Zoning Ordinance establishes permissible land uses and regulations for current and future development in each zoning district. The City of Santa Fe Springs Zoning Map shows where the zoning districts are throughout the city (City of Santa Fe Springs, 2007b).

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Figure 3-1. Community Impacts Study Area

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City of La Mirada

General Plan and Land Use Map

The City of La Mirada General Plan guides the city to the year 2020 by setting forth goals and policies addressing land use, economic development, housing, and related issues (City of La Mirada, 2003a). The land use element of the general plan guides land use planning in the city by providing a framework for issues examined in the general plan and identifying how land will be used for business, housing, public facilities, transportation, and open space. The City of La Mirada General Plan Land Use Map shows the land use designations in the planning area (City of La Mirada, 2003b).

Zoning Ordinance and Zoning Map

The City of La Mirada Zoning Ordinance is included in Title 21 of the City of La Mirada Municipal Code, and is intended to implement the City of La Mirada General Plan by dividing the city into zoning districts (City of La Mirada, 2015). The City of La Mirada Zoning Ordinance establishes permissible land uses and regulations for current and future development in each zoning district. The City of La Mirada Zoning Map shows where the zoning districts are throughout the city (City of La Mirada, 2012).

City of Norwalk

General Plan and Land Use Map

The City of Norwalk General Plan is a policy document that represents the official statement of the city regarding its social, physical, and economic goals (City of Norwalk, 2016). The City of Norwalk General Plan determines the potential growth of the city, including residential, commercial and industrial growth, and establishes goals to accommodate growth. The City of Norwalk General Plan Land Use Map shows the land use designations in the planning area (City of Norwalk, 2015).

Zoning Ordinance and Zoning Map

The City of Norwalk Zoning Ordinance is included in Title 17 of the City of Norwalk Municipal Code, and is intended to implement the City of Norwalk General Plan by dividing the city into zoning districts (City of Norwalk, 2016). The City of Norwalk Zoning Ordinance establishes permissible land uses and regulations for current and future development in each zoning district. The City of Norwalk Zoning Map shows where the zoning districts are throughout the city (City of Norwalk, 2015).

3.2.2 Affected Environment

The study area for this analysis was determined using aerial photographs to identify physical characteristics, such as roadways and land use patterns, which naturally delineate communities and neighborhoods. Land use, zoning, and community facilities maps for jurisdictions in the study area were also reviewed.

A site visit was conducted on February 4, 2016 to verify physical delineators, and to document community facilities and general neighborhood cohesion. The study area boundaries for community impacts are

generally within a 0.5-mile radius of the project area, but were adjusted to be consistent with roadways that serve as physical delineators, such as Imperial Highway (State Route 90) to the north, La Mirada Boulevard and Escalona Road to the east, Bloomfield Avenue to the west, and Alondra Boulevard to the south (see **Figure 3-1.** Community Impacts Study Area). The study area is in the cities of Santa Fe Springs, La Mirada, and Norwalk.

Developed Land Uses

The central portion of the study area in Santa Fe Springs is dominated by commercial and industrial buildings. Residential neighborhoods are the primary land uses in the eastern portion of the study area in La Mirada, as well as in the western portion of the study area in Norwalk.

The project area includes the existing roadways (Rosecrans Avenue, Marquardt Avenue, Stage Road, and Anson Avenue); the BNSF railroad tracks; and industrial and commercial buildings. The existing roadways are asphalt-paved with curbs, gutters, and sidewalks, and provide access to industrial and commercial businesses. Specifics about the project area roadways and the BNSF corridor are discussed in Section 3.8.

Existing Land Use and Zoning Designations

Land uses in the project area within the City of Santa Fe Springs are dominated by commercial and industrial buildings. According to the City of Santa Fe Springs General Plan Land Use Map and Zoning Map, the project area is zoned as M-2 (Heavy Manufacturing) and M-2-PD (Heavy Manufacturing – Planned Development Overlay Zone) (City of Santa Fe Springs, 2007a; City of Santa Fe Springs, 2007b).

Figure 3-2. Zoning Map illustrates the zoned land uses in the project area, per the City of Santa Fe Springs Zoning Map.

Existing land uses in the eastern portion of the study area in La Mirada are primarily designated as Low Density Residential, with a few areas that are designated as High Density Residential, Medium Density Residential, Commercial, Industrial, Public/Institutional, and Parks and Open Space (City of La Mirada, 2003b). This portion of the study area is primarily zoned as R-1 (Single-Family Residential), with some properties that are zoned as R-4 (High-Density Residential), R-3 (Medium Density Residential), C-4 (General Commercial), M-2 (Industrial), IHSP (Imperial Highway Specific Plan), and PUD (Planned Unit Development).

Existing land uses in the western portion of the study area in Norwalk are primarily designated as Low Density Residential, with a few areas that are designated as High Density Residential, Neighborhood Commercial, Professional Offices, General Commercial, Light Industrial, Heavy Industrial, and Open Space/Schools/Public Facilities (City of Norwalk, 2015). This portion of the study area is primarily zoned as R1 (Single Family Residential), with some properties that are zoned as R3 (Multiple Family High Density Residential), C1 (Restricted Commercial), C3 (General Commercial), PO (Professional & Office), CO (Commercial & Office), M1 (Light Manufacturing), M2 (Heavy Manufacturing), and OS (Open Space/Schools/Public Facilities) (City of Norwalk, 2015).

Figure 3-2. Zoning Map

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Growth and Development Trends

The study area is heavily developed with commercial and industrial uses in the central portion of the study area in Santa Fe Springs and eastern portion of Norwalk. Two residential neighborhoods are in the eastern and western portions of the study area in La Mirada and Norwalk, respectively.

Approximately 84 percent of Santa Fe Springs' nine square miles are zoned for commercial and industrial uses (City of Santa Fe Springs, 2015). Santa Fe Springs' daytime population is estimated to be 95,000 because of the employees that commute to the city (City of Santa Fe Springs, 2015). According to an online real estate website, currently 22 listings of industrial properties are for lease in Santa Fe Springs, ranging in size from 8,039 to 268,536 square feet (LoopNet, 2018).

Santa Fe Springs' population increased by 1,002 residents between 2000 and 2014, a growth rate of 6.1 percent, which was higher than Los Angeles County's 5.7 percent growth rate during that period (Southern California Association of Governments, 2015b). Santa Fe Springs' population in 2010 was 16,223, with a population density of 1,828 persons per square mile (United States Census Bureau, 2015). Southern California Association of Governments (SCAG) population projections predict that Santa Fe Springs's population will be approximately 20,300 people in 2035 (Southern California Association of Governments, 2012).Between 2000 and 2014, La Mirada and Norwalk had population growth rates of 5.5 percent and 2.2 percent, respectively, which were both lower than Los Angeles County's growth rate of 5.7 percent (Southern California Association of Governments, 2015a; Southern California Association of Governments, 2015c).

Table 3-1. Current and Future Development Projects in the Cities of Santa Fe Springs, La Mirada, and Norwalk lists current and future development projects in Santa Fe Springs, La Mirada, and Norwalk, which include two residential projects, several commercial and industrial projects, a transportation project, and a habitat restoration project (City of Santa Fe Springs, 2017; City of La Mirada, 2016; The Governor's Office Of Planning and Research, 2016). Planned development is current as of 2016 for La Mirada, and 2017 for Santa Fe Springs and Norwalk.

Table 3-1. Current and Future Development Projects in the Cities of Santa Fe Springs, La Mirada, and Norwalk

Project Name	Jurisdiction	Proposed Uses	Status
Residential			
Keana Development, LLC	City of Santa Fe Springs	Construct 50 condominiums with associated driveways, parking, pool area with clubhouse, and landscape.	Approved
The Orchards	City of La Mirada	Construct 41 detached, single-family, 2-story homes on a 4-acre site.	Constructed

Project Name	Jurisdiction	Proposed Uses	Status
Commercial			
Carmenita Plaza, LLC	City of Santa Fe Springs	Demolish the existing building to construct a new commercial building with a coffee shop, retail, and restaurant spaces.	Approved
Aldi Supermarket	City of Santa Fe Springs	Construct a 18,557-square foot grocery store building on 1.94 acres of a 3.94-acre property located at 13210 Telegraph Road.	Approved
Salt and Pepper Restaurant & Sports Bar	City of Santa Fe Springs	Salt and Pepper is adding 3,200 square foot to the west side of the existing 7,710 sq. ft. building located at 13325 Telegraph Road.	Approved
Azar Event Center	City of Santa Fe Springs	Azar Event Center is an indoor banquet hall facility that will be moving into a vacant 7,202 square foot single story building.	Approved
76 Gas Station	City of Santa Fe Springs	Construct a new gas station and convenience market.	Approved
PIH Health	City of Santa Fe Springs	Construct a medical office at approximately 35,076 square feet.	Approved
Starbucks Coffee	City of Santa Fe Springs	Convert a 2,400-square foot multi-tenant pad building to a single-tenant with the addition of a 105-square foot drive-thru window and drive-thru lane.	Approved
Crossroads Center	City of La Mirada	Construct a shopping center that includes a drug store, grocery store, and restaurants.	Constructed
Industrial			
Xebec Realty Partners	City of Santa Fe Springs	Construct a 58,396-square foot warehouse on a 3.01-acre site.	Approved

Project Name	Jurisdiction	Proposed Uses	Status
Cambridge Springs, LLC	City of Santa Fe Springs	Demolish an existing 132,808 square foot building and construct a new industrial building at 185,060 square feet.	Approved
CRW Leasing Co. Inc.	City of Santa Fe Springs	Construct a new 63,500-square-foot concrete tilt-up industrial building on 2.92-acre site.	Approved
Goodman Birtcher	City of Santa Fe Springs	Construct three concrete tilt-up buildings on a 54-acre site.	Approved
Romandel, LLC	City of Santa Fe Springs	Construct a new 21,563 square foot concrete tilt-up industrial building on a 1.33-acre site, which is located at 9911 Romandel Avenue.	Approved
Overton Moore Properties	City of Santa Fe Springs	Construct 41,046 square foot building on 2-acres of a 3.94-acre property located at the southeast corner of Painter Avenue and Telegraph Road, behind ALDI supermarket.	Approved
Chalmers Equity Group	City of Santa Fe Springs	Construct a concrete tilt-up building at approximately 13,500 square feet (Building 2). The 2.30-acre site is located at 12070 Altamar Place & 9070 Dice Road.	Approved
Transportation			
I-5 Freeway Corridor	Cities of Buena Park, La Mirada, Santa Fe Springs, Norwalk, Downey, and Commerce	Widen I-5 freeway from six lanes to 10 lanes to enhance capacity.	Under Construction
Habitat Restoration			
Median & Side Panel Turf Removal & Native Plant Replacement Project	City of Norwalk	Replace existing turf in median islands and side panels with native drought tolerant plantings.	Approved

Source: City of Santa Fe Springs, 2016; City of La Mirada, 2016; The Governor's Office of Planning and Research, 2016

3.2.3 Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in any changes to existing or future land uses. Growth and development within and surrounding the study area would continue according to existing land use and zoning designations, and no changes in land use or zoning would be required. Therefore, no impacts are anticipated.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

To implement the Project, full acquisition of ROW from full acquisition of eight properties, including six industrial properties and two commercial properties (Sierra Plaza and Animal Hospital) (see **Figure 2-2.** Right of Way Exhibit). As described above, land use on these properties is Industrial. Under the Build Alternative, these properties would be fully incorporated into the transportation facility because the overpass would be constructed within and over these properties. The properties would therefore no longer be used for industrial purposes, and the businesses on these properties would require relocation.

On the south side of the re-aligned Rosecrans Avenue, six of the eight parcels required for full acquisition would have a remnant area that would be available for potential reuse. Remnant parcels would likely be sold by Metro to recoup as much of the ROW costs as possible. For the remnant parcels on the east side of the project area, access would be provided from Stage Road. The remnant parcel immediately south of the grade crossing would have access provided from Marquardt Avenue. The remnant parcels on the southwest side would likely be combined into a single parcel, with a driveway connecting to Marquardt Avenue. For these remnant parcels, the design team has also made provisions for a future driveway from the new cul-de-sac.

Rosecrans Avenue and Marquardt Avenue are existing roadways, and the grade separation would replace existing access points; therefore, implementation of the Build Alternative would not provide new access to surrounding areas that could induce additional development and growth beyond what is already planned by the cities in the study area. Alternative 2 would not be expected to induce substantial growth in the study area; rather, it would result in safety improvements that would benefit existing and planned developments; therefore, the Project is not anticipated to result in impacts on developed and planned land uses, zoning, population growth, or development in the project area.

3.2.4 Avoidance, Minimization, and/or Mitigation Measures

Adequate vacancy of suitable industrial and commercial properties exists in Santa Fe Springs to accommodate relocated businesses without resulting in changes in land use outside of the project area (see Section 3.5). Land acquired for ROW would not require rezoning. Since the Project is not anticipated to result in substantial impacts on existing or future land uses in the study area, no mitigation measures are required.

3.3 Consistency with Regional and Local Plans and Programs

The following regional and local plans and programs are applicable to the Project and project area.

3.3.1 Regulatory Setting

Southern California Association of Governments 2008 Regional Comprehensive Plan

The SCAG 2008 Regional Comprehensive Plan (RCP) is an advisory document for the voluntary use of local agencies when preparing local plans and handling issues of regional significance (Southern California Association of Governments, 2008). The RCP addresses important regional issues, such as housing, traffic/transportation, water, and air quality, and presents a vision of how the region can balance resource conservation, economic vitality, and quality of life.

Southern California Association of Governments 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy and 2015 Federal Transportation Improvement Program

The SCAG 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) identifies and analyzes transportation needs for the region and creates a framework for project priorities (Southern California Association of Governments, 2012). The 2015 Federal Transportation Improvement Program (FTIP) is a capital listing of all transportation projects in the SCAG region.

The Project is listed in the 2015 FTIP, Amendment #15-04 as Project ID# LA0G1047, "Rosecrans/Marquardt Grade Separation: This Project includes construction of BNSF third track and grade separation at the intersection of Rosecrans/Marquardt in the City of Santa Fe Springs. This will result in enhancing the safety and traffic flow on surface streets throughout the rail corridor as well as enhancing the efficiency of train movement and possibly attract more ridership" (Southern California Association of Governments, 2015d).

Caltrans Service Development Plan – Pacific Surfliner South Corridor

The Pacific Surfliner South Corridor Service Development Plan (2013) describes the corridor, identifies proposed service expansion and operational improvements, presents the rationale for such expanded and improved services, and identifies candidate rail infrastructure investments needed to support growth and deliver improved operations. The service expansion, operational, and infrastructural improvements are consistent with the statewide vision and objectives established in the 2013 California State Rail Plan. The larger Triple Track Project has been incorporated into strategies outlined in the Service Development Plan.

LOSSAN Corridorwide Strategic Implementation Plan

The Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor Agency initiated the LOSSAN Corridorwide Strategic Implementation Plan to establish a corridorwide vision for passenger rail services. This vision was adopted by the LOSSAN Board of Directors in 2009, and the Final Report was completed in 2010. The plan calls for a review of the future of the entire rail corridor with an emphasis on Intercity Rail service. The larger Triple Track Project was included as part of the LOSSAN Corridorwide Strategic Implementation Plan to reach the goals established through the plan.

City of Santa Fe Springs General Plan

The City of Santa Fe Springs General Plan is a comprehensive planning document that addresses many aspects of community life in the city (City of Santa Fe Springs, 1994). The general plan includes the seven state-required elements of land use, circulation, housing, open space, conservation, safety, and noise.

City of La Mirada General Plan

The City of La Mirada General Plan guides the city to the year 2020 by setting forth goals and policies addressing land use, economic development, housing, and related issues (City of La Mirada, 2003a). The general plan includes the seven state-required elements, including land use, circulation, housing, open space, conservation, and safety and community services (which includes noise), as well as an economic element.

City of Norwalk General Plan

The City of Norwalk General Plan is a policy document that represents the official statement of the city regarding its social, physical, and economic goals (City of Norwalk, 2016). The City of Norwalk General Plan determines the potential growth of the city, including residential, commercial and industrial growth, and establishes goals to accommodate growth. The general plan includes the seven state-require elements, which include land use, circulation, housing, open space, conservation, safety, and noise, as well as community design, educational and cultural resources, and utility infrastructure.

3.3.2 Affected Environment

The study area boundaries for community impacts are generally within a 0.5-mile radius of the project area, but were adjusted to be consistent with roadways that serve as physical delineators, such as Imperial Highway (State Route 90) to the north, La Mirada Boulevard and Escalona Road to the east, Bloomfield Avenue to the west, and Alondra Boulevard to the south (see **Figure 3-1.** Community Impacts Study Area).

The study area is heavily developed with commercial and industrial uses in the central portion of the study area in Santa Fe Springs, and residential neighborhoods in the northern, eastern, and western portions of the study area in La Mirada and Norwalk. Please refer to Section 1.2 and Section 3.2 for more information.

3.3.3 Environmental Consequences

Table 3-2. Consistency with State, Regional, and Local Plans and Programs shows the consistency of the No Build Alternative and Build Alternative with applicable regional and local land use and transportation plans adopted for the area.

Table 3-2. Consistency with State, Regional, and Local Plans and Programs

Policy/Goal	Alternative 1: No Build Alternative	Alternative 2: Offset Overpass with Connector Road (Build Alternative)
LOSSAN Strategic Implementation Plan		

Policy/Goal	Alternative 1: No Build Alternative	Alternative 2: Offset Overpass with Connector Road (Build Alternative)
Completion of the BNSF Third Main Track	**Inconsistent.** The *LOSSAN Strategic Implementation Plan* is partially founded on completion of the BNSF Third Main Track, as part of the triple track program, which includes implementation of the project. Failure to complete the triple track would result in conflict with the plan.	**Consistent.** The Build Alternative would result in implementation of the triple track program through facilitation of the BNSF third main track construction. Therefore, the Build Alternative would be consistent with this goal.
Pacific Surfliner North Service Development Plan		
Implementation of Previous Corridor Planning Studies	**Inconsistent.** The *Pacific Surfliner North Service Development Plan* is intended to facilitate projects that were identified thought previous corridor planning studies conducted, which include the Project. Failure to complete the implement the Project would result in conflict with the plan.	**Consistent.** The Build Alternative would result in implementation of the triple track program through facilitation of the BNSF third main track construction. Therefore, the Build Alternative would be consistent with this goal.
Southern California Association of Governments 2008 Regional Comprehensive Plan		
Transportation Goal: A more efficient transportation system that reduces and better manages vehicle activity.	**Consistent.** The No Build Alternative would not result any changes to existing conditions, and would therefore not conflict with this goal. However, this alternative would not achieve the transportation improvements projected to result under the build alternative.	**Consistent.** The Build Alternative would result in a more efficient transportation system by eliminating conflicts between vehicles and trains at the Rosecrans/Marquardt Avenue and BNSF railroad tracks intersection. Therefore, the Build Alternative would be consistent with this goal.
Security and Emergency Preparedness Goal: Ensure transportation safety, security, and reliability for all people and goods in the region.	**Consistent.** The No Build Alternative would not result any changes to existing conditions, and would therefore not conflict with this goal. However, this alternative would not achieve the transportation improvements projected to result under the build alternative.	**Consistent.** The Build Alternative would help to ensure transportation safety, security, and reliability by eliminating conflicts between vehicles and trains at the Rosecrans/Marquardt Avenue and BNSF railroad tracks intersection. Therefore, the Build Alternative would be consistent with this goal.
Southern California Association of Governments 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy		

Policy/Goal	Alternative 1: No Build Alternative	Alternative 2: Offset Overpass with Connector Road (Build Alternative)
Goal: Maximize mobility and accessibility for all people and goods in the region.	**Consistent.** The No Build Alternative would not result any changes to existing conditions, and would therefore not conflict with this goal. However, this alternative would not achieve the transportation improvements projected to result under the build alternative.	**Consistent.** The Build Alternative would maximize mobility and accessibility in the region by eliminating conflicts between vehicles and trains at the Rosecrans/Marquardt Avenue and BNSF railroad tracks intersection. Therefore, the Build Alternative would be consistent with this goal.
City of Santa Fe General Plan		
Goal 10.1: Continue to protect the Santa Fe Springs community from the loss of life and property from crime or traffic hazards.	**Consistent.** The No Build Alternative would not result any changes to existing conditions, and would therefore not conflict with this policy. However, this alternative would not achieve the transportation improvements projected to result under the build alternative.	**Consistent.** The Build Alternative would eliminate conflicts between vehicles and trains at the Rosecrans/Marquardt Avenue and BNSF railroad tracks intersection. Therefore, the Build Alternative would be consistent with this goal.
Policy 1.10: Continue plans to provide grade separation between railroads and major thoroughfares, wherever feasible.	**Consistent.** The No Build Alternative would not result any changes to existing conditions, and would therefore not conflict with this policy. However, this alternative would not achieve the transportation improvements projected to result under the build alternative.	**Consistent.** The Build Alternative would include the construction of an overpass to raise Rosecrans Avenue above the BNSF railroad tracks. Therefore, the Build Alternative would be consistent with this policy.
City of La Mirada General Plan		
Goal 4.0: Maintain a safe and efficient railroad system. *Policy 4.2: Support efforts by the city of Santa Fe Springs to install an overpass at Rosecrans Avenue to reduce congestion in La Mirada.*	**Consistent.** The No Build Alternative would not result any changes to existing conditions, and would therefore not conflict with this goal and policy. However, this alternative would not achieve the transportation improvements projected to result under the build alternative.	**Consistent.** The Build Alternative would include the construction of an overpass to raise Rosecrans Avenue above the BNSF railroad tracks. Therefore, the Build Alternative would be consistent with this goal and policy.
City of Norwalk General Plan		

Policy/Goal	Alternative 1: No Build Alternative	Alternative 2: Offset Overpass with Connector Road (Build Alternative)
The general plan establishes goals to accommodate growth.	**Consistent.** The No Build Alternative would not result any changes to existing conditions, and would therefore not conflict with the general plan's goals to accommodate growth.	**Consistent.** The Build Alternative would not result in any impacts on growth in the study area, and is therefore consistent with the general plan's goals to accommodate growth.

Source: Southern California Association of Governments, 2008; 2012; City of Santa Fe Springs, 1994; City of La Mirada, 2003a; City of Norwalk, 2016

Alternative 1: No Build Alternative

The No Build Alternative would not result in any changes to existing conditions, and, as shown in **Table 3-2.** Consistency with State, Regional, and Local Plans and Programs**.** The No Build Alternative would not improve the safety of railroad crossings or address future traffic and circulation issues forecasted for the project area, and therefore, would conflict with the *LOSSAN Strategic Implementation Plan* and *Pacific Surfliner North Service Development Plan.*

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

As shown in **Table 3-2.** Consistency with State, Regional, and Local Plans and Programs, the Build Alternative would be consistent with the goals and policies that call for improved traffic and circulation and be consistent with future land use and development. Therefore, the Build Alternative would be compatible with applicable plans, and no impact from conflicts with applicable plans and programs is anticipated.

3.3.4 Avoidance, Minimization, and/or Mitigation Measures

The Project is not anticipated to result in impacts related to consistency with plans and programs; therefore, no avoidance, minimization, and/or mitigation measures are required.

3.4 Community Character and Cohesion

The following discussion incorporates the results of the CIA prepared for the Project (GPA Consulting, 2016a).

3.4.1 Regulatory Setting

National Environmental Policy Act

NEPA, as amended, established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). 64 FR §28545 (May 26, 1999) outlines the procedures for the assessment under NEPA of environmental impacts on the socioeconomic environment, including the number and kinds of available jobs, the potential for community disruption and demographic shifts, the

need for and availability of relocation housing, impacts on commerce, including existing business districts, metropolitan areas, and the immediate area of the alternative, and impacts on local government services and revenues.

3.4.2 Affected Environment

The study area boundaries for community impacts are generally within a 0.5-mile radius of the project area, but were adjusted to be consistent with roadways that serve as physical delineators, such as Imperial Highway (State Route 90) to the north, La Mirada Boulevard and Escalona Road to the east, Bloomfield Avenue to the west, and Alondra Boulevard to the south (see **Figure 3-1.** Community Impacts Study Area).

Community cohesion is the degree to which residents have a "sense of belonging" and a level of commitment to their neighborhood, or a strong attachment to neighbors, groups, and institutions, usually because of continued association over time. The residential area in the study area is fragmented and bounded by surrounding industrial land uses. In the study area, a clear distinction between industrial and residential land use, as shown on local zoning maps, begins just above Rosecrans Avenue and along Marquardt Avenue and Valley View Avenue. Because residential areas are cohesive in their structure, separated from industrial uses in distinct neighborhoods, it is assumed that community members have a strong sense of belonging and a high level of commitment to their neighborhood. In addition, structures in the project area were constructed between 1948 and 1997, with a median construction date of 1973, indicating that the majority of structures in the project area were constructed more than 40 years ago (Biggs Cardosa Associates, Inc., 2016). Therefore, community cohesion in the project area is assumed to be high because there has been continued association over time.

Approximately 84 percent of Santa Fe Springs' nine square miles are zoned for commercial and industrial uses (City of Santa Fe Springs, 2015). Santa Fe Springs' daytime population is estimated to be 95,000 because of the employees that commute to the city (City of Santa Fe Springs, 2015). Santa Fe Springs' population increased by 1,002 residents between 2000 and 2014 (Southern California Association of Governments, 2015b). Southern California Association of Governments (SCAG) population projections predict that Santa Fe Springs's population will be approximately 20,300 people in 2035 (Southern California Association of Governments, 2012). Santa Fe Springs' had a population density of 1,828 persons per square mile in 2010 (United States Census Bureau, 2015). Between 2000 and 2014, La Mirada and Norwalk had population growth rates of 5.5 percent and 2.2 percent, respectively, which were both lower than Los Angeles County's growth rate of 5.7 percent (Southern California Association of Governments, 2015a; Southern California Association of Governments, 2015c).

3.4.3 Environmental Consequences

Alternative 1: No Build Alternative

Under the No Build Alternative, there would be no changes to community character or cohesion within or surrounding the project area. Therefore, no impacts are anticipated.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

Since the Project would include improvements to existing roadways and to the circulation system, the Project would not be expected to divide existing neighborhoods or affect community cohesion. Therefore, no adverse impacts on community cohesion are anticipated.

The Build Alternative would require the construction of additional transportation infrastructure in the project area. The overpass would be a new vertical element that would be visible to nearby viewers. The nearest sensitive viewers are residences approximately 400 feet north of the project area. Several industrial warehouse buildings are located between the project area and the residences. One industrial building, the Vance and Hines building, is located in the northeast corner of the Rosecrans Avenue and Marquardt Avenue intersection and is approximately 20 feet high. This building would be the tallest feature between the residential area to the northeast and the proposed overpass to the southwest. The elevation of the proposed overpass would be approximately 35 feet tall. Therefore, the overpass would not be visible from the residences because the overpass would only be 1.75 time taller than the Vance and Hines building, and views of the overpass from the community would be blocked by buildings adjacent to the community, north of the Vance and Hines building (see **Figure 3-3.** Visual Simulation).

In addition, the new overpass would likely blend in with the industrial landscape surrounding the project area because the overpass would most likely be constructed of similar colors and materials as adjacent buildings (e.g., gray concrete and asphalt). Because the new overpass would not be highly visible from residences, and would blend in with the surrounding industrial landscape. Additionally, implementation of the Project would improve safety and access for community residents, local businesses and facilities, and public services. Improvements to the circulation system would be compatible with adjacent and surrounding transportation and industrial land uses. Therefore, the Project is not anticipated to result in impacts on community character.

Figure 3-3. Visual Simulation

Source: Biggs Cardosa Associates, 2016

The Project would be constructed over existing transportation facilities. An overpass would be added to the existing project area, which would improve safety and circulation in the intersection. Through increased safety and construction of pedestrian facilities, the Project would improve pedestrian access and mobility in the project area. Pedestrian access in the project area is important for pedestrians commuting from the residential neighborhood to the northeast of the project area to the industrial and commercial businesses surrounding the project area. Therefore, the Project would not result in adverse impacts on community cohesion, but has the potential to improve community cohesion.

Construction activities could result in temporary impacts on community character and cohesion, including noise from construction equipment and vehicles, traffic from construction vehicles on roadways, air quality emissions of dust from earth moving activities and exhaust from construction vehicles/equipment, and visual impacts from construction equipment and debris that could affect communities in the study area. These impacts could temporarily affect mobility and quality of life in the community; however, with adherence to local policies and the implementation of standard construction Best Management Practices (BMPs), including measures to limit construction hours and implement traffic management plans, which would reduce and minimize these temporary impacts to the greatest extent feasible.

3.4.4 Avoidance, Minimization, and/or Mitigation Measures

The Project would not result in adverse impacts on community character or cohesion; therefore, no avoidance, minimization, or mitigation measures are required.

3.5 Relocations and Real Property Acquisition

3.5.1 Regulatory Setting

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended in 1987, is often referred to simply as the Uniform Act. The Uniform Act provides uniform and equitable treatment of persons displaced from their homes, businesses, non-profit associations, or farms by federal and federally-assisted programs, and establishes uniform and equitable land acquisition policies.

Metro will be responsible for property acquisition and negotiations. If the property owner and Metro are unable to agree on the purchase of a property, the condemnation process would become the next step. The property owner would be notified that Metro intends to seek a Resolution of Necessity (RON) from the California Transportation Commission (CTC), which would authorize Metro to file a lawsuit to acquire the property rights through legal negotiation in the court.

Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964, as amended, which states that "No person in the Unites States shall, on the grounds of race, color, or national origin, be excluded from participation in, denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance (United States Congress, 1964)." All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (Title 42 USC Section 2000d, et seq.) (United States Congress, 1964).

3.5.2 Affected Environment

The project area was also considered the study area for relocations and real property acquisitions. The project area includes warehouses and commercial buildings within and adjacent to the proposed transportation improvements; the existing roadways (Rosecrans Avenue, Marquardt Avenue, Stage Road, and Anson Avenue); and the BNSF railroad tracks. The existing roadways are asphalt-paved with curbs, gutters, and sidewalks, and provide access to industrial and commercial businesses.

3.5.3 Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not require the acquisition of any properties; therefore, no impacts are anticipated.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

As shown in **Figure 2-2.** Right of Way Exhibit and the Build Alternative would require full acquisition of eight properties, including six industrial properties and two commercial properties, as well partial and temporary easements, including seven roadway easements, one footing easement, one utility easement, and 15 TCEs (see **Table 3-3.** Right of Way Impacts). The roadway easement and TCEs would be required in

only portions of adjacent industrial properties that are occupied by parking areas. All parking configurations after Project implementation would meet parking requirements of the City. Removal of industrial facilities in the project area would reduce parking space count requirements. Any additional parking necessary to accommodate existing uses in the area would be retained or replaced according to City requirements. Access to these adjacent businesses would be maintained during construction. Therefore, potential impacts on these properties are not anticipated to be adverse.

The Project would require the including full acquisition of eight properties, including six industrial properties and two commercial properties, which would require relocation of the businesses operating on the properties. All parcels that would be acquired for the Project are zoned for industrial use, and are currently occupied, with the exception of APN 8069-003-009, which is currently vacant, and developed with permanent industrial or commercial buildings and asphalt-paved parking areas. As stated previously, the majority of Santa Fe Springs' land area (approximately 84 percent) is zoned for commercial and industrial uses (City of Santa Fe Springs, 2015). According to an online real estate website, currently 38 of industrial properties are for lease in Santa Fe Springs, ranging in size from 970 to 355,590 square feet; 13 listings of office and medical spaces for lease, ranging in size from 153 to 10,322 square feet; and five listings of retail spaces for lease, ranging in size from 810 to 21, 862 square feet (LoopNet, 2018). Because the majority of Santa Fe Springs is zoned for commercial and industrial uses, several listings of similar industrial and commercial properties are available for lease. Adequate vacancy of suitable industrial and commercial properties exists in Santa Fe Springs to accommodate relocated businesses.

Table 3-3. Right of Way Impacts

Assessor's Parcel Number	Address	City	Year Built	Lot Size (Square Feet)	Land Owner	Business Name	Right of Way Impacts (Square Feet)				
							Full Acquisition	Roadway Easement	Footing Easement	Utility Easement	Temporary Construction Easement
8059-029-028	13633 Rosecrans Avenue	Santa Fe Springs	1989	45,376	SFSS LLC	Santa Fe Self Storage					394
8059-029-010	13649 Rosecrans Avenue	Santa Fe Springs	1960	77,918	Ban Sang W & Bang Family Trust	Floor Discount Warehouse/Ready Mix Concrete					8,310
8059-029-009	13659 Rosecrans Avenue	Santa Fe Springs	1973	40,906	Rosecrans Associates LP	Broussard Enterprise, Inc.					3,628
8059-029-031	13729 Rosecrans Avenue	Santa Fe Springs	1959	54,032	H&E Equipment Services	H&E Equipment Services		4,647			5,177
8059-029-030	13729 Rosecrans Avenue	Santa Fe Springs	1956	27,627	H&E Equipment Services	H&E Equipment Services		566			4,930
8059-029-029	13733 Rosecrans Avenue	Santa Fe Springs	1970	12,595	Disabled American Veterans	Disabled American Veterans				1,357	1,574
8069-003-039	13650 Rosecrans Avenue	Santa Fe Springs	1973	39,458	Patridge Max and Betty TRS Et Al.	Industrial Sprockets & Gears, Inc.		716			5,278
8069-003-040	13700 Rosecrans Avenue	Santa Fe Springs	1978	36,990	Chung Song T and Chang Y TRS Chun Family Trust	L.A. Supply Company	36,990				
8069-003-009	13720 Rosecrans Avenue	Santa Fe Springs	1971	44,995	DP Milroy LLC	Vacant	44,995				
8069-003-008	13730 Rosecrans Avenue	Santa Fe Springs	1978	44,999	GDS Partners LLC	Unknown	44,999				
8069-003-007	13750 Rosecrans Avenue	Santa Fe Springs	1978	47,139	GDS Partners LLC	Gordon Industries Inc. (Metal Stamping)	47,139				
8069-007-043	14330 Marquardt Avenue	Santa Fe Springs	1976	49,041	Dedeoglu Artin and Gulhatun TRS	Ari's Wholesale (Importer & Distributor of Fine Foods)	49,041				

Assessor's Parcel Number	Address	City	Year Built	Lot Size (Square Feet)	Land Owner	Business Name	Right of Way Impacts (Square Feet)				
							Full Acquisition	Roadway Easement	Footing Easement	Utility Easement	Temporary Construction Easement
8059-029-007	14037 Marquardt Avenue	Santa Fe Springs	1959	101,833	Pan Pacific Fiber, Inc.	Pan Pacific Fiber, Inc.					867
8059-028-029	13861 Rosecrans Avenue	Santa Fe Springs	1976	71,371	Vance, Marvin T Trust	Vance & Hines		464			8,591
8059-028-028	13861 Rosecrans Avenue	Santa Fe Springs	1976	76,044	Vance, Marvin T Trust	Vance & Hines					3,682
8059-028-020	13937 Rosecrans Avenue	Santa Fe Springs	1974	82,616	Diversified Silicone Products	Diversified Silicone Products					10,282
8059-028-053	14001 Rosecrans Avenue	La Mirada	1997	618,120	BB and K LA Mirada Industrial	Unknown					846
8069-005-001	13840-13848 Rosecrans Avenue	Santa Fe Springs	1948	14,789	Sierra Basilio A and Lisa A	Sierra Plaza: Little Ears Therapy Center, Disaster Kits, Boxing-MMA Muay Thai	14,789				
8069-005-002	13900 Rosecrans Avenue	Santa Fe Springs	1961	59,619	Nogle H D and Sons Inc.	National Van Lines, Superior Industrial Products Company, Inc.	59,619				
8069-005-008	13914 Rosecrans Avenue	Santa Fe Springs	1958	13,061	Tripp Rolan and Susan TRS	VCA La Mirada Animal Hospital	13,061				
8069-005-010	13949 Stage Road	Santa Fe Springs	1959	80,110	RRM Properties	Concrete Plant		7,076			914
8069-005-011	16934 Rosecrans Avenue	Santa Fe Springs	1958	43,550	RRM Properties	Concrete Plant		6,100	160		4,054
8069-006-018	13950 Rosecrans Avenue	Santa Fe Springs	1977	95,663	Wilson, Glen A Co Et Al, Wilson Brian	Multiple Tenants		553			1,935

Source: Biggs Cardosa Associates, Inc., 2017; Los Angeles County Assessor, 2016

Notes: TCE = Temporary Construction Easement

3.5.4 Avoidance, Minimization, and/or Mitigation Measures

Metro would be responsible for coordinating property acquisitions and easements necessary for the Project. To minimize relocation impacts resulting from the Project, the following minimization measure would be implemented.

R-1. Property would be acquired through compliance with the Uniform Act. If the property owner and Metro are unable to agree on the purchase of a property, the condemnation process would become the next step. The property owner would be notified that Metro intends to seek a RON from the CTC, which would authorize Metro to file a lawsuit. Ultimately, if no agreement is reached, the court determines proper "just" compensation. Several property owners in the project area have shown intent to proceed with the condemnation process. Under the condemnation process, property owners would be justly compensated through opinion of the court.

Additionally, as stated previously, adequate vacancy of suitable industrial and commercial properties exists in Santa Fe Springs to accommodate relocated businesses as a result of the Project. Therefore, impacts would be minimized to not adverse. No additional avoidance, minimization, and/or mitigation measures are required.

3.6 Environmental Justice

The United States Environmental Protection Agency (U.S. EPA) defines Environmental Justice as "the fair treatment and meaningful involvement of all people regardless of race, color, sex, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies" (United States Environmental Protection Agency, 2015).

Fair treatment means that no group of people, including any racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Meaningful involvement means that: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.

3.6.1 Regulatory Setting

National Environmental Policy Act

NEPA of 1969, as amended, established that the federal government must use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (Title 42 USC Section 4331(b)2)) (United States Congress, 1969). CEQ regulations, which establish the steps

necessary to comply with NEPA, require evaluation of the potential environmental consequences of all proposed federal activities and programs.

Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964, as amended, which states that "No person in the Unites States shall, on the grounds of race, color, or national origin, be excluded from participation in, denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance (United States Congress, 1964)."

Executive Order 12898

EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," signed by President Clinton on February 11, 1994 (President William J. Clinton, 1994) directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law.

Council on Environmental Quality Environmental Justice Guidance

A Presidential Memorandum accompanied EO 12898, stating that "each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by [NEPA]." The CEQ responded to this order by issuing guidance for agencies on how to address environmental justice under NEPA. The CEQ Environmental Justice Guidance includes general principles for addressing environmental justice during the NEPA process, such as considering relevant public health data; recognizing interrelated cultural, social, occupational, historical, or economic factors; and developing effective public participation strategies.

United States Department of Transportation Order 5610.2(a)

United States Department of Transportation Order (USDOT) Order 5610.2(a), Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (77 Federal Register, Number 91, May 10, 2012) sets forth the USDOT policy to consider environmental justice principles in all USDOT programs, policies, and activities. It describes how the objectives of environmental justice will be integrated into planning and programming, rulemaking, and policy formulation. The order sets forth steps to prevent disproportionately high and adverse effects on minority or low-income populations through environmental justice analyses conducted as part of federal transportation planning and NEPA provisions. The order also describes the specific measures to be taken to address instances of disproportionately high and adverse effects and sets forth relevant definitions for conducting environmental justice analyses.

3.6.2 Affected Environment

The study area boundaries for community impacts are generally within a 0.5-mile radius of the project area, but were adjusted to be consistent with roadways that serve as physical delineators, such as Imperial

Highway (State Route 90) to the north, La Mirada Boulevard and Escalona Road to the east, Bloomfield Avenue to the west, and Alondra Boulevard to the south (see **Figure 3-1.** Community Impacts Study Area).

Terminology

For this assessment, minority populations include persons who are American Indian and Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian and Other Pacific Islander. Low-income populations include households that have been below the poverty threshold over a 12-month period. Because data for low-income populations were retrieved from the 2008-2012 American Community Survey (ACS) 5-Year Estimates, the poverty thresholds used for this analysis are those defined by the United States Census Bureau for the year 2012. In 2012, the United States Census Bureau poverty threshold was $23,492 for a family of four (United States Census Bureau, 2012).

For this analysis, a "meaningfully greater" minority or low-income population is defined as a minority or low-income population in the study area with a higher percentage than the minority or low-income population in Los Angeles County.

Minority Populations

Table 3-4. Racial and Ethnic Characteristics in the Study Area and Los Angeles County includes percentages of minority populations for census tracts in the study area and Los Angeles County. The bolded and shaded numbers in **Table 3-4.** Racial and Ethnic Characteristics in the Study Area and Los Angeles County indicate the minority populations in the study area that have a meaningfully greater percentage than Los Angeles County. These block groups are also illustrated in **Figure 3-4.** Environmental Justice Populations.

As shown in **Table 3-4.** Racial and Ethnic Characteristics in the Study Area and Los Angeles County**,** the largest population in the study area is Hispanic or Latino, which makes up 57.4 percent of the total population in the study area. This Hispanic or Latino population in the study area is meaningfully greater than the Hispanic or Latino population in Los Angeles County, which is 47.7 percent of Los Angeles County's population.

As shown in **Table 3-4.** Racial and Ethnic Characteristics in the Study Area and Los Angeles County, block groups were identified in the study area with meaningfully greater percentages of Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Some Other Race, and Hispanic or Latino populations compared to Los Angeles County.

Income and Poverty Levels

Table 3-5. Households with Income in the Past 12 Months below Poverty Level in the Study Area and Los Angeles County includes the percentages of households with income below poverty level for census tracts in the study area and Los Angeles County. The bolded and shaded numbers in **Table 3-5.** Households with Income in the Past 12 Months below Poverty Level in the Study Area and Los Angeles County indicate the low-income populations in the study area that have meaningfully greater percentages than Los Angeles County. As shown in **Table 3-5.** Households with Income in the Past 12 Months below Poverty Level in the

Study Area and Los Angeles County**,** the low-income population in the study area (i.e., households with income below poverty level in the past 12 months) is 18.0 percent of the total households in the study area. This percentage is meaningfully greater than Los Angeles County, which has a low-income population of 15.6 percent. In addition, several block groups were identified in the study area that have low-income populations with meaningfully greater percentages than Los Angeles County. These block groups are also illustrated in **Figure 3-4.** Environmental Justice Populations.

3.6.3 Environmental Consequences

Alternative 1: No Build Alternative

Under the No Build Alternative, there would be no direct or indirect impacts on minority or low-income populations. Therefore, no disproportionately high or adverse impacts on minority or low-income populations are anticipated.

Table 3-4. Racial and Ethnic Characteristics in the Study Area and Los Angeles County

Geographic Area	Total Population (All Races and Ethnicities)		White		Black or African American		American Indian and Alaska Native		Asian		Native Hawaiian and Other Pacific Islander		Some Other Race		Hispanic or Latino	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Census Tracts in Study Area																
Census Tract 104810, Block Group 3	2,572	--	102	4.0	0	0	0	0	68	**2.6**	0	0	0	0	2,402	**93.4**
Census Tract 109400, Block Group 3	1,503	--	284	18.9	0	0	0	0	7	0.5	0	0	0	0	1,199	**79.8**
Census Tract 109601, Block Group 3	1,190	--	85	7.1	197	**16.6**	23	1.9	181	**15.2**	0	0	0	0	632	**53.1**
Census Tract 111302, Block Group 1	1,360	--	816	60.0	11	0.8	0	0	313	**23.0**	16	**1.2**	0	0	204	15.0
Census Tract 119700, Block Group 1	1,552	--	696	44.8	25	1.6	0	0	92	5.9	0	0	34	**2.2**	678	43.7
Census Tract 119800, Block Group 1	751	--	37	4.9	0	0	0	0	92	12.3	0	0	0	0	622	**82.8**
Census Tract 119800, Block Group 2	1,209	--	44	3.6	45	3.7	17	1.4	316	**26.1**	0	0	0	0	775	**64.1**
Census Tract 121600, Block Group 1	1,990	--	917	46.1	70	3.5	0	0	347	**17.4**	0	0	0	0	656	33.0
Census Tract 121600, Block Group 2	1,161	--	269	23.2	28	2.4	0	0	374	**32.2**	0	0	0	0	463	39.9
Census Tract 121802, Block Group 3	916	--	261	28.5	180	**19.7**	0	0	61	6.7	0	0	0	0	400	43.7
Census Tract 194401, Block Group 1	1,369	--	884	64.6	49	3.6	0	0	56	4.1	0	0	0	0	321	23.4
Census Tract 194402, Block Group 1	1,028	--	670	65.2	0	0	0	0	48	4.7	0	0	0	0	256	24.9

Geographic Area	Total Population (All Races and Ethnicities)		White		Black or African American		American Indian and Alaska Native		Asian		Native Hawaiian and Other Pacific Islander		Some Other Race		Hispanic or Latino	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Census Tract 194402, Block Group 2	1,100	--	772	70.2	129	**11.7**	0	0	13	1.2	0	0	10	**0.9**	123	11.2
Census Tract 222700, Block Group 1	3,707	--	1,725	46.5	167	4.5	7	0.2	1,223	**33.0**	0	0	17	0.5	401	10.8
Census Tract 291210, Block Group 3	1,469	--	27	1.8	104	7.1	0	0	203	**13.8**	0	0	0	0	1,135	**77.3**
Census Tract 293302, Block Group 2	626	--	115	18.4	8	1.3	0	0	14	2.2	2	**0.3**	0	0	485	**77.5**
Census Tract 504102, Block Group 1	0	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Census Tract 530003, Block Group 1	1,165	--	266	22.8	0	0	0	0	232	**19.9**	0	0	1	**0.1**	666	**57.2**
Census Tract, 530004, Block Group 1	679	--	41	6.0	10	1.5	14	**2.1**	110	**16.2**	0	0	0	0	504	**74.2**
Census Tract 530004, Block Group 2	3,039	--	472	15.5	0	0	113	**3.7**	198	6.5	0	0	0	0	2,256	**74.2**
Census Tract 533702, Block Group 1	2,484	--	10	0.4	36	1.4	0	0	0	0	23	**0.9**	0	0	2,415	**97.2**
Census Tract 533702, Block Group 2	918	--	11	1.2	0	0	0	0	0	0	0	0	0	0	907	**98.8**
Census Tract 533703, Block Group 2	2,389	--	24	1.0	0	0	0	0	0	0	0	0	0	0	2,365	**99.0**
Census Tract 600303, Block Group 2	1,227	--	69	5.6	689	**56.2**	0	0	0	0	0	0	0.4	**1.7**	469	38.2
Total Study Area	35,404	--	8,597	24.3	2,118	5.1	174	**0.5**	3,947	11.2	41	0.1	62	0.2	20,334	**57.4**
Los Angeles County	9,840,024	--	2,731,605	27.8	809,858	8.2	17,371	0.2	1,343,920	13.7	23,520	0.2	24,612	0.3	4,694,846	47.7

Source: United States Census Bureau, 2012
Notes: % = Percent; Bolded and shaded numbers are percentages for minority populations in the study area that are higher than percentages for those populations in Santa Fe Springs.

Table 3-5. Households with Income in the Past 12 Months below Poverty Level in the Study Area and Los Angeles County

Geographic Area	Total Number of Households	Households with Income in Past 12 Months Below Poverty Level	
		Number	%
Census Tracts in Study Area			
Census Tract 104810, Block Group 3	535	47	8.9
Census Tract 109400, Block Group 3	442	44	10.0
Census Tract 109601, Block Group 3	301	10	3.3
Census Tract 111302, Block Group 1	435	17	3.9
Census Tract 119700, Block Group 1	512	99	**19.3**
Census Tract 119800, Block Group 1	171	21	12.3
Census Tract 119800, Block Group 2	344	0	0
Census Tract 121600, Block Group 1	511	81	**15.9**
Census Tract 121600, Block Group 2	298	0	0
Census Tract 121802, Block Group 3	127	25	**19.7**
Census Tract 194401, Block Group 1	764	77	10.1
Census Tract 194402, Block Group 1	577	133	**23.1**
Census Tract 194402, Block Group 2	794	125	**15.7**
Census Tract 222700, Block Group 1	136	93	**68.4**
Census Tract 291210, Block Group 3	426	187	**43.9**
Census Tract 293302, Block Group 2	177	31	**17.4**
Census Tract 504102, Block Group 1	0	0	0

Geographic Area	Total Number of Households	Households with Income in Past 12 Months Below Poverty Level	
		Number	%
Census Tract 530003, Block Group 1	400	45	11.3
Census Tract, 530004, Block Group 1	207	11	5.3
Census Tract 530004, Block Group 2	936	128	13.7
Census Tract 533702, Block Group 1	588	167	**18.4**
Census Tract 533702, Block Group 2	248	51	**20.6**
Census Tract 533703, Block Group 2	576	160	**27.8**
Census Tract 600303, Block Group 2	378	224	**59.3**
Total Study Area	9,883	1,776	**18.0**
Los Angeles County	3,218,511	503,166	15.6

Source: United States Census Bureau, 2012
Notes: % = Percent; Bolded and shaded numbers are percentages for low-income populations in the study area that are meaningfully greater than the percentage for the low-income population in Los Angeles County.

Figure 3-4. Environmental Justice Populations

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Alternative 2: Offset Overpass with Connector Road (Build Alternative)

If a minority or low-income population in the study area is meaningfully greater than those populations in Los Angeles County, the Project would have the potential to result in disproportionate impacts on the populations in the study area, and the Project would therefore be subject to the provisions of EO 12898.

As outlined above, the study area contains minority and low-income populations with meaningfully greater percentages than those populations in Los Angeles County. Therefore, any impacts resulting from operation and construction of the Project could disproportionately affect minority and low-income populations in the study area compared to Los Angeles County.

The Project is intended to improve the safety of rail-roadway crossings and to address future traffic and circulation issues forecasted for the project area. All members of the public, including those within the study area and throughout Los Angeles County, would be able to benefit from the improvements proposed under the Project, and minority or low-income populations would not be denied benefits or receive fewer benefits than the general population.

The Project would require the relocation of eight properties, including six industrial businesses and two commercial businesses. The businesses would be relocated in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. The businesses that would be relocated as a result of the Project are identified in **Table 3-3.** Right of Way Impacts. Relocation of these businesses would not be anticipated to result in indirect impacts to the community that would result in an adverse impact on environmental justice populations.

The Project would result in the relocation of several businesses in the community, including L.A Supply Company, Gordon Industries Inc., Ari's Wholesale Foods, Little Ears Therapy Center, Disaster Kits, Boxing-MMA Muay Thai, National Van Lines, Superior Industrial Products Company, Inc., and VCA La Mirada Animal Hospital. Large industrial and wholesale businesses, such as, L.A. Supply Company, Gordon Industries Inc., Ari's Wholesale Foods, Disaster Kits, National Van Lines, and Superior Industrial Products Company, Inc. service the larger Los Angeles area, and would not result in a direct impact on services to local environmental justice populations. Adequate relocation properties would be available near the project area, as indicated in Section 3.5, and industrial businesses would be anticipated to continue operation in their new facilities. Therefore, employment of local environmental justice populations would not be impacted by the Project.

Since the project area is in an area with minority populations, it is likely that the smaller local commercial businesses largely service local environmental justice populations. Boxing-MMA Muay Thai provides Boxing, Muay Thai, MMA, Cardio Kickboxing classes to the community. Several other similar services exist in Santa Fe Springs, and the loss of service would not result in a significant impact to the community. As discussed in Section 3.5, several suitable commercial properties exist in Santa Fe Springs to relocate the displaced business, and it is anticipated that the business would continue operation nearby.

Little Ears Therapy Center serves Los Angeles and Orange Counties offering one on one therapy to children who are deaf or hard of hearing, as well as children with speech and language delays. The Little Ears Therapy Center is a specialized service that is unique to the study area. However, several suitable office or retail properties exist in Santa Fe Springs to relocate the displaced business, and it is anticipated that the business would continue operation nearby as well.

VCA La Mirada Animal Hospital provides veterinary services to domestic animals. Several veterinary clinics and hospitals service the community and relocation would not impact the environmental justice population. Several suitable office or retail properties exist in Santa Fe Springs to relocate the displaced business, and it is anticipated that the business would also continue operation nearby.

Since the businesses would be expected to continue operation near their existing locations, employment of local environmental justice populations would not be impacted by the Project. Therefore, the business relocations are not anticipated to result in disproportionately high or adverse impacts on minority or low-income populations.

Rosecrans Avenue would remain open during construction, which would ensure that vehicle, pedestrian, and bicycle access in the project area would not be substantially affected. Construction activities could result in temporary noise impacts from construction equipment and vehicles, traffic from construction vehicles on roadways, air quality emissions of dust from earth moving activities and exhaust from construction vehicles/equipment, and visual impacts from construction equipment and debris that could equally affect all populations in the study area.

With adherence to local policies and the implementation of construction BMPs, including measures to limit construction hours and implement traffic management plans, these temporary impacts would not be expected to substantially impact the community. Therefore, temporary construction impacts from the Project are not anticipated to be disproportionately high or adverse on the minority or low-income populations in the study area.

3.6.4 Avoidance, Minimization, and/or Mitigation Measures

The Project is not anticipated to result in disproportionately high or adverse environmental justice impacts; therefore, no avoidance, minimization, or mitigation measures are required.

3.7 Utilities/Emergency Services

The following discussion incorporates the results of the CIA prepared for the Project (GPA Consulting, 2016a).

3.7.1 Affected Environment

The study area boundaries for community impacts are generally within a 0.5-mile radius of the project area, but were adjusted to be consistent with roadways that serve as physical delineators, such as Imperial Highway (State Route 90) to the north, La Mirada Boulevard and Escalona Road to the east, Bloomfield Avenue to the west, and Alondra Boulevard to the south (see **Figure 3-1.** Community Impacts Study Area).

Utilities

Several utilities are in the project area (see **Figure 3-5**. Utilities in the Project Area); these utilities are discussed in the following sections.

Water and Wastewater

The Santa Fe Springs Water Utility Authority provides water services to the project area (Santa Fe Springs Water Utility Authority, 2014). Water is provided from groundwater, which is pumped from a well in the Central groundwater basin, as well as from groundwater from the City of Whittier's wells in the Whittier Narrows area, and the Central Basin Water Quality Protection Program facility in the Central Basin. The City also receives surface water from the Metropolitan Water District of Southern California, which comes from both the Colorado River and the State Water Project in Northern California.

Several City water lines are in the project area. A 16-inch water line is on Rosecrans Avenue that turns south along Marquardt Avenue. Another 12-inch water line runs along Marquardt Avenue and crosses the intersection with the BNSF railroad tracks. Another 8-inch water line connects a 12-inch water line on Marquardt Avenue to an 8-inch water line on Rosecrans Avenue.

Wastewater services in the project area are provided by the Sanitation Districts of Los Angeles County (LACSD). Several LACSD water reclamation plants are in proximity to the project area, including the Whittier Narrows Water Reclamation Plant, which treats 15 million gallons of wastewater per day, and the San Jose Creek Water Reclamation Plant, which treats 100 million gallons of wastewater per day (Sanitation Districts of Los Angeles County, 2016).

Two main LACSD sewer systems run through the project area. One sewer system is a 33-inch trunk sewer that runs parallel to the railroad corridor in the project area, and then turns west on Rosecrans Avenue. Another sewer system includes an 18-inch sewer on Stage Road that connects to a 24-inch trunk sewer on Rosecrans Avenue. There is also a City 12-inch sewer on Marquardt Avenue that connects to the LACSD sewer system.

Electric Power

Southern California Edison is the electricity supplier for the project area. Two 66-kilovolt aerial systems are located along the north side of Rosecrans Avenue and along Marquardt Avenue in the project area. In addition, 12-kilovolt overhead and underground lines run along Rosecrans Avenue, Marquardt Avenue, and Stage Road.

Natural Gas

The Southern California Gas (SoCalGas) Company provides natural gas for the project area. Two gas lines are located in the project area on Rosecrans Avenue. A 4-inch gas line runs east and west along the north side of Rosecrans Avenue. Another 30-inch gas line runs north and south along the east side of Marquardt Avenue (south).

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Figure 3-5. Utilities in the Project Area

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Telecommunications Systems

Telecommunications companies that provide services to the project area include Verizon, Time Warner, and AT&T. Verizon has a major duct bank (i.e., a group of electrical conduits that provide pathways and protection for electrical wiring) on Rosecrans Avenue, and Verizon and AT&T also share a major duct bank system along Rosecrans Avenue, which also feeds into Stage Road and Marquardt Avenue. An underground Time Warner Cable line exists along Rosecrans Avenue and Marquardt Avenue, and an underground Verizon line exists along Marquardt Avenue. Verizon Wireless also has an aerial system on joint poles with Southern California Edison on Marquardt Avenue and Rosecrans Avenue in the project area.

Solid Waste

Solid waste services are provided by LACSD. Several solid waste facilities are in proximity to the study area, including the Puente Hills Intermodal Facility, the Puente Hills Materials Recovery/Transfer Facility, the Downey Area Recycling and Transfer Facility, the South Gate Transfer Facility, the Commerce Refuse-to-Energy Facility, and the Southeast Resource and Recovery Facility.

Other Utilities

Other utilities in the project area include the BNSF railroad tracks, traffic signals, street lights, and railroad crossing equipment. In addition, several Chevron and Crimson Pipeline oil/fuel pipelines ranging from six inches to 12 inches in diameter run parallel to the BNSF railroad tracks and Stage Road in the project area.

Emergency Services

Emergency service providers in the study area are shown in **Figure 3-6.** Emergency Services. The Santa Fe Springs Department of Fire and the Los Angeles County Fire Department provide fire protection services in the study area. Los Angeles County Fire Department Station No. 49 is in the study area at 13820 La Mirada Boulevard in La Mirada. Fire Help Services, Inc., which provides fire and water damage contents restoration services, is also in the study area at 15320 Valley View Avenue in La Mirada. No Santa Fe Springs Department of Fire stations are in the study area; however, they were consulted regarding the Project and did not provide any additional comment for consideration.

Law enforcement services in the study area are provided by the City of Santa Fe Springs Police Department and the Los Angeles County Sheriff's Department. No police or sheriff stations are in the study area.

The following hospitals are in the study area:

- Norwalk Community Hospital at 13222 Bloomfield Avenue in Norwalk;
- Kindred Hospital La Mirada at 14900 Imperial Highway in La Mirada; and
- Sothern California Immediate at 15330 Valley View Avenue in La Mirada.

3.7.2 Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not affect emergency services or public utilities; therefore, no impacts are anticipated.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

Project improvements would increase safety and circulation in the project area and for the surrounding community. Proposed facilities are expected to accommodate the needs of the community following Project completion. Utilities would be relocated as necessary. An emergency access road would be constructed from the new Rosecrans Avenue overpass to Anson Avenue to provide residential properties on Anson adequate access for the fire department, as well as other emergency services.

The Build Alternative would require construction activities that could result in temporary disruption of utilities, traffic, and emergency services. Several utilities are in the project area, including oil pipelines, railroad crossing equipment, street lights, traffic signals, pull boxes, electrical controller cabinets, and underground and overhead utilities, including power poles. During construction, intermittent disruptions of utilities and relocation of utilities could be necessary to complete the Project. Therefore, no adverse impacts on railroad access are anticipated.

Rosecrans Avenue would remain open during construction, and subsequently, emergency access would not be adversely affected. Temporary traffic impacts from construction vehicles/equipment on roadways could affect emergency service response times due to increased traffic delay through the construction area. Measures U-1 through U-5 would avoid and minimize anticipated impacts, and therefore, the Project would not adversely affect utilities and emergency services.

3.7.3 Avoidance, Minimization, and/or Mitigation Measures

The Project would include implementation of the minimization measures below.

U-1. Any disruptions to utility service would be scheduled and coordinated to ensure they would not adversely impact the surrounding community.

U-2. Coordination with local emergency service providers would be conducted to provide adequate accommodation during Project construction.

Project implementation would include railroad flagging services, close coordination with BNSF, and implementation of a traffic management plan (see Section 3.8.3). Additionally, the proposed overpass would not have any columns or footings within BNSF ROW that would permanently affect railroad operations.

With implementation of the measures above, the Project would not result in adverse impacts on utilities and emergency services in the project area, and mitigation measures are not required.

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Figure 3-6. Emergency Services

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3.8 Traffic and Transportation/Pedestrian and Bicycle Facilities

The following discussion incorporates the results of the Traffic Analysis Report and the Community Impact Assessment (CIA) prepared for the Project (Los Angeles County Metropolitan Tranportation Authority, 2016; GPA Consulting, 2016a; W.G. Zimmerman Engineering, Inc., 2017).

3.8.1 Regulatory Setting

United States Department of Transportation Regulations and Policy Statement

Accessibility in federally assisted programs is governed by the USDOT regulations (Title 49 Code of Federal Regulations (CFR) Part 27) implementing Section 504 of the Rehabilitation Act of 1973 (Title 29 USC Section 794). In July 1999, the USDOT issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system.

Americans with Disabilities Act of 1990

The Americans with Disabilities Act of 1990 (ADA) prohibits discrimination and ensures equal opportunity and access for persons with disabilities. FRA works to ensure nondiscriminatory transportation in support of its mission to enhance the social and economic quality of life for all Americans. The FRA Office of Civil Rights is responsible for civil rights compliance and monitoring to ensure non-discrimination of inter-city railroad services.

3.8.2 Affected Environment

The study area boundaries for community impacts are generally within a 0.5-mile radius of the project area, but were adjusted to be consistent with roadways that serve as physical delineators, such as Imperial Highway (State Route 90) to the north, La Mirada Boulevard and Escalona Road to the east, Bloomfield Avenue to the west, and Alondra Boulevard to the south (see **Figure 3-1.** Community Impacts Study Area). Traffic transportation, pedestrian, and bicycle facilities in the study area are identified in **Figure 3-7.** Los Angeles Metro 2014 Bike Map and **Figure 3-8.** Train Station and Bus Stop Locations.

Roadways

The following roadways are in the project area:

- Rosecrans Avenue is an 84-foot-wide, 4-lane (two lanes each direction) street oriented in the east-west direction with approximately 25,000 vehicle trips per day. Rosecrans Avenue is classified as a major highway per the City of Santa Fe Springs General Plan-Circulation Element. Rosecrans Avenue provides access to the City of Norwalk in the westerly direction and to the City of La Mirada in the easterly direction. The posted speed limit on Rosecrans Avenue is 45 mph within the study area. On-street parking is allowed near the study area.
- Marquardt Avenue is a 64-foot wide, 2-lane (one lane each direction) street oriented in the north-south direction and is designated as a secondary highway with approximately 5,000 vehicle trips per day north of Rosecrans Avenue, and 3,500 vehicle trips per day south of Rosecrans Avenue.

Marquardt Avenue provides access to Imperial Highway (SR 90) to the north and dead-ends at Coyote Creek channel to the south. The posted speed limit is 40 mph north of Rosecrans Avenue and 35 mph south of Rosecrans Avenue. On-street parking is allowed within the study area.

- Stage Road is a 35 to 40-foot-wide, 2 to 3-lane roadway (one lane in each direction to the west of Valley View Avenue; and one southbound and two northbound lanes to the east of Valley View Avenue) that runs in a northwest to southeast direction, approximately 80 feet north of and parallel to the BNSF railroad tracks. Stage Road intersects with Rosecrans Avenue approximately 200 feet east of the Rosecrans/Marquardt Avenue and BSNF railroad tracks intersection, and is classified as a major arterial roadway with approximately 5,000 to 10,000 vehicle trips per day.
- Anson Avenue is a 2-lane cul-de-sac (one lane in each direction) that runs in a north-south direction and is approximately 700 feet east of the Rosecrans/Marquardt Avenue and BNSF railroad tracks intersection. Anson Avenue provides access to local businesses to the north and Rosecrans Avenue to the south. The posted speed limit is 25 mph. On-street parking is allowed within the study area.

The existing roadways are asphalt-paved with curbs, gutters, and sidewalks, and provide access to industrial and commercial businesses.

Other major arterial roadways in the study area include Imperial Highway (State Route 90) in the northern portion of the study area, I-5 in the southwestern portion of the study area, Valley View Avenue and La Mirada Boulevard in the eastern portion of the study area, Alondra Boulevard in the southern portion of the study area, and Carmenita Road and Bloomfield Avenue in the western portion of the study area, and Iseli Road between Rosecrans Avenue and Stage Road in the southeast portion of the study area. According to the September 2017 Traffic Analysis Report prepared for the Project, the existing 2015 Level of Service (LOS) for the Rosecrans/Marquardt Avenue intersection is LOS B during the A.M. and P.M. hours.

Bicycle and Pedestrian Facilities

No existing bike lanes are located along Rosecrans Avenue or Marquardt Avenue in the project area. The study area includes an existing Class II bicycle lane (a bicycle lane along the curb lane of a street or highway that provides 1-way travel with special striping and signage) on the portion of Rosecrans Avenue in the city of La Mirada, adjacent to and east of the project area (City of La Mirada, 2003a). The portion of Rosecrans Avenue in the project area in Santa Fe Springs is designated as a proposed bikeway in the County of Los Angeles Bicycle Master Plan (County of Los Angeles Public Works, 2012).

Figure 3-7. Los Angeles Metro 2014 Bike Map

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Figure 3-8. Train Station and Bus Stop Locations

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In addition, a Class I regional bike trail (a bicycle path with exclusive rights of way intended to serve bicyclists with the safest means of travel) named Coyote Creek Bikeway is 0.2 miles west of the Rosecrans/Marquardt Avenue intersection as shown in **Figure 3-7.** Los Angeles Metro 2014 Bike Map. The nearest access point is at the intersection of Rosecrans Avenue and the Coyote Creek Bikeway where there is an access ramp from the bicycle path to the roadway above. The Coyote Creek Bikeway follows the Coyote Creek channel through residential and industrial neighborhoods. The bikeway is 12 miles long and provides access from inland Los Angeles County to the Pacific Ocean via the connecting San Gabriel River. The LA Metro/Gateway Council of Governments Strategic Transportation Plan outlines the future construction of a Class II bikeway facility on Rosecrans Avenue between Fidel Avenue and Valley View Avenue.

Pedestrian facilities in the project area include sidewalks along both sides of the existing roadways. Sidewalks are currently provided along all legs of the Rosecrans/Marquardt Avenue intersection to facilitate pedestrian movement. Crosswalks are provided on the north, west and south legs of the Rosecrans/Marquardt Avenue intersection. Stage Road does not have sidewalk facilities in the south-east direction and has limited sidewalk facilities in the north-west direction near the Rosecrans Avenue and Stage Road intersection. No crosswalk is currently provided at the Rosecrans Avenue and Stage Road intersection.

Public Bus System

Public bus services in the study area are provided by the Norwalk Transit System and Metro. Three Norwalk Transit routes (Routes 3, 4, and 5) and several Norwalk Transit bus stops are in the study area, as shown in **Figure 3-8.** Train Station and Bus Stop Locations

Norwalk Transit Route 5 runs along Rosecrans Avenue in the project area. Los Angeles Metro Bus Line Route 460 also runs along Rosecrans. For Route 460, the two nearest stops to the project area are to the west on the Rosecrans Avenue and Carmenita Road intersection. (These bus routes are not illustrated in **Figure 3-8.** Train Station and Bus Stop Locations but the bus stops are shown).

Railroad Facilities

BNSF railroad tracks are located within the project area. The railroad corridor serves approximately 55 long distance and local freight trains, as well as an average of 57 passenger trains for both Metrolink and Amtrak, making it the second busiest inter-city passenger railroad corridor in the nation (Biggs Cardosa Associates, Inc., 2016). The Metrolink Norwalk/Santa Fe Springs station is 1.6 miles northwest and the Buena Park Metrolink Station is 3.4 miles southeast of the project area.

Most of the long-distance freight traffic along the corridor goes in and out of the Ports of Long Beach and Los Angeles, and is an important route for the movement of goods from the ports to the rest of the country. In addition, the railroad corridor has been identified by the CHSRA as a viable shared corridor alternative for the LA-Anaheim section. The corridor has also been identified as potential candidate for future electrified HSR vehicles.

3.8.3 Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in any traffic or transportation improvements, or improvements in pedestrian or bicycle facilities in the project area. This alternative would not improve the safety of railroad-roadway crossings or address future traffic and circulation issues forecasted for the project area. Under the No Build Alternative, LOS and vehicle delays for the A.M. and P.M. hours in 2020 would either remain the same or slightly increase from existing conditions. Longer vehicle delays and worsening levels of LOS would be a result of growth-induced traffic in the study area. Because this alternative would not directly affect existing conditions in the study area, no impacts are anticipated.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

Under the Build Alternative, Rosecrans Avenue would be realigned approximately 125 feet to the south, and an overpass would be constructed to raise Rosecrans Avenue over Marquardt Avenue, the BNSF ROW, and Stage Road. The southern leg of Marquardt Avenue (Marquardt Avenue [S]) would be extended under the overpass and connected to Rosecrans Avenue. The northern leg of Marquardt Avenue (Marquardt Avenue [N]) would be connected to Stage Road. A frontage road would also be constructed to connect Anson Avenue to the northern leg of Marquardt Avenue and Stage Road. Traffic signals would be installed on Rosecrans Avenue: one at the intersection with Marquardt Avenue to the west, and one to the east of the overpass structure at the intersection with Iseli Road. Other transportation improvements include sidewalk construction and parking lot reconfiguration.

Roadways

Since the City of Santa Fe Springs does not have an established criterion for determining significant traffic impacts, the City of Los Angeles Department of Transportation criteria[1] were used to determine significant changes in delay time during A.M. and P.M. peak hours, as shown in **Table 3-6.** Significant Delay Impact Criteria**.**

Table 3-6. Significant Delay Impact Criteria

Level of Service	Final Delay	Project-Related Increase In Delay
C	> 20 - 35	Equal to or greater than 6.0 seconds
D	> 35 – 55	Equal to or greater than 4.0 seconds
E	> 55 – 80	Equal to or greater than 2.5 seconds
F	> 80	Equal to or greater than 2.5 seconds

[1] *City of Los Angeles criteria was used because County of Los Angeles criteria (http://dpw.lacounty.gov/traffic/traffic%20impact%20analysis%20guidelines.pdf) uses volume to capacity (v/c) ratios rather than seconds of delay.*

Source: L.A. Department of Transportation Traffic Study Policies and Procedures

Removal of the at-grade Rosecrans Avenue and Marquardt Avenue intersection would require traffic to be diverted. Marquardt Avenue (N) and Marquardt Avenue (S) would no longer connect. Marquardt Avenue (N) would connect to Stage Road. Stage Road would connect to Anson Avenue via the new connector road. The connector road would be stop-controlled at the Stage Road intersection. Eastbound and Westbound traffic on Rosecrans Avenue would access Marquardt Avenue (S) through a new signalized intersection west of the proposed overpass. Northbound traffic on Stage Road would have access to Rosecrans Avenue via Iseli Road. A signalized intersection would replace the existing three-way stop-controlled intersection at Iseli Road and Rosecrans Avenue. Anson Avenue would be accessible via Stage Road or Marquardt Avenue (N). Eastbound and westbound traffic on Rosecrans Avenue would access Stage Road and Marquardt Avenue (N) from Iseli Road.

The anticipated increased delay at the Valley View Avenue and Rosecrans Avenue intersection will be averted by installing striping for right turn lanes within the existing roadway ROW for the eastbound and westbound approaches. The anticipated vehicle delay at Valley View Avenue and Foster Road will be avoided by installing a right turn lane on the eastbound approach. Traffic signals (Valley View Avenue/Rosecrans Avenue and Valley View Avenue/Foster Road intersections) will be retimed and monitored after Project completion for optimal circulation efficiency.

Traffic conditions under the No Build and Build Alternatives were modeled for future conditions (year 2040), as shown in **Table 3-7.** Intersection Level of Service and Delay. Removal of the Rosecrans Avenue and Marquardt Avenue would decentralize congestion by diverting traffic to surrounding intersections and roadways. Several intersections are expected to experience shortened delays and better LOS under the Build Alternative due to altered traffic circulation. Other intersections would experience minor increases in delay times. Therefore, the project is not anticipated to result in long-term operational impacts on traffic in the project area.

Rosecrans Avenue would remain open during construction to ensure that vehicle, bicycle, pedestrian, and public transit access in the study area would not be substantially changed or affected during construction. However, there could be temporary delays in traffic movements through the project area during the construction period because of construction equipment and vehicles traveling on roadways in the project area. A traffic management plan will be prepared to avoid additional traffic impacts on surrounding roadways in the study area from construction worker commutes, and material and equipment deliveries. Any minor traffic impacts resulting from construction would be temporary. Therefore, the Project would result in minor short-term construction impacts on traffic in the project area.

Bicycle and Pedestrian Facilities

There are no existing bike paths in the project area, and therefore, the Project would not result in permanent adverse impacts to bicycle facilities. Sidewalks would be included along the overpass as part of the Project as proposed in the County of Los Angeles Bicycle Master Plan (County of Los Angeles Public Works, 2012). Therefore, the Project would not result in adverse impacts on bicycle facilities.

Pedestrian access between Marquardt Avenue north of the project area and Rosecrans Avenue would be limited by the Project. A direct access route would no longer be available under the Project. However, pedestrians would still have access to Rosecrans Avenue via Anson Avenue pathway connection. Pedestrian access between Marquardt Avenue south of the project area and Rosecrans Avenue would be moved to a new location west of the existing intersection.

Public Bus System

Through implementation of the Project, the Norwalk Transit Route 5 bus stop would no longer be accessible. The Norwalk Transit Route 5 bus stop in the project area would need to be relocated as part of the Project. However, transit services would continue to be provided through the project area, and the bus stop would continue to operate at a new location in proximity to the project area. The new bus stop would be accessible to pedestrians via the pedestrian pathway connecting Rosecrans Avenue and Anson Avenue.

Railroad Facilities

Implementation of Alternative 2 would improve safety, maintain easy access for emergency responders, develop geometric solutions, minimize ROW and utility impacts, minimize impacts on BNSF facilities and operations, and provide for future HSR. The Project would not require any removal or construction on the BNSF railroad tracks, and therefore, would not disrupt BNSF operations. The overpass would not have any columns or footings within BNSF ROW that would permanently affect railroad operations. Railroad flagging services would be required during construction for work performed within BNSF ROW or with equipment (such as cranes) that could potentially come in conflict with a train. Continual coordination with BNSF would be conducted to ensure that Project construction would not adversely affect railroad operations in the project area.

3.8.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented for the Project.

T-1. The overpass would not have any columns or footings within BNSF ROW that would permanently affect railroad operations.

T-2. The Project would include development and implementation of a traffic management plan to accommodate traffic during Project construction.

T-3. Railroad flagging services would be required during construction for work performed within BNSF ROW or with equipment (such as cranes) that could potentially come in conflict with a train.

T-4. Continual coordination with BNSF would be conducted to ensure that Project construction would not adversely affect railroad operations in the project area.

T-5. Pedestrian access between Marquardt Avenue south of the project area and Rosecrans Avenue would be moved to a new location west of the existing intersection.

T-6. A Norwalk Transit Route 5 bus stop in the project area would be relocated nearby and would be accessible to pedestrians via the pedestrian pathway connecting Rosecrans Avenue and Anson Avenue to maintain bus access for the local community.

With implementation of the avoidance and minimization measures above, the Project is not anticipated to result in adverse impacts on traffic and transportation/pedestrian and bicycle facilities. Therefore, no mitigation would be necessary.

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Table 3-7. Intersection Level of Service and Delay

Intersection	Year 2015		Year 2020		Year 2040			
	No Build Alternative		No Build Alternative		No Build Alternative		Alternative 2	
	Delay (seconds) AM/PM	LOS AM/PM	Delay (seconds) AM/PM	LOS AM/PM	Delay (seconds) AM/PM	LOS AM/PM	Delay (seconds) AM/PM	LOS AM/PM
Carmenita Rd and Imperial Hwy	29.0/40.0	C/D	31.7/40.0	C/D	44.9/65.8	D/E	44.7/63.5	D/E
Carmenita Rd and Orden Dr	11.9/17.4	B/B	12.4/18.2	B/B	13.1/22.5	B/C	11.1/22.1	B/C
Carmenita Rd and Foster Rd	9.9/9.3	A/A	10.4/9.5	B/A	14.3/13.8	B/B	15.3/17.7	B/B
Carmenita Rd and Rosecrans Ave	36.9/37.5	D/D	40.4/39.5	D/D	62.2/57.9	E/E	60.8/60.6	E/E
Carmenita Rd and Pumice St	13.0/10.8	B/B	14.4/11.3	B/B	18.7/14.7	B/B	18.7/14.7	B/B
Carmenita Rd and Lowes Dr	3.8/4.1	A/A	3.9/4.9	A/A	4/5.3	A/A	4.0/5.3	A/A
Carmenita Rd and Alondra Blvd	56.3/42.7	E/D	61.9/45.9	E/D	86.3/65.9	F/E	86.6/65.9	F/E
Marquardt Ave and Imperial Hwy	8.6/9.0	A/A	8.8/9.2	A/A	9/9.9	A/A	8.5/9.3	A/A
Marquardt Ave and Foster Rd*	14.5/12.0	B/B	15.2/12.5	C/B	20.4/14.7	C/B	20.7/14.6	C/B
Marquardt Ave and Rosecrans Ave	11.2/10.7	B/B	11.4/10.9	B/B	12.7/11.3	B/B	-	-
Marquardt (S) Ave and Rosecrans Ave	-	-	-	-	-	-	5.3/6.0	A/A
Stage Rd and Connector Rd*	-	-	-	-	-	-	10.1/10.8	B/B
Rosecrans Ave and Stage Rd*	4.8/6.7	A/A	5.8/8.6	A/A	22.8/6.8	C/A	-	-
Rosecrans Ave and Anson Ave*	0.2/0.4	A/A	0.2/0.4	A/A	0.3/0.6	A/A	-	-
Marquardt Ave and Alondra Blvd	26.4/28.6	C/C	27.8/32.5	C/C	31.8/41.4	D/D	31.8/41.4	C/D
Alondra Blvd and W Freeway Dr	19.1/11.2	B/B	21.1/11.3	C/B	23.2/11.8	C/B	23.2/11.2	C/B
Alondra Blvd and E Freeway Dr	13.0/13.2	B/B	13.5/15.9	B/B	15.9/17.7	B/B	15.9/17.7	B/B
Valley View Ave and Alondra Blvd	43.2/41.9	D/D	46.9/47.5	D/D	75.1/68.2	E/E	75.2/68.2	E/E
Valley View Ave and Gannet St	13.4/13.0	B/B	14.5/13.9	B/B	16.2/20.8	B/C	16.6/22.8	B/C
Valley View Ave and Stage Rd	13.9/14.5	B/B	14.3/15.0	B/B	15.4/18.5	B/B	15.9/17.8	B/B
Valley View Ave and Rosecrans Ave	34.4/50.5	C/D	36.1/55.5	D/E	52.9/78.9	D/E	55.0/73.0	D/E
Valley View Ave and Foster Rd	26.9/15.4	C/B	29.6/15.8	C/B	50.6/19.9	D/B	46.3/19.1	D/B
Valley View Ave and Imperial Hwy	48.7/48.9	D/D	54.3/53.2	D/D	84.4/82.6	F/F	83.8/81.7	F/F
Imperial Hwy and Meyer Rd	23.3/20.0	C/B	25.6/21.1	C/C	25.0/24.7	C/C	24.3/24.4	C/C
Rosecrans Ave and Iseli Rd*	1/1	A/A	1.1/2	A/A	2.6/3.9	A/A	12.1/13.3	B/B

*Notes: *Unsignalized Intersection*
Source: W.G. Zimmerman Engineering, Inc., 2017

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3.9 Visual/ Aesthetics

The following discussion incorporates the results of the CIA prepared for the Project (GPA Consulting, 2016a).

3.9.1 Regulatory Setting

NEPA establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]).

3.9.2 Affected Environment

The study area considered for visual and aesthetic impacts was generally inclusive of the project area, the viewshed from the project area, and areas from where there are views of the project area.

Visual Setting

The visual character in the project area can generally be described as an urban developed area with primarily industrial and commercial land uses. Residences are approximately 400 feet north and not visible from the project area. The visual quality of the project area and its surroundings would generally be considered low. Several industrial warehouse buildings are located between the project area and the residences. One industrial building, the Vance and Hines building, is in the northeast corner of the Rosecrans Avenue and Marquardt Avenue intersection and is approximately 20 feet high. This building is the tallest feature between the residential area to the northeast and the project area to the southwest.

Scenic Resources

The project area does not include scenic resources. No scenic vistas are in the project area, and the project area is not within the viewshed of a state-designated scenic highway. The project area consists primarily of roadways, commercial and industrial buildings, and some residences approximately 400 feet north. Coyote Creek, approximately 1,086 feet west of the project area, is not considered a scenic resource and is not visible from the project area.

Existing Sources of Light or Glare

Existing sources of light and glare in the project area include vehicles on the roadway (from headlights at night, and sun reflecting off vehicles during the day), and nighttime lighting from street lights and buildings in the residential, commercial, and industrial developments adjacent to the roadway.

3.9.3 Environmental Consequences

Alternative 1: No Build Alternative

Implementation of the No Build Alternative would not require construction or result in changes to the existing roadway; therefore, no visual or aesthetic impacts are anticipated.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

Visual Resources

The Project would include construction of an overpass to replace the existing at-grade railroad crossing, which would result in a new vertical element that would be visible to nearby viewers and could alter the visual character of the project area. However, the road realignment and the new overpass would be designed to maintain or complement the aesthetic appearance of the surroundings, and would not be expected to result in noticeable visual changes during Project operation.

The nearest sensitive viewers are residences approximately 400 feet north of the project area. Industrial warehouse buildings are located between the project area and the residences. The buildings to the south would be acquired and removed to construct the Project. A building to the north, the Vance & Hines Building would remain following Project construction and would continue to impair views of the overpass from residences to the northeast. Therefore, the overpass would not be visible from the residences because the overpass would only be 1.75 time taller than the Vance and Hines building, and views of the overpass from the community would be blocked by buildings adjacent to the community, north of the Vance and Hines building (see **Figure 3-3.** Visual Simulation).

In addition, the new overpass would likely blend in with the industrial landscape surrounding the project area because the overpass would most likely be constructed of similar colors and materials as adjacent buildings (e.g., gray concrete and asphalt). Landscaping and aesthetic features would be incorporated in to the Project as well. The proposed overpass would be lined by decorative chain-link fencing, barrier motif, and lighting. Aesthetic designs concepts were submitted in November 2016 and were approved by Santa Fe Springs City Council Aesthetics Subcommittee. Therefore, the Project would not result in impacts on visual resources.

Scenic Resources

Because no scenic resources are in or near the project area, no adverse impacts on scenic resources are anticipated.

Sources of Light and Glare

The road re-alignment and new overpass would be designed to maintain or complement the aesthetic appearance of the surroundings, and would result in minimal additional sources of light or glare during Project construction and operation. During construction, vehicles, equipment, and materials may be staged adjacent to the project area, and may temporarily result in additional glare, and some construction activities may require additional lighting; however, these impacts would be short-term and temporary, and would not be expected to be substantial because the levels of light and glare would be restored to existing conditions following construction.

During operation, the installation of new street lights and traffic signals would slightly increase light sources above existing conditions. However, the project area is in an urban setting with primarily industrial

and commercial structures, and no residential dwellings are within the immediate project area. The nearest residences are 400 feet north of the project area, and views of the project area are blocked by existing structures, so slight increases in light sources from the Project would not be noticeable to sensitive viewers. Therefore, impacts from light and glare would not be adverse.

3.9.4 Avoidance, Minimization, and/or Mitigation Measures

The Project would not be expected to result in adverse impacts related to visual/aesthetics; therefore, no avoidance, minimization, and/or mitigation measures are required.

3.10 Cultural Resources

The following discussion incorporates results from the Historic Properties Evaluation Report (HPER) (GPA Consulting, 2016b), the Archaeological and Paleontological Resources Phase I Assessment (ASR) that were completed for the Project (GPA Consulting, 2017).

3.10.1 Regulatory Setting

The term "cultural resources," as used in this document, refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, archaeological resources (both prehistoric and historic), and paleontological resources regardless of significance. Laws and regulations dealing with cultural resources include:

National Environmental Policy Act

NEPA mandates the preservation of "important historic, cultural, and natural aspects of our national heritage" (§101.b4). In addition, NEPA is interpreted as providing for the protection and preservation of paleontological remains.

Section 106 of the National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 (Public Law 89-665; 16 U.S.C. 470 et seq.) is legislation intended to preserve historical and archaeological sites in the United States. Section 106 of the NHPA requires federal agencies that license or fund projects to consider the undertaking's effects on historic properties. For the purposes of Section 106 of the NHPA, an "historic property" is a resource (prehistoric or historic district, site, building, structure, or object) that is included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Section 106 review gives equal consideration to properties that have already been included in the NRHP as well as those that have not yet been included, but that meet one or more of the NRHP Criteria.

3.10.2 Affected Environment

Area of Potential Effects

Area of Potential Effects (APE) for the Project includes all areas that could potentially be affected either directly or indirectly by the Project, including construction, excavation, staging, and other activities that would disturb the site. The APE is considered the study area for cultural resources. The historic,

archeological, and paleontological resource APEs are the same for the Project. The APE is located north of I-5 and west of Valley View Avenue at milepost 157.8 on the BNSF San Bernardino Subdivision (MTA 2014). The APE is on the United States Geological Survey (USGS) 7.5-minute Whittier quadrangle (1965 PR 1981). The APE is on the border of Sections 16 and 21 of Township 3S Range 11W of the San Bernardino Base and Meridian, and has a surface elevation range of between 82 and 112 feet above mean sea level (amsl).

The total horizontal area of the APE is approximately 53.2 acres (see **Figure 3-9.** Area of Potential EffectsError! Reference source not found.). The vertical extent of the APE is approximately 100 feet below grade at its lowest points, which are at the locations of the 28 concrete piles (piles provide support for the overpass). The purpose of the concrete piles is to provide support for the overpass. The piles would be constructed by drilling large diameter holes in the ground. The APE also extends 35 feet above grade at the tallest points of the proposed overpass.

Per Section 106, SHPO was consulted on January 19, 2017 to verify the Project's APE boundary (see **Appendix A**). SHPO approved the proposed APE on February 16, 2017 (See **Appendix B**). The APE boundary is illustrated in **Figure 3-9.** Area of Potential Effects.

Records Searches and Research

Historic Structures

According to the California Office of Historic Preservation, a structure is "historic" if it is 50 years old or older. Historic structures that are determined eligible for the NRHP are "historic properties" for the purposes of Section 106 compliance.

A records search for historic structures was conducted on December 4, 2015 at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton for the Project's HPER (GPA Consulting, 2016b). The records search included a review of all recorded historic and prehistoric archaeological sites within a 0.5-mile radius of the APE, as well as a review of known cultural resource surveys and excavation reports.

The records search included an examination of national, state, and local inventories of architectural/historic resources, including listings from the NRHP, California Register of Historical Resources, California Historical Landmarks, California Points of Historical Interest, and the California State Historic Resources Inventory for Santa Fe Springs. The results of the records search indicated that four structures within a 0.5-mile radius of the APE had been evaluated previously for historic significance. The four identified structures included three properties and a segment of the BNSF railroad. One additional structure located just outside the 0.5-mile radius was also previously evaluated. Although not technically within the search radius, it was included in the record search results due to its close proximity.

Figure 3-9. Area of Potential Effects

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Of the four structures identified in the 0.5-mile radius, the BNSF railroad segment was previously determined ineligible for the NRHP, California Register of Historical Resources, and Local Listing; one property was previously determined ineligible for the NRHP, but the evaluation was considered incomplete; and two properties have been demolished since their previous NRHP eligibility determination. The structure identified outside of the 0.5-mile radius did not include an eligibility status.

In addition to reviewing the records search, the Caltrans Historic Bridge Inventory was reviewed due to the presence of one bridge, Caltrans Bridge No. 53C1443, within the APE. Bridge No. 53C1443, constructed in 1959, is listed in the Caltrans Historic Bridge Inventory as a Category 5 bridge, indicating that it has been previously evaluated and determined ineligible for the NRHP.

Archaeological & Paleontological

A cultural records search, preliminary archival research, and paleontological resource records search were conducted for the Project in January 2016 for the Project's ASR (GPA Consulting, 2017). The results of this research indicated that 31 historic-period built resources and no prehistoric resources have been recorded within a 1-mile radius of the project area. Findings regarding historic-period built resources identified within the 0.5-mile radius search were consistent with the HRER search results above.

Of the additional historic-period built resources identified within the 0.5-mile and 1-mile buffer, one existing significant historic resource was identified, P19-178616 (also P19-180617), in the City of La Mirada. This resource, the McNally's Windermere Ranch (Neff Park), contains three additional resources, all of which are listed on the NRHP. These resources are P19-180618 (Carriage Barn), P19-180619 (George House), and P19-180620 (Neff Home). They consist of single-story, post-World War II residences that surround Neff Park on the west and south. They are located on San Ardo Drive and on Valley View Road in La Mirada.

No paleontological resources have been recorded within the APE, but one fossil locality has been recorded within the vicinity of the project area. This fossil specimen was at a shallow depth in older Quaternary alluvium, which is the same geologic unit as that at the Rosecrans/Marquardt Avenue intersection.

Native American Contact

A search of the Sacred Lands Inventory was requested from the Native American Heritage Commission (NAHC) in January 2016. Based on the NAHC's search of the Sacred Lands Inventory, no recorded Native American traditional sites or places have been identified in the project area. However, the NAHC provided a list of Native American tribes, individuals, and organizations, who may have knowledge of cultural resources in the project area. On February 19, 2016, FRA initiated contact with Native American tribes, federally recognized and unrecognized, via letters through mail and email, for information regarding the presence of sensitive Native American cultural resources or other sensitive resources within the project area, consistent with Section 106 of the National Preservation Act. Per Section 106, SHPO was consulted on January 19, 2017 to verify the Project's APE boundary and Native American consultation process (see **Appendix A**). SHPO approved the proposed process with the APE on February 16, 2017 (See **Appendix B**).

Ten persons were contacted for consultation. Follow-up calls were made to the Native American tribes on March 4, 2016. The following people in **Table 3-8.** Native American Consultation Summary were contacted for consultation.

Table 3-8. Native American Consultation Summary

Name	Affiliation	Contact Type	Comments
Sam Dunlap	Gabrielino/Tongva Nation, Cultural Resources Director	Left voicemail on March 4, 2016 Sent letter on Feb 19, 2016	No written response as of May 18, 2016
Ron Andrade	Los Angeles City/ County Native American Indian Commission	Phone number disconnected , sent email on March 7, 2016 Sent letter on Feb 19, 2016	No written response as of May 18, 2016
Robert F. Dorame	Gabrielino Tongva Indians of California Tribal Council, Director	Phone call on March 4, 2016 Sent letter on Feb 19, 2016	Asked to resend packet. Reiterated if there is still no response, they have no affiliated family. No written response as of May 18, 2016
Bernie Acuña	Gabrielino-Tongva Tribe, Co-Chairperson	Left voicemail on March 4, 2016 Sent letter on Feb 19, 2016	No written response as of May 18, 2016
Linda Candelaria	Gabrielino-Tongva Tribe, Co-Chairperson	Left voicemail on March 4, 2016 Sent letter on Feb 19, 2016	No written response as of May 18, 2016
Andrew Salas	Gabrieleno Band of Mission Indians – Kizh Nation	Phone call on March 4, 2016 Sent letter on Feb 19, 2016	Mentioned that the Project is located within the boundaries of two prominent overlapping villages, Sejat and Nacuangna. Recommended archaeological and Native American monitors during ground disturbing activities, and requested phone log documentation. No written response as of May 18, 2016 Claimed direct family connection through Spanish and Native ancestry.

Name	Affiliation	Contact Type	Comments
			Asked for email correspondence to send pertinent information. Emailed response on March 4, 2016
Anthony Morales	Gabrieleño/Tongva San Gabriel Band of Mission Indians, Chairperson	Phone call on March 4, 2016 Sent letter on Feb 19, 2016	Expressed concern due to village sites near San Gabriel River bed and the probability of railroads built on major prehistoric footpaths.
Sandonne Goad	Gabrielino/Tongva Nation, Chairperson	Left voicemail on March 4, 2016 Sent letter on Feb 19, 2016	No written response as of May 18, 2016
Conrad Acuña	Gabrielino-Tongva Tribe	No phone number or email to contact Sent letter on Feb 19, 2016	No written response as of May 18, 2016
John Tommy Rosas	Tongva Ancestral Territorial Tribal Nation, Tribal Administrator	No mailing address so letter sent via email on Feb 22, 2016	Emailed confirmation of receipt of letter No written response as of May 18, 2016

Source: GPA Consulting, 2017

Of the tribes, individuals, and organizations contacted regarding the Project, a response was received from Chairperson Andrew Salas of the Gabrieleño Band of Mission Indians – Kizh Nation. In his response, Chairperson Salas did not mention any specific sites within the proposed APE, but did mention that the Project is located within the boundaries of two prominent overlapping villages, Sejat and Nacuangna. These two villages correlate with two of the villages discussed in the Archival Research results, Suvangna and Nakaungna, though research places the villages north and west of the Project. Historical records of these villages utilize the course of the San Gabriel River and its tributaries as locational data. Before modern channelization, the San Gabriel River was known to change course dramatically following flood events, and may subsequently prove an unreliable indicator of historic sites. Salas states that these two villages covered the area now occupied by Santa Fe Springs and Los Nietos (unincorporated area

northwest of Santa Fe Springs). Due to the sensitivity of the area, Mr. Salas requested a tribal monitor be "on site at this Project location during all ground disturbance (this includes but is not limited to pavement removal, pot-holing or auguring, boring, grading, excavation and trenching)." The monitor would provide daily written reports and photographs of all activities as well as any cultural materials identified. Salas also states that despite the area being disturbed, there is still a possibility of finding cultural resources. He lists two examples of where prominent archaeological sites were encountered on previously developed project sites, one of which was not properly mitigated.

Anthony Morales, Chairperson of the Gabrieleño/Tongva San Gabriel Band of Mission Indians, also expressed his concerns regarding the Project, although he never sent a formal response but conveyed this information via telephone, stating that putting his comments in a phone log would serve as official documentation. He initially asked how close the project area is to the San Gabriel River, because the area around the riverbed is sensitive as many village sites were once located there. He also stated that historic railways were often built on major prehistoric footpaths. He therefore felt that the Project had the potential to yield Native American cultural resources and thus recommended that both an archaeological monitor and Native American monitor be present during Project-related ground disturbance.

Historic Structures

Based on the results of the records search, research, and field surveys, two of the four historic structures identified in the 0.5-mile search radius were within the APE. One resource was previously evaluated for listing in the NRHP. The resource is a segment of the BNSF railroad (Record # 19-186804) that runs through the APE and the half-mile search radius. An approximately 15-mile segment of the railroad was previously evaluated and found ineligible for the NRHP due to a lack of integrity. The segment was given a status code of 6Z (Found ineligible for the NRHP, California Register of Historical Resources, or Local designation through survey evaluation).

The second historic structure within the APE is a single-story industrial building (P19-186801) attached to a large warehouse belonging to Pan Pacific Fiber, Incorporated (Recycling). The resource is in the northwestern portion of the APE, within 0.25-mile of the Rosecrans/Marquardt Avenue intersection. The building was previously determined ineligible for the NRHP, but the evaluation was considered incomplete. The building was reevaluated as part of the Project, and was determined ineligible for the NRHP.

An architectural field survey was conducted on December 9, 2015. The purpose of the field survey was to examine the buildings and structures located within the APE greater than 45 years of age. Nine parcels were identified with buildings greater than 45 years of age were identified in the APE. One of the parcels was the previously identified industrial building (P19-186801), which was determined ineligible for the NRHP. The eight remaining parcels were evaluated and determined to be ineligible for NRHP listing as well (see **Appendix C**).

Coordination is ongoing with SHPO, who confirmed determinations regarding historic resources in the study area on November 22, 2017, as noted in **Appendix C**. Therefore, these structures are not considered historic properties for the purposes of Section 106 compliance, and no further analysis is required.

Archaeological Resources

During a pedestrian survey on January 15, 2016, historic archaeological resources were identified near the BNSF lines from the public ROW that may be related to either the current tracks or tracks that were previously present.

The artifacts include railroad spikes, bolts, tie plates, anchors, washers, and other metal artifacts. None of the non-attached metal artifacts were diagnostic, and were not significant by themselves. Several non-attached rails were nearby that were manufactured by Progress Rail, but they did not appear to be historic.

Many of the base plate shoulders and brackets attached to the inactive rails did have marks on them, but not enough information could be obtained to identify the marks or assign dates, with the exception of PMCo that belongs to the no longer existing P.M. Company. One potential artifact was southwest of the railroad tracks on the southeast side of the Rosecrans/Marquardt Avenue intersection. The artifact consists of two halves of a ceramic item and was partially marked with "RAC/…AD". The mark is unknown and no information could be obtained about it, and thus no date was identified.

No previously recorded prehistoric archaeological resources were identified through record searches or observed in the project area. However, responses from the Native American tribes indicated that the Project is in a sensitive area where many Native American villages were once present.

The majority of the project area is paved and in a heavily developed area, with properties/businesses surrounding the Rosecrans/Marquardt Avenue intersection. The only portion of the APE that was not paved was the BNSF ROW on the northwest and southeast sides of the intersection, which was covered in imported gravel and sand. The intersection is mostly covered in asphalt and surrounded by businesses, and no native soil was observable on the surface.

Because the APE is mostly surrounded by businesses and covered in asphalt and concrete, the ability to identify signs of potential historic and prehistoric archaeological resources may be limited. However, historic or prehistoric archaeological resources may occur beneath the project area because historic archaeological resources were observed near the BNSF lines, and because the project area is sensitive for Native American resources as indicated through Native American consultation. Several informational sources were consulted with for general contextual research on the surrounding project area to identify significant local historical events and personages, development patterns, and unique interpretations of architectural styles, as well as building specific research on the properties located within the Project APE. Sanborn maps from 1924, along with other relevant historic archives, were researched for the Project. No specific findings regarding cultural resources were identified from review of the Sanborn Maps.

Paleontological Resources

No previously recorded paleontological resources were identified through record searches or observed in the project area. According to the Natural History Museum of Los Angeles County (LACM), the native sediment beneath the Rosecrans/Marquardt Avenue intersection, along with the majority the APE, has a high potential for paleontological resources. Therefore, paleontological resources may occur below the surface within native deposits that are composed of older Quaternary alluvium.

3.10.3 Environmental Consequences

Alternative 1: No Build Alternative

Implementation of the No Build Alternative would not require construction or result in changes to existing conditions; therefore, no impacts are anticipated.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

Historic archaeological resources were encountered in the project area, specifically in the BNSF ROW, during a field survey conducted in January 2016. The resources identified were directly related to the BNSF railroad tracks. Project construction would not require realignment or excavation of the BNSF railroad tracks in the project area. Excavation outside of the BNSF ROW could be required for completion of the Project. Project construction activities have the potential unearth historic archaeological resources. Disturbance of previously-unidentified historic archaeological resources would be considered an adverse impact. However, implementation of avoidance and minimization measures discussed below, would avoid or substantially minimize any potential impacts.

No previously recorded prehistoric archaeological resources were identified through record searches or observed in the project area. Responses from the Native American tribes indicated that the Project is in a sensitive area where many Native American villages were once present. Although no Native American resources have been recorded within one mile of the project area, there is still the potential for resources to occur in buried native sediments that could be disturbed by the Project, based on the former Native American occupation of the area, and as stated in the Native American responses.

The Native American responses requested the presence of a Native American monitor during Project-related ground disturbance as included in measure C-7. With implementation of avoidance and minimization measures discussed below, the Project's impacts would be avoided or substantially minimized, and no adverse impacts on Native American prehistoric archaeological resources are anticipated.

According to LACM, the native sediment beneath the Rosecrans/Marquardt Avenue intersection, along with the majority the APE, has a high potential for paleontological resources. Therefore, paleontological resources may occur below the surface within native deposits that are composed of older Quaternary alluvium. Disturbance of previously-unidentified paleontological resources would be considered an adverse impact. With implementation of avoidance and minimization measures discussed below, the

Project's impacts would be avoided or substantially minimized, and no adverse impacts on paleontological resources are anticipated.

3.10.4 Avoidance, Minimization, and/or Mitigation Measures

To avoid and/or minimize potential impacts on archaeological and paleontological resources during construction, the following avoidance and minimization, measures would be implemented:

C-1 If any excavations or disturbances are to occur within the BNSF ROW (tracks plus imported fill/gravel on either side of the tracks), then they should be monitored full-time by a qualified archaeologist or archaeological monitor.

C-2 Any ground disturbances deeper than the engineered fill should be monitored full-time for paleontological resources by a qualified paleontologist or paleontological resources monitor. In addition, if indicators of microfossils (small teeth, bone fragments, abundant mollusks, plant debris, clay casts, carbonate-rich paleosols, or mudstones) are observed at any time during mitigation monitoring, samples of native sediment should be collected and processed per the Society of Vertebrate Paleontology (SVP) 2010 guidelines. If paleontological resources are uncovered during Project construction, then work must stop in the immediate area of the resource and the paleontologist must assess the find and make appropriate recommendations.

C-3 If an archaeological or paleontological resource is encountered during construction when a monitor is not on site, then all work must halt in the area, and the Project Archaeologist and/or Project Paleontologist must be notified. Work cannot resume in the area until the find is assessed by the archaeological or paleontological professional and properly mitigated, and the professional indicates that construction can resume. If human remains are encountered at any point during Project construction, then the procedures dictated by law (see Regulatory Setting) must be implemented. If any resources are collected during mitigation monitoring of the Project, they must be properly processed, identified, analyzed, catalogued, and prepared for curation, as well as any other laboratory tasks that may need to be undertaken. All significant archaeological and paleontological resources collected during mitigation monitoring are to be curated at an accredited and permanent scientific institution. A Final Report of Findings document must also be prepared before the artifacts and/or fossils are curated at a legal repository. If no resources are collected or observed, then a Negative Findings document must be prepared instead. The report is to be submitted to Metro, SCCIC, and to the scientific institution at which any collected artifacts and/or fossils will be curated.

C-4 Section 106 of the NHPA does not apply to paleontological resources unless the paleontological specimens are found in a culturally related context (i.e., fossil shells included as mortuary offerings in a burial or a rock formation containing petrified wood used as a chipped stone quarry). In such instances, the material is considered a cultural resource and is treated in the manner prescribed for the site by Section 106. If excavation is required during Project construction, and a paleontological site is uncovered during construction monitoring, then the site would need to be

evaluated for NRHP listing eligibility and significance. If the site is determined to be significant, Metro would consult with the SHPO for further direction under Section 106.

C-5 Any previously unknown archaeological sites discovered during the construction process will be subject to Section 106 review. The Project archaeologist must determine, in coordination with FRA, if the site is, or has the potential to be, eligible for the NRHP. All potential impacts to the resource must be considered, along with Project alternatives to avoid or reduce impacts on the site. Any determinations of eligibility, determinations of effect, or potential treatment/mitigation measures must be done within the Section 106 process. That process would require consultation with the SHPO and consulting parties to reach concurrence. If the Section 106 consultation results in an adverse effect, that adverse effect must be resolved. Resolution may require the execution of a Memorandum of Agreement (MOA) in order to summarize the commitments required to fulfill the Section 106 process

C-6 At the conclusion of the Project, an update to the Department of Parks and Recreation site record for the BNSF (P18-186804) should be completed that documents the artifacts that are found within its vicinity.

C-7 An archaeological monitor will be present in addition to a Native American monitor during any ground disturbance activity.

With implementation of these avoidance and minimization measures, adverse impacts would be minimized and no mitigation measures are required.

3.11 Water Quality and Storm Water Runoff

The following discussion incorporates the results of the Preliminary Geotechnical Report and the Phase I Initial Site Assessment (ISA) prepared for the Project (Earth Mechanics, Inc., 2015; Cornerstone Technologies, 2016).

3.11.1 Regulatory Setting

Federal

Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the U.S. from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

National Pollutant Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including MS4s. An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water."

The Project is in Santa Fe Springs, which is under the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB, Region 4). LARWQCB protects ground and surface water quality in the Los Angeles Region and oversees implementation of permit requirements and discharge controls pursuant to the federal NPDES program. The regional Water Quality Control Plan (WQCP) was adopted by LARWQCB to provide guidance to Los Angeles dischargers regulated under NPDES. The Basin Plan is organized by watershed within the entire Los Angeles Basin and the city is included within the San Gabriel River watershed, which receives drainage from a large area of eastern Los Angeles County. The LARWQCB implements the Basin Plan by issuing orders for investigation, cleanup, and abatement at sites containing discharges of waste and prohibiting certain discharges of waste in some areas.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from all construction sites in California that disturb one acre or more. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Operators of regulated construction sites are required to develop storm water pollution prevention plans (SWPPP); to implement sediment, erosion,

and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

3.11.2 Affected Environment

The project area is in an urban developed area surrounded primarily with asphalt paving and industrial and commercial land uses. No natural drainage or riparian areas existing within the project area. Storm water in the project area discharges into Coyote Creek approximately 0.2 mile to the west, which discharges into the Pacific Ocean approximately 11.8 miles south.

Many of the channels, creeks, and rivers in the Los Angeles area are controlled through channelized structures and other flood control mechanisms. The Los Angeles County Department of Public Works Flood Control District (LAFCD) has jurisdiction over major drainage and flood control improvements in Santa Fe Springs, and maintains numerous regional storm drains and flood control channels for this purpose. These regional improvements are complemented by local storm drain improvements provided by the City.

The principal streams near the project area are the San Gabriel River and Rio Hondo River, which flow south from the San Gabriel Mountains and through the Whittier Narrows and down towards the Pacific Ocean. The San Gabriel River is approximately four miles west of the project area, while the Rio Hondo River is approximately 6.8 miles northwest of the project area.

The primary sources of pollution in local waterbodies are from existing roadway operations including oil, grease, metals, petroleum products, pesticides, total suspended solids (TSS, which are solids in water that can be trapped by a filter, such as silt, decaying plant and animal matter, industrial wastes, and sewage), total dissolved solids (TDS, which are mobile charged ions, including minerals, salts, or metals, that are dissolved in water), nutrients, pathogens (bacteria, viruses, or other microorganisms that can result in disease), and litter. These pollutants are typically washed off the roadway surfaces by rainfall and discharged into local waterways via drains or directly through storm water runoff.

3.11.3 Environmental Consequences

Alternative 1: No Build Alternative

Implementation of the No Build Alternative would not require construction or result in changes to existing conditions; therefore, no impacts are anticipated.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

When surface area of impervious surface is increased, additional storm water runoff is produced and conveyed into storm water facilities. The Project would include construction of an overpass at the intersection of Rosecrans Avenue, Marquardt Avenue, and the BNSF railroad tracks. However, implementation of the Project would not result in an increase of impervious surfaces because the original roadway would be removed and restored to pervious surface (see **Table 3-9.** Impervious Surface Area). The Project would result in a two percent increase of perviousness in the project area (Civil Works

Engineers, 2016). Existing drainage patterns would be maintained, and the Project would be able to adequately accommodate runoff levels, and adverse impacts on storm water facilities are not anticipated.

Table 3-9. Impervious Surface Area

Existing Conditions		Alternative 2: Offset Overpass with Connector Road	
Acres	Percent Impervious	Acres	Percent Impervious
50.5	87	50.5	85

Source: Civil Works Engineers, 2016

The Project would not result in a substantial increase in impervious surface area and generally would improve traffic circulation in the study area without increasing overall volume. Therefore, the Project would not result in additional sources of pollution, such as oils, grease, and petroleum products that come from motor vehicles, because the Project would not result in additional amounts of vehicular traffic moving through the area beyond what would move through the area under the No Build alternative.

During construction, there is potential that exposed soils, construction debris, and other pollutants could be carried in storm water runoff and discharged into drainages near the project area. The Project would be required to comply with applicable permits, as identified in avoidance and minimization below.

3.11.4 Avoidance, Minimization, and/or Mitigation Measures

The Project would be designed and constructed in accordance with the objectives of applicable NPDES MS4 and Construction General Permits, which would substantially minimize potential impacts as reflected in the measures below.

W-1. The Project would include storm water treatment BMPs that would minimize sediment movement and storm water contamination along roadways. Therefore, no adverse impacts on water quality are anticipated from operation of the Project.

W-2. Construction impacts from the Project would be minimized through compliance with the NPDES Construction General Permit, which requires the development and implementation of a SWPPP. The SWPPP must include erosion and sediment control BMPs, as well as BMPs that control other potential construction-related pollutants. A Construction Site Monitoring Program that identifies monitoring and sampling requirements during construction is also a required component of the SWPPP.

W-3. Construction BMPs would include implementation of erosion control measures, street sweeping and vacuuming, and installation of concrete washout bins, fiber rolls, drainage inlet protection, and sediment barriers. BMPs would be finalized during final Project design.

The Project would include implementation of avoidance and minimization measures identified above and would comply with applicable permit requirements. Therefore the Project is not anticipated to result in adverse impacts on water quality and storm water runoff.

3.12 Hazardous Waste/ Materials

The following discussion incorporates the results of the Phase I ISA prepared for the Project (Cornerstone Technologies, 2016).

3.12.1 Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, waste, and the investigation and mitigation of waste releases, air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act of 1976 (RCRA). The purpose of CERCLA, often referred to as "Superfund," is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992;
- CWA;
- Federal Clean Air Act (FCAA);
- Safe Drinking Water Act;
- Occupational Safety and Health Act (OSHA);
- Atomic Energy Act;
- Toxic Substances Control Act (TSCA); and
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

In addition to the acts listed above, EO 12088, *Federal Compliance with Pollution Control Standards,* mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires clean-up of wastes that are below hazardous waste concentrations but could impact ground and surface water quality.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during Project construction.

3.12.2 Affected Environment

Sensitive Receptors

Sensitive receptors are those members of the population that are most sensitive to pollutants, including children, the elderly, and the acutely and chronically ill. Sensitive receptors are often found in schools, daycare centers, playgrounds, and medical facilities. No schools, daycare centers, or medical facilities are in or adjacent to the project area. The nearest schools to the project area are Forest Road Elementary School at 13930 Foster Road in La Mirada, approximately 0.5 mile north; Saint Paul of the Cross School at 14030 Foster Road in La Mirada, approximately 0.5 mile north; Arlie F. Hutchinson Middle School at 13900 Estero Road in La Mirada, approximately 0.5 mile east of the Project.

Asbestos-Containing Materials

A preliminary survey for asbestos-containing materials (ACM) was not conducted. Structures built before 1978 have the potential to contain ACMs. Based on the age of existing structures in the project area, there is potential for ACMs to be present in the project area. Smaller structures in the project area may contain ACMs. ACMs may also be on power poles in wire conduits.

Lead-Based Paint

Due to the age of some structures, there is the potential for lead-based paint (LBP) to be present in the project area. Deteriorated LBP may mix with dust, soil, and other particulate matter and become spread throughout a structure. Lead is a highly toxic metal that may cause a range of health problems when absorbed into the body.

Aerially-Deposited Lead

Aerially Deposited Lead (ADL) refers to lead deposited on highway shoulders from past leaded fuel vehicle emissions. Although leaded fuel was prohibited in California since the 1980s, ADL may still be present in soils adjacent to roadways that were in use prior to that time.

The State of California and the federal government both have hazardous waste regulations pertaining to lead in soil and other waste materials. In California, soil containing 1,000 milligrams per kilogram (mg/kg) or more of total lead or 5 milligrams per liter (mg/l) or more of soluble lead is considered a "California hazardous waste," although certain variances or exemptions may apply. These total and soluble lead concentrations are often referred to as the "total threshold limit concentration" (TTLC) and the "soluble threshold limit concentration" (STLC), respectively.

Due to the historical use of motor vehicle fuels (MVF) containing lead, property adjacent to historical thoroughfares typically contain concentrations of lead that have been historically aerially deposited.

Creosote

Creosote is a wood preservative that is the result of distillation of tar from wood and coal (United States Environmental Protection Agency, 2016). Creosote is a pesticide treatment that is used to protect wood against termites, fungi, mites and other pests that degrade wood. These treated wood products are used in outdoor settings such as in railroad ties and utility poles. The BNSF railroad ties in the project area may contain creosote. Creosote treated wood waste is designated as Treated Wood Waste and requires special handling and disposal at an approved Treated Wood Waste disposal facility.

Oil and Gas Operations

A SoCalGas High Pressure Gas Line sign was observed along the Coyote Creek Bikeway near the project area. Review of the National Pipeline Mapping System (NPMS) and SoCalGas Pipeline Map identified active Chevron and Crimson Oil pipelines along Stage Road. According to the California Department of Conservation's Division of Oil, Gas, and Geothermal Resources (DOGGR) database, there is one oil/gas well approximately 600 feet southwest of the Rosecrans/Marquardt Avenue intersection. The well is identified as API# 03705675 Mobil Oil Corporation. This well is located at 14032 Marquardt Avenue.

An issue of concern with oil wells is the potential emission of methane and hydrogen sulfide gases. These gases can migrate through geologic materials, foundations, and/or through pathways such as old oil wells, and fissures and fractures in underlying geologic formations. The emitted gases have the potential to accumulate within building interiors, adversely affecting human health and create explosive conditions.

Polychlorinated Biphenyls

Polychlorinated Biphenyls (PCBs) are a major type of toxic chemical regulated by TSCA. PCBs are most commonly found in electrical transformers and capacitors, air conditioning equipment, and lighting ballasts. PCB liquids have been used as coolants, lubricants and hydraulic fluids in such equipment as electrical transformers, fluorescent light ballasts, electrical panels, large compressor, internal combustion engine crankcases, and hydraulic elevator lift equipment. In May of 1979, Federal regulations prohibited the use of PCB dielectric fluids in the manufacture or service of equipment.

No possible PCBs were observed in the project area. However, overhead power lines were identified along both Rosecrans and Marquardt Avenues, and utility poles and transformers were observed in the immediate surroundings.

Underground Storage Tanks

The Phase I ISA Report completed for the Project did not identify any Underground Storage Tanks (UST) in the project area; however, further investigation of property information and compliance records identified one UST site located at 13949 Stage Road. The report identified three Leaking Underground Storage Tanks (LUST) designations within a 0.25-mile search radius of the project area. The report did not identify any UST designations within a 0.25-mile search radius of the subject site. Additionally, the report

identified six Hazardous Substance Storage Container Database (HIST UST) designations within a 0.25-mile search radius of the subject site. Cleanup has been completed at all identified LUST sites.

3.12.3 Environmental Consequences

Alternative 1: No Build Alternative

Implementation of the No Build Alternative would not require construction or result in changes to existing conditions; therefore, no impacts are anticipated.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

Asbestos-Containing Materials and Lead-Based Paint

A preliminary survey for Asbestos Containing Building Materials (ACMs) and Lead Based Paint (LBP) was not included as a part of the Phase I Initial Study. Based on the age of existing structures in the project area, there is potential for ACM and LBP to be present in the project area. The Project would require the removal of roadway and several structures in the project area during Project construction. Removal of structures containing ACM or LBP could pose a health threat to workers and pedestrians in the project area via exposure of these hazardous materials.

Aerially-Deposited Lead

Depending on the concentrations, near-surface soil containing ADL can pose a health risk to construction workers through inadvertent ingestion and/or the inhalation of particulates, and can be a hazardous waste. There is potential for the exposure of ADL to occur during construction activities because the Project is in a transportation corridor where ADL could be present.

Creosote

Based on the age of the BNSF railroad tracks in the project area, the railroad ties have potential to contain creosote. Creosote treated wood waste is designated as Treated Wood Waste and requires special handling and disposal at an approved Treated Wood Waste disposal facility.

Project improvements would include re-aligning Rosecrans Avenue to the south and constructing an overpass over the BNSF railroad tracks. The Project would not require any removal or construction on the BNSF railroad tracks that could expose workers or pedestrians to creosote. Therefore, the Project would not result in impacts related to creosote.

Oil and Gas Operations

An oil/gas well was identified in the project area at 14032 Marquardt Avenue, approximately 600 feet southwest of the Rosecrans/Marquardt Avenue intersection. Construction activity near oil and gas operation facilities could result in emission of methane and hydrogen sulfide gases.

Polychlorinated Biphenyls

Overhead power lines were identified along both Rosecrans and Marquardt Avenues along with utility poles and transformers observed in the immediate surroundings.

Underground Storage Tanks

No LUST are located in the project area that could pose a threat on Project construction or operation. The identified UST in the project area would be avoided during construction. Therefore, the Project would not result in impacts related to USTs.

Other Hazardous Materials

Project construction would require the use of hazardous materials, such as concrete, paints, and sealants, and Project operation would also require the use of these materials for routine maintenance of the overpass. Additional hazardous materials may be identified during excavation for the proposed retaining walls and demolition of acquired properties. Therefore, no adverse impacts are anticipated.

3.12.4 Avoidance, Minimization, and/or Mitigation Measures

Phase II SI is recommended to determine the presence of ACMs, ADL, and LBP in the project area. The Project would be implemented in compliance with applicable federal, state, and local hazardous material/waste regulations, which would substantially minimize potential impacts. In addition, the following avoidance and minimization measures would be implemented as part of the Project.

H-1. Prior to removal or renovation of structures that potentially contain ACMs or LBPs, a comprehensive survey would be completed by a hazardous waste professional at each structure. These surveys would be performed to determine if abatement is required prior to construction activities. If necessary, hazard abatement protocol would be followed to avoid potential health risks to the public; therefore, the Project would not result in adverse impacts related to ACMs or LBP.

H-2. The removal of LBP must be managed following a standardized lead compliance plan (LCP) and work plan (WP) to address the health and safety of workers performing the task. Excavation of soils containing lead and/or removal of LBP or coatings may also require monitoring of the ambient air by a certified industrial hygienist (CIH).

H-3. Based on the potential for soil contamination from ADL, a Phase II environmental site investigation (SI) is required. The investigation would be conducted in both the Project and construction detour areas. Further sampling and testing of the suspect materials would be conducted prior to any construction activity.

H-4. Data from the soil investigation for ADL would be included in a WP. If adjacent soils test positive for levels of ADL, additional sampling investigations may be required to properly identify the vertical and lateral extents of ADL contamination. Additionally, excavation and removal of soils containing lead may require ambient air monitoring by a CIH. Through additional investigation

and any required remediation, ADL contamination would be characterized and remediated to avoid exposure of the public to hazardous levels of lead. Therefore, the Project would not result in adverse impacts related to ADL.

H-5. The DOGGR office would be contacted to determine if additional investigation or re-abandonment measures would be required in conjunction with construction near the project area.

H-6. Closure, relocation, or construction adjacent to an oil well requires permitting, investigation, and possible methane avoidance measures. Upon consultation with DOGGR, proper measures would be followed, and the potential emission of methane and hydrogen sulfide gases would be avoided. Therefore, the Project would not result in adverse impacts related to oil and gas operations.

H-7. Transformers would be tested for possible PCBs prior to relocation or disposal, and disposed of in accordance with applicable hazardous materials regulations if PCBs were identified. Therefore, the Project would not result in adverse impacts related to PCBs.

H-8. Any hazardous materials in the project area would be handled in compliance with standard regulations, which would require the proper containment of these materials to avoid hazardous spill or leaks.

The Project would include implementation of the avoidance and minimization measures identified above that would stop or reduce any potential impacts related to hazardous materials from occurring. Therefore, the Project would not result in adverse impacts from hazardous materials.

3.13 Air Quality

The following discussion incorporates the results of the Air Quality Study Report prepared for the Project (AMBIENT Air Quality & Noise Consulting, LLC, 2018).

3.13.1 Regulatory Setting

Federal air quality policies are regulated through the Federal Clean Air Act (FCAA). The FCAA required U.S. EPA to establish National Ambient Air Quality Standards (NAAQS), and set deadlines for their attainment. Attainment status is determined by whether the criteria pollutant concentration meets the state or national ambient standards set for the region of interest. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse impacts, such as visibility restrictions. The NAAQS and attainment designations are summarized in **Table 3-10.** Summary of Ambient Air Quality Standards and Attainment Designations.

Table 3-10. Summary of Ambient Air Quality Standards and Attainment Designations

Pollutant	Averaging Time	California Ambient Air Quality Standards		National Ambient Air Quality Standards	
		Concentration	Attainment Status	Primary	Attainment Status for South Coast Air Basin
Ozone (O_3)	1-hour	0.09 parts per million (ppm)	Non-Attainment	–	Non-Attainment[1]
	8-hour	0.070 ppm		0.070 ppm	
Particulate Matter (PM_{10})	AAM	20 µg/m^3	Non-Attainment	–	Attainment (Maintenance)
	24-hour	50 µg/m^3		150 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	Non-Attainment	12 µg/m^3	Non-Attainment (Serious)
	24-hour	No Standard		35 µg/m^3	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment	35 ppm	Attainment (Maintenance)
	8-hour	9 ppm		9 ppm	
	8-hour (Lake Tahoe)	6 ppm		–	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	0.053 ppm	Attainment/ Unclassified
	1-hour	0.18 ppm		0.100 ppb	
Sulfur Dioxide (SO_2)	AAM	–	Attainment	0.03 ppm	Attainment/ Unclassified[2]
	24-hour	0.04 ppm		0.14 ppm	
	3-hour	–		--	
	1-hour	0.25 ppm		75 ppb	
Lead	30-day Average	1.5 µg/m^3	Attainment	–	Nonattainment (Partial)[3]
	Calendar Quarter	–		1.5 µg/m^3	
	Rolling 3-Month Average	–		0.15 µg/m^3	
Sulfates	24-hour	25 µg/m^3	Attainment	No	

Pollutant	Averaging Time	California Ambient Air Quality Standards		National Ambient Air Quality Standards	
		Concentration	Attainment Status	Primary	Attainment Status for South Coast Air Basin
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	Unclassified	Federal Standards	
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m^3)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	Unclassified		

1. *Los Angeles County is designated Nonattainment-Extreme for the 1-hour standard and the 2008 8-hour standard. Attainment designation for the 2015 8-hour standard is pending.*
2. *Designation for the 1-hour standard is pending; expected to be Attainment/Unclassified.*
3. *Los Angeles County portion of the South Coast Basin only for near-source monitors. Expect to remain in attainment based on current monitoring data.*

Source: AMBIENT Air Quality & Noise Consulting, LLC, 2018

The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA has responsibility to review all state SIPs to determine conformance with the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

The CAA requires that Federal agencies do not adopt, accept, approve or fund activities that are not consistent with air quality goals. The transportation and general conformity regulations provide the framework for meeting this CAA requirement. Transportation conformity applies to Federal highway and

transit projects that receive Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding and approvals, while general conformity applies to all other Federal actions. The Project will not receive FHWA or FTA funding or approvals, and therefore transportation conformity does not apply. The Project is receiving funding through FRA; therefore, general conformity applies to the Project.

Localized Pollutant "Hot-spots"

"Hot-spot" analyses assess the air quality impacts on a scale smaller than an entire nonattainment or maintenance area, including, for example, congested intersections. In general, projects must not cause the "hot-spot"-related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or particulate matter violation is in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Within California, the *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol), University of California Davis, December 1997, is typically used for localized CO "hot-spot" analyses. The *CO Protocol* provides procedures and guidelines for use by agencies to evaluate the potential local level CO impacts of a transportation project. In accordance with the CO Protocol, a more detailed analysis of CO may be required for projects that would contribute to increased vehicle delay at signalized intersections projected to operate at unacceptable levels of service (i.e., LOS E or F).

General Conformity

The program by which a federal agency determines that an action would not obstruct or conflict with air quality attainment plans is called "general conformity." The implementing regulations for general conformity are found in Code of Federal Regulations, title 40, part 51, subpart W and part 93, subpart B. General conformity applies to Federal actions that do not include FHWA/FTA projects as defined in 40 CFR 93.101 and that take place in nonattainment or maintenance areas for all criteria pollutants. A conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a federal nonattainment or maintenance area would equal or exceed specified annual emission rates, referred to as *de minimis* levels. For ozone precursors (VOC/ROG and NO_X) and PM_{10}, the *de minimis* levels depend on the severity of the nonattainment classification; for other pollutants, the level is set at 100 tons per year.

General Conformity applies to FRA projects, including this one. Because FRA will be funding the proposed project, General Conformity would apply to the proposed project. However, because emissions resulting from the Project would be under *de minimis* thresholds, a conformity determination is not required.

As noted in **Table 3-10.** Summary of Ambient Air Quality Standards and Attainment Designations, the South Coast Air Basin (SCAB), where the project area is located, is designated extreme nonattainment for the federal O_3 standards and serious nonattainment for the federal $PM_{2.5}$ standard. The SCAB is designated maintenance for federal PM_{10} and CO standards. In addition, the Los Angeles County portion of the SCAB is designated nonattainment for the federal Lead standard. The relevant *de minimis* levels for the SCAB are also shown in **Table 3-11.** Federal General Conformity De Minimis Levels for Los Angeles County.

Table 3-11. Federal General Conformity De Minimis Levels for Los Angeles County

Pollutant	*De Minimis* Level
VOC	10
NO_X	10
CO	100
PM_{10}	100
$PM_{2.5}$	100

Source: AMBIENT Air Quality & Noise Consulting, LLC, 2018

SCAQMD Rules & Regulations

Construction of the Build Alternative would be required to comply with applicable SCAQMD rules and regulations including, but not limited to, *Rule 402, Nuisance*, and *Rule 403, Fugitive Dust*. Rule 402 requires that air pollutant emissions not be a nuisance off-site. Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the proposed project. In addition, the demolition of onsite structures would be required to comply with *SCAQMD Rule 1403, Asbestos Emissions from Demolition Activities* and the *National Emission Standard for Hazardous Air Pollutants* (40CFR61, Subpart M - asbestos NESHAP). The SCAQMD is delegated authority by the U.S. EPA to implement the Federal Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP), which requires the removal of identified asbestos-containing materials prior to demolition.

LACMTA Green Construction Policy

On August 4, 2011, the LACMTA adopted a Green Construction Policy (GCP). Through this GCP, the LACMTA commits to ensuring that all on-road and off-road equipment used in its construction activities are green and less-polluting. The GCP requires that all off-road diesel-powered construction equipment greater than 50 hp to meet, at a minimum, Tier-4 off-road emission standards and implement Best Available Control Technology (BACT) for the control of diesel-exhaust particulate matter. In addition, on-road heavy-duty diesel vehicles with a GVWR of 19,500 pounds or greater shall comply with EPA 2007 on-road emission standards for PM and NOx (Los Angeles County Metropolitan Transportation Authority, 2011).

3.13.2 Affected Environment

The study area for this impact analysis is considered the SCAB. The study area is described below.

Topography

The Project is in the SCAB, which is surrounded by mountains on three sides and the Pacific Ocean on the west. The mountains serve as a barrier, preventing the dispersion of pollutants. Prevailing wind patterns off the ocean carry pollutants eastward across the SCAB, enabling chemical reactions as new emissions

are added to existing pollutant concentrations. Intense sunlight provides the light necessary to allow production of O_3.

Regional Metrology and Climate

Average wind speeds in the SCAB are light and primarily from the west. Mild sea breezes slowly carry pollutants inland. An inversion layer, which is a layer of warm air that lies over cooler, ocean air, often acts as a lid, preventing air pollutants from escaping upward. In the summer, these temperature inversions are stronger than in winter, preventing O_3 and other pollutants from escaping upward and dispersing. In the winter, a ground-level or surface inversion commonly forms during the night. Annual average temperature varies little throughout the SCAB averaging approximately 62 degrees Fahrenheit (°F). Based on historical data for the Los Angeles area, average temperatures range from a January low of approximately 49 °F to an August high of approximately 84 °F.

Emissions Inventory and Trends

Emissions inventory and trends for the SCAB are summarized in **Table 3-12.** SCAB Emissions Inventory and Projections**.** Overall, since 2000, the emission levels for the O_3 precursors, NO_x and VOCs, have been decreasing in the SCAB and are projected to continue decreasing through 2035. The decreases are predominantly due to motor vehicle controls and reductions in evaporative emissions. In the SCAB, on-road motor vehicles are the largest contributors to NO_x, and VOC emissions. Other mobile sources are also major contributors to NO_x emissions. In addition, the emission levels for SO_x have decreased since 2000. This is mainly due to the switch from fuel oil to natural gas for electric generation and to reduced sulfur content in fuels.

Table 3-12. SCAB Emissions Inventory and Projections

Pollutant	Emissions (tons/day, annual average)							
	2000	2005	2010	2015	2020	2025	2030	2035
VOC	956	678	544	429	400	393	393	391
NO_X	1106	888	603	451	357	289	266	257
SO_X	53	50	19	18	17	17	18	20
$PM_{2.5}$	88	84	71	67	67	68	70	71
PM_{10}	179	175	160	155	161	165	170	172

Source: AMBIENT Air Quality & Noise Consulting, LLC, 2017a

Air Quality Monitoring Data

Air pollutant concentrations are measured at several monitoring stations in the SCAB. The nearest representative ambient air quality monitoring station to the project area is the Pico Rivera-4144 San Gabriel monitoring station (which measures O_3, PM_{10}, CO, $PM_{2.5}$, and NO_2). The nearest monitoring station providing ambient PM_{10} measurement data is the Anaheim-Pampas Lane Monitoring Station. Ambient air quality monitoring data for these stations were obtained for the last five years of available measurement data (i.e., 2011 through 2015) and are summarized in **Table 3-13.** Summary of Ambient Air Quality Monitoring Data. As depicted, state and federal O_3 standards were exceeded on numerous occasions during the past five years. The state and federal standards for suspended particulates (i.e., PM_{10} and $PM_{2.5}$) have also been exceeded on various occasions during the past five years.

Attainment Status

Under the California Clean Air Act (CCAA), the California Air Resources Board (CARB) is required to designate areas of the state as "attainment", "nonattainment", or "unclassified" with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for O_3, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The U.S. EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, U.S. EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

Table 3-13. Summary of Ambient Air Quality Monitoring Data

Summary of Ambient Air Quality Monitoring Data[1,2]	2011	2012	2013	2014	2015
Ozone (O_3)					
Maximum concentration (1-hour/8-hour average)	0.096/0.074	0.106/0.075	0.101/0.072	0.121/0.092	0.107 /0.081
Number of days state/national 1-hour standard exceeded	1/0	5/0	2/0	7/0	6/0
Number of days state/national 8-hour standard exceeded	1/0	6/0	3/0	7/5	11/2
Carbon Monoxide (CO)					
Maximum concentration (1-hour/8-hour average) [4]	2.7/2.37	2.7/2.16	3.6/2.0	3.9/2.5	2.8/1.7
Number of days state 1-hour/8-hour standard exceeded	0/0	0/0	0/0	0/0	0/0
Number of days national 1-hour/8-hour standard exceeded	0/0	0/0	0/0	0/0	0/0
Nitrogen Dioxide (NO_2)					
Maximum concentration (1-hour average)	90.6	80.8	104.6	86.7	70.4
Annual average	NA	NA	NA	19	NA
Number of days state/national standard exceeded	0/0	0/0	0/1	0/0	0/0
Respirable Particulate Matter (PM_{10})					
Maximum concentration (state/national)	53.0	48.0	77.0	85.0	59.0
Number of days state standard exceeded (measured/calculated [3]	2/12.2	0/0	1/5.7	2/12.0	2/12.1
Number of days national standard exceeded (measured/calculated [3]	0/0	0/0	0/0	0/0	0/0
Fine Particulate Matter ($PM_{2.5}$)					
Maximum 24-hr. concentration (state/national)	41.2	45.3	29.1	35.1	52.7
Annual Average (state/national)	12.5/12.4	11.9/11.8	11.8/11.7	NA/12.0	11.5/11.5

Summary of Ambient Air Quality Monitoring Data[1,2]	2011	2012	2013	2014	2015
Number of days national standard exceeded (measured/calculated [3]	1/3.3	1/3.1	0/0	0/0	0/0

ppm = parts per million by volume; µg/m3 = micrograms per cubic meter; NA = Insufficient or no data available to determine value

1. *Based on ambient air quality monitoring data obtained from the Pico Rivera-4144 San Gabriel Monitoring Station. PM_{10} data obtained from the Anaheim-Pampas Lane Monitoring Station.*
2. *Reported state and national monitoring values and statistics may differ for various reasons, including the monitor used, monitor location, and ambient/site conditions. Where variations in reported concentration values were noted, the higher value was identified in this table.*
3. *Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every six days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.*
4. *One-hour CO concentrations obtained from the U.S. EPA.*

Source: AMBIENT Air Quality & Noise Consulting, LLC, 2017a

The state and national attainment status designations pertaining to the SCAB are summarized in **Table 3-10.** Summary of Ambient Air Quality Standards and Attainment Designations. The SCAB is currently designated as a nonattainment area with respect to the state and federal O_3 and $PM_{2.5}$ standards and the state PM_{10} standards. The SCAB is also designated maintenance for the federal CO and PM_{10} standards. In addition, based on monitoring data obtained near a lead acid battery reclamation facility, Los Angeles County is currently designated nonattainment for the federal lead standards. With the exception of Los Angeles County, the remainder of the SCAB is designated attainment for the lead standards. The SCAB is designated attainment or unclassified for the remaining State and Federal standards.

Sensitive Receptors

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health impacts of air pollution, termed "sensitive receptors." The term “sensitive receptors” refers to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the impacts of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, convalescent homes, and hospitals are examples of sensitive land uses.

Existing land uses in the project area consist of a mix of industrial/manufacturing land uses, as shown in

Figure 3-2 (see Section 3.2). No sensitive receptors have been identified in the project area. The nearest sensitive land uses consist of residential dwellings approximately 400 feet north of Rosecrans Avenue, east of Marquardt Avenue. No undeveloped lands currently permitted for future development have been identified in the project area.

3.13.3 Environmental Consequences

Alternative 1: No Build Alternative

Implementation of the No Build Alternative would not require construction or result in changes to existing conditions; therefore, no impacts are anticipated.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

Criteria Air Pollutants

Project construction is anticipated to begin in 2020 and last approximately 24 months. Construction activities associated with the Project would result in emissions of fugitive dust associated with material handling activities, ground disturbance, and vehicle travel on unpaved surfaces. Off-road construction equipment and on-road vehicle trips would also result in short-term emissions of criteria air pollutants. Construction-generated emissions would vary depending on the activities conducted.

Annual construction-generated emissions are summarized in **Table 3-14.** Annual Construction Emissions of Criteria Air Pollutants. As depicted, the highest annual construction-generated emissions would total approximately 0.5 tons per year (tons/year) of VOC, 9.5 tons/year of NO_X, 9.5 tons/year of CO, 0.6 tons/year of PM_{10}, and 0.4 tons/year of $PM_{2.5}$. Construction-generated emissions would not exceed the General Conformity *de minimis* levels. As a result, a Federal General Conformity determination is not required for construction-related activities.

Long-term operational emissions of criteria air pollutants associated with the Project would be associated with the operation of motor vehicles. Based on information obtained from the traffic analysis prepared for this Project, implementation of the Project would not result in a change in average vehicle speeds or traffic volumes within the project area. However, implementation of the Project would result in slight changes in peak-hour vehicle delay at nearby roadway intersections, as well as, changes in vehicle distribution. Estimated changes in operational emissions are summarized below in **Table 3-15.** Operational Emissions of Criteria Air Pollutants

Table 3-15. Operational Emissions of Criteria Air Pollutants.

In comparison to existing conditions, future year 2040 emissions are projected to decline, due largely to projected future improvements in vehicle emission standards and fleet turnover. The Project, in comparison to no-build conditions, would result in slight increases in on-road motor vehicle emissions. In comparison to no- build conditions, the Project would result in overall increases of approximately 0.1 tons/year of VOC, 0.2 tons/year of NO_X, and 0.8 tons/year of CO. Increases in PM_{10} and $PM_{2.5}$ attributable to the Project would be negligible. Annual increases of operational criteria air pollutants would not exceed

Federal General Conformity *de minimis* levels. As a result, a Federal General Conformity determination is not required.

Table 3-14. Annual Construction Emissions of Criteria Air Pollutants

Construction Year	Emissions (tons/year)[1,2]				
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$
Year 1	0.5	9.5	8.6	0.6	0.4
Federal General Conformity *De Minimis* Levels:	10	10	100	100	100
Exceeds Federal General Conformity *De Minimis* Levels?	No	No	No	No	No
Year 2	0.5	8.1	9.5	0.6	0.4
Federal General Conformity *De Minimis* Levels:	10	10	100	100	100
Exceeds Federal General Conformity *De Minimis* Levels?	No	No	No	No	No

1. *Includes compliance with SCAQMD Rule 403 for the control of construction-generated fugitive dust and LACMTA GCP. Includes the use of heavy-duty, off-road construction equipment meeting, at a minimum, Tier 3 emission standards. SOX emissions are negligible.*
2. *Emissions were calculated using the CalEEMod computer program, version 2016.3.1. Includes demolition of approximately 134,200 sf of building area, 115,600 cy of fill imported, and approximately 6,400 cy of material exported.*

Source: AMBIENT Air Quality & Noise Consulting, LLC, 2017a

Table 3-15. Operational Emissions of Criteria Air Pollutants

Year	Emissions (tons/year)[1]				
	VOC	NO_X	PM_{10}	$PM_{2.5}$	CO
Existing Conditions					
Project Area On-Road Motor Vehicle Idling	0.3	1.2	0.0	0.0	3.3
Project Area On-Road VMT	1.0	8.9	0.1	0.1	29.8
Total	1.3	10.1	0.1	0.1	33.1
Future Year 2040 – No Build Alternative					
Project Area On-Road Motor Vehicle Idling	0.2	0.9	0.0	0.0	2.0
Project Area On-Road VMT	0.4	1.5	0.0	0.0	11.0
Total	0.6	2.4	0.0	0.0	13.0
Future Year 2040 –Build Alternative					

Year	Emissions (tons/year)[1]				
	VOC	NO_X	PM_{10}	$PM_{2.5}$	CO
Project Area On-Road Motor Vehicle Idling	0.3	1.0	0.0	0.0	2.4
Project Area On-Road VMT	0.4	1.6	0.0	0.0	11.4
Total	0.7	2.6	0.0	0.0	13.8
Change in Emissions Compared to Existing Conditions	-0.6	-7.5	-0.1	-0.1	-19.3
Change in Emissions Compared to No Build Alternative	0.1	0.2	0.0	0.0	0.8
Federal General Conformity *De Minimis* Levels:	10	10	100	100	100
Exceeds Federal General Conformity *De Minimis* Levels?	No	No	No	No	No

3. *Emissions of SO_X, Lead, and PM are negligible. Totals may not sum due to rounding.*
4. *Vehicle idle emissions were calculated based on changes in vehicle-idle hours derived from the traffic analysis prepared for this Project.*
5. *Vehicle miles traveled (VMT) emissions was calculated based on changes in vehicle travel distances associated with the proposed Project and vehicle trip distribution information derived from the traffic analysis prepared for this Project.*

Source: AMBIENT Air Quality & Noise Consulting, LLC, 2017a

Localized Carbon Monoxide Concentrations

The Project would eliminate vehicle idling at the existing Rosecrans/Marquardt Avenue at-grade railroad crossing and is anticipated to result in decreased delay for vehicles traveling on Rosecrans Avenue. Based on traffic analysis conducted, the Project would not result in a reduction in average vehicle speeds along area roadways.

Under existing year 2015 conditions, all intersections, except for Carmenita Road/Alondra Boulevard, are projected to operate at level of service (LOS) D, or better. Intersections with the lowest performance are where the major highway corridors intersect. Carmenita Road/Alondra Boulevard is primarily affected by inbound and outbound vehicle traffic from the I-5 freeway.

Under future year 2040 conditions, the Build Alternative would result in a worsening of LOS and vehicle delay (compared to existing year 2015 conditions) at the following signalized intersections:

- Carmenita Road/Rosecrans Avenue (from Peak AM/PM LOS D/D to LOS E/E);
- Carmenita Road/Alondra Boulevard (from Peak AM/PM LOS E/D to LOS F/E);
- Valley View Avenue/Alondra Boulevard (from Peak AM/PM LOS D/D to LOS E/E);
- Valley View Avenue/Rosecrans Avenue (from Peak AM/PM LOS C/D to LOS D/E); and
- Valley View Avenue/Foster Road (from Peak AM/PM LOS C/B to LOS D/B).

All other signalized intersections would either operate at LOS D, or better, or would not experience decreased vehicle delay with implementation of the Project (see Section 3.8.3).

The *CO Protocol* provides procedures and guidelines for use by California agencies to evaluate the potential local level CO impacts of a highway project. In accordance with the CO Protocol, a more detailed analysis of CO may be required for projects that would contribute to increased vehicle delay at signalized intersections projected to operate at unacceptable levels of service (i.e., LOS E or F). Localized mobile-source CO concentrations were, therefore, evaluated for the above noted intersections.

The results of the CO modeling analysis are summarized in **Table 3-16.** Predicted Mobile-Source CO Concentrations at Primarily Affected Intersections. As depicted, the highest predicted 1-hour and 8-hour CO concentrations at the intersections evaluated would be approximately 5.3 parts per million (ppm) and 3.6 ppm, respectively. Predicted 1-hour and 8-hour CO concentrations would not exceed applicable NAAQS for CO, nor the more stringent CAAQS.

Table 3-16. Predicted Mobile-Source CO Concentrations at Primarily Affected Intersections

Intersection	CO Concentration (ppm)			
	AM Peak Hour		PM Peak Hour	
	1-Hour	8-Hour	1-Hour	8-Hour
Year 2020 with Build Alternative[1]				
1. Carmenita Road and Rosecrans Avenue	5.2	3.5	5.2	3.5
2. Carmenita Road and Alondra Boulevard	5.0	3.3	4.9	3.2
3. Valley View Avenue and Alondra Boulevard	5.3	3.6	5.2	3.5
4. Valley View Avenue and Rosecrans Avenue	5.2	3.5	5.1	3.4
5. Valley View Avenue and Foster Road	5.0	3.2	5.0	3.2
Year 2040 with Build Alternative[2]				
1. Carmenita Road and Rosecrans Avenue	4.3	2.8	4.3	2.8
2. Carmenita Road and Alondra Boulevard	4.3	2.7	4.2	2.7
3. Valley View Avenue and Alondra Boulevard	4.4	2.9	4.3	2.8
4. Valley View Avenue and Rosecrans Avenue	4.3	2.8	4.3	2.8
5. Valley View Avenue and Foster Road	4.3	2.7	4.3	2.7
California Ambient Air Quality Standards:	9	20	9	20

Intersection	CO Concentration (ppm)			
	AM Peak Hour		PM Peak Hour	
	1-Hour	8-Hour	1-Hour	8-Hour
National Ambient Air Quality Standards:	9	35	9	35
Exceeds Ambient Air Quality Standards?	No	No	No	No

6. *Intersection LOS and traffic data were not calculated for opening year 2020 conditions with implementation of the build alternative. To ensure a conservative analysis, traffic volumes for primarily affected roadway intersections were based on the higher year 2040 traffic conditions with implementation of the build alternative. Emission factors were based on year 2020 conditions derived from the CTEMFAC computer program, version 6.0.*
7. *Based on year 2040 conditions with implementation of the build alternative. Emission factors were based on year 2040 conditions derived from the CTEMFAC computer program, version 6.0.*

*Source: AMBIENT Air Quality & Noise Consulting, LLC, 2017a*Asbestos

The project area is not in a location identified as containing or likely to contain serpentine and ultramafic rock. Therefore, the discovery of naturally occurring asbestos during construction would be unlikely.

Asbestos can also be found in various building products, including (but not limited to) utility pipes/pipelines (transit pipes or insulation on pipes). Of particular concern are older structures constructed prior to 1970. Based on a preliminary search of the project area, one parcel has been identified as having structures that were potentially constructed prior to 1970, which is located at 13900 Rosecrans Avenue (Assessor's Parcel Number 8069-005-002). If activities would involve the disturbance or potential disturbance of ACM, various regulatory requirements may apply, including the requirements stipulated in SCAQMD Rule 1403, Asbestos Emissions from Demolition Activities and the National Emission Standard for Hazardous Air Pollutants (40 CFR 61, Subpart M - asbestos NESHAP). These requirements include notification, inspection, work practice requirements to limit asbestos emissions associated with building demolition and renovation activities.

Odors

Minor sources of odors would be present during construction, approximately 24-month period beginning in 2020. The predominant source of power for construction equipment is diesel engines. Exhaust odors from diesel engines, as well as emissions associated with asphalt paving, may be considered offensive to some individuals. However, because odors would be temporary and would disperse rapidly with distance from the source, construction-generated odors would not be anticipated to result in the frequent exposure of receptors to objectionable odorous emissions.

Mobile-Source Air Toxics

The following discussion is based on the *FHWA Memorandum, Subject: INFORMATION: Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*, dated October 18, 2016. The purpose

of the guidance is to advise when and how to analyze MSATs in the NEPA process for highways. This guidance is interim, given that MSAT science is still evolving. As the science progresses, FHWA will update the guidance.

Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments of 1990, whereby Congress mandated that the U.S. EPA regulate 188 air toxics, also known as HAPs. The U.S. EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS). In addition, the U.S. EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA). These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority MSATs, the list is subject to change and may be adjusted in consideration of future U.S. EPA rules.

The 2007 U.S. EPA rule discussed above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. Based on an FHWA analysis using the U.S. EPA's MOVES2014a model, as shown in **Figure 3-10**, even if VMT increases by 45 percent as assumed from 2010 to 2050, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Diesel PM is the dominant component of MSAT emissions, making up 50 to 70 percent of all priority MSAT pollutants by mass, depending on calendar year. Users of MOVES2014a will notice some differences in emissions compared with MOVES2010b. MOVES2014a is based on updated data on some emissions and pollutant processes compared to MOVES2010b, and also reflects the latest Federal emissions standards in place at the time of its release. In addition, MOVES2014a emissions forecasts are based on lower VMT projections than MOVES2010b, consistent with recent trends suggesting reduced nationwide VMT growth compared to historical trends.

Mobile Source Air Toxics Research

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of MSATs, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

Nonetheless, MSAT concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, we are duly expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, U.S. EPA, the Health Effects Institute (HEI), and others have

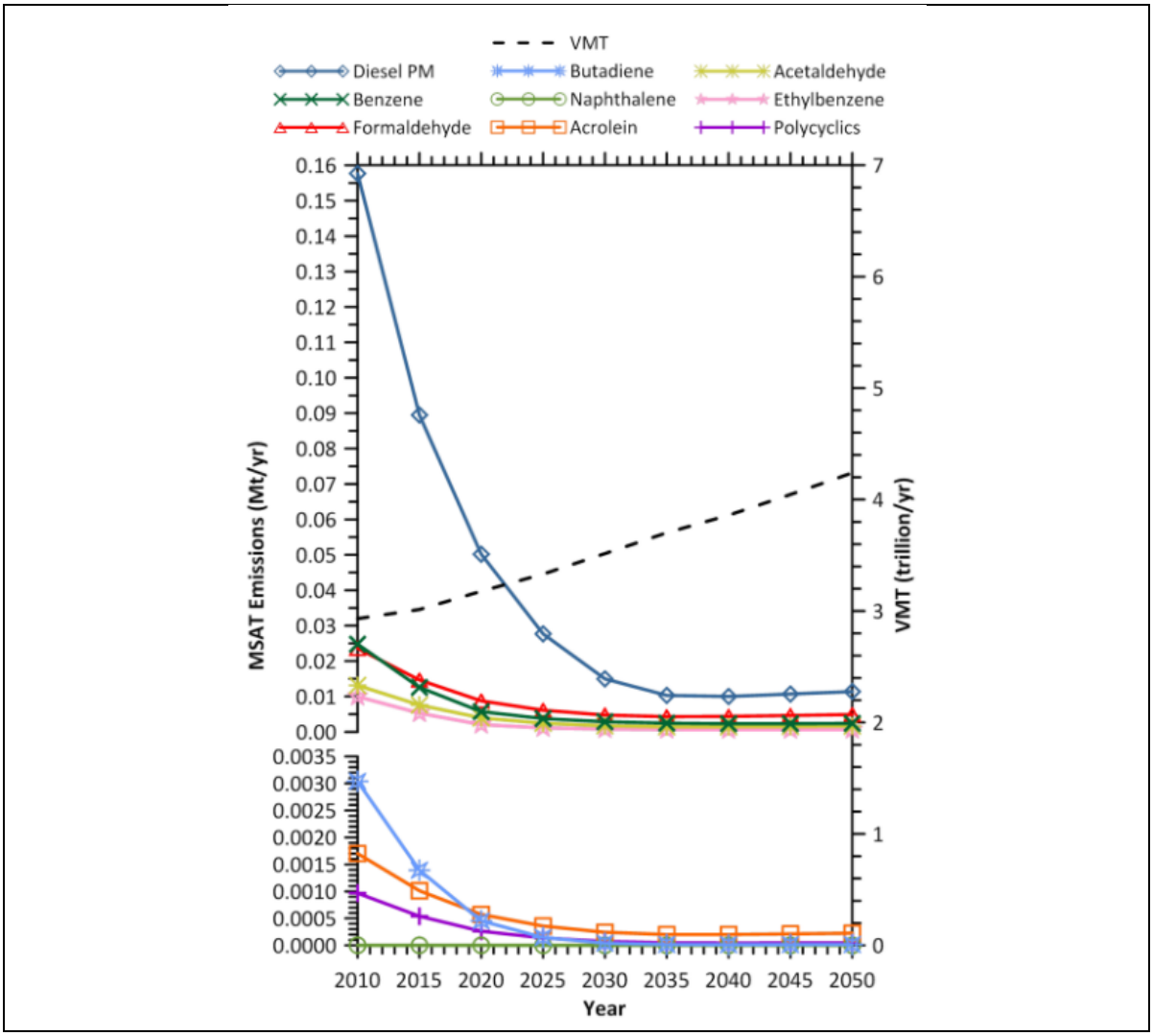
funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field.

Incomplete or Unavailable Information for Project-Specific Mobile Source Air Toxics Health Impacts Analysis

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of MSATs, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the FCAA and its amendments and have specific statutory obligations with respect to HAPs and MSATs. The U.S. EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects." Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Figure 3-10. National Mobile Source Air Toxics Emission Trends 2010-2050 or Vehicles Operating on Roadways Using U.S. EPA's Moves2014a Model



Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle mix, speeds, fuels, emission control programs, meteorology, and other factors
Source: FHWA, 2016

Other organizations are also active in the research and analyses of the human health effects of MSATs, including the HEI. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious are the adverse human health effects of MSAT compounds at current environmental concentrations or in the future as vehicle emissions substantially decrease. The FHWA, U.S. EPA, the HEI, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI. As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The U.S. EPA and the HEI have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the U.S. EPA as provided by the FCAA to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires the U.S. EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than one in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than one in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the United States Court of Appeals for the District of Columbia Circuit upheld U.S. EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers who would need to weigh this information against Project benefits, such as reducing

traffic congestion, accident rates, and fatalities, plus improved access for emergency response, which are better suited for quantitative analysis.

Analysis of Mobile Source Air Toxics in NEPA Documents

The *FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents* (October 18, 2016) provides guidance on how MSATs should be addressed. FHWA has developed a tier approach for analyzing MSATs in NEPA documents. Depending on the specific Project circumstances, FHWA has identified three categories of analysis:

1) No analysis for projects with no potential for meaningful MSAT effects. This category is limited to projects that:
   - Qualify as a categorical exclusion under 23 CFR 771.117;
   - Are exempt under the FCAA conformity rule under 40 CFR 93.126; or
   - Have no meaningful impacts on traffic volumes or vehicle mix.
2) Qualitative analysis for projects with low potential MSAT effects. The types of projects included in this category are those that serve to improve operations of highway, transit, or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions. Examples of these types of projects are minor widening projects; new interchanges, replacing a signalized intersection on a surface street; or projects where design year traffic is projected to be less than 140,000 to 150,000 annual average daily traffic (AADT). Projects that do not meet Category (1) or (3) criteria should be included in this category.
3) Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects. For a Project to be of the magnitude to have a higher potential for MSAT effects, a Project must:
   - Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel PM in a single location; or
   - Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000, or greater, by the design year; and also;
   - Proposed to be located in proximity to populated areas.

The preferred Build Alternatives are not projected to result in changes in traffic volumes or meaningful changes in vehicle speeds along roadway segments within the study area. The project would not affect vehicle mix or VMT relative to the No-Build Alternative. Furthermore, it is important to note that the estimated AADT in the project area ranges from approximately 5,025 along Marquardt Avenue to 24,922 along Rosecrans Avenue. Estimated AADT volumes along these roadways would be substantially lower than the FHWA criterion value of 140,000 AADT, which is identified as the minimum volume for higher potential MSAT effects. Based on this information, the project would be identified as a Category (2) project, that is, the project would have a low potential for MSAT effects. As a result, it is expected that the preferred Build Alternatives would not result in an appreciable difference in overall MSAT emissions

when compared to the No-Build Alternative. In addition, it is important to note that emissions will likely be lower than present levels in the design year as a result of U.S. EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2050. As noted earlier, local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the U.S. EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The preferred Build Alternatives will have the effect of moving some traffic closer to some nearby land uses; therefore, there may be localized areas where ambient concentrations of MSAT could be higher than the No-Build Alternative. However, the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In addition, no sensitive land uses have been identified in the project area. In sum, when a roadway is widened, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No-Build Alternative, but this could be offset due to overall increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Furthermore, traffic volumes along Rosecrans would not have a substantial number of diesel trucks (i.e., 10,000 ADT, or greater). Based on traffic counts conducted in the project area, heavy-duty truck volumes are estimated to constitute roughly two percent of the total daily volumes, which would equate to roughly 500 trucks/day, or less, along Rosecrans Avenue. In addition, MSAT may be lower in other locations when traffic shifts away from nearby land uses. However, on a regional basis, the U.S. EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today. It is also important to note that the Build Alternative would not affect train operations along the BNSF railway.

Federal General Conformity

Construction of the Project would be completed over an approximately 24-month period. Because construction of the Project is expected to last less than five years, construction-related emissions are considered short-term.

As previously discussed and summarized in **Table 3-14.** Annual Construction Emissions of Criteria Air Pollutants, total direct and indirect annual emissions during construction would not exceed the General Conformity *de minimis* levels. In addition, the Project would comply with all applicable rules and regulations for the control of construction-generated emissions, including those adopted by the CARB and the SCAQMD. In addition, the project would also be subject to LACMTA's *Green Construction Policy*. As previously discussed, LACMTA's *Green Construction Policy* includes policies requiring the use of newer, less polluting off-road equipment and on-road vehicles. Consistency with applicable rules and regulations, and compliance with LACMTA's *Green Construction Policy* would ensure consistency with the SIP. Furthermore, as shown in

Table 3-15. Operational Emissions of Criteria Air Pollutants, total annual increases of operational criteria air pollutants would not exceed Federal General Conformity *de minimis* levels. As a result, a General Conformity determination is not required under the Federal General Conformity determination regulations.

3.13.4 Avoidance, Minimization, and/or Mitigation Measures

The Project would comply with the SCAQMD Rules and Regulations and the LACMTA Green Construction Policy, and annual construction emissions would fall below the general conformity thresholds. SCAQMD regulations and LACMATA policies will be incorporated into construction plans and contractor specifications of the construction contracts for the Project to ensure compliance. The Project would not result in impacts on air quality during operation. Therefore, no avoidance, minimization, or mitigation would be required for the Project.

3.14 Noise and Groundborne Vibrations

The following discussion incorporates the results of the Noise Study Report prepared for the Project (AMBIENT Air Quality & Noise Consulting, LLC, 2017b).

3.14.1 Regulatory Setting

Federal Railroad Administration

FRA has developed guidance for the assessment of noise and vibration impacts associated with high-speed rail. The FRA high-speed ground transportation noise and vibration impact assessment guidance is for use in planning high-speed passenger train projects. The guidance includes criteria and procedures for use in analyzing the potential noise and vibration impacts of various types of high-speed fixed guideway transportation systems.

The FRA has published guidance for the evaluation of high-speed rail projects, entitled "High-Speed Ground Transportation Noise and Vibration Impact Assessment." This guidance document identifies criteria and procedures for use in analyzing the potential noise and vibration impacts of various types of high-speed transportation systems. The FRA has not developed guidance for the assessment of noise or vibration impacts associated with conventional rail projects. For the assessment of conventional rail noise and vibration impacts the FRA recommends use of the impact assessment guidance issued by the FTA. The FTA transit noise and vibration impact assessment guidance, is relied on by FRA for the assessment of freight and conventional passenger rail lines, stationary rail facilities, and for horn noise assessment. The FTA noise and vibration criteria are largely consistent with the criteria identified in the FRA guidance manual for high-speed rail projects.

Federal Transit Administration

Noise

The FTA's guidance manual, *Transit Noise and Vibration Impact Assessment* (May 2006), provides guidance for the analysis of noise and vibration associated with transit-related projects. A project's increase in cumulative noise exposure is assessed based on land use categories, as well as the sensitivity of receptors to transit noise. This guidance is recommended by the FRA for the evaluation of conventional railroad noise and vibration impacts.

Receiving land uses are characterized based on noise sensitivity. The FTA's noise criteria for new transit sources are based on average-hourly equivalent (L_{eq}) and average day-night (L_{dn}) noise metrics, depending on the sensitivity of the receiving land use. For Category 1 (e.g., amphitheaters, historic landmarks) and Category 3 (e.g., places of worship, schools, museums, and libraries) land uses the L_{eq} noise metric is used to evaluate noise levels during the facility's highest noise-generating period that occurs during hours of noise sensitivity. The average day-night noise metric is used to characterize noise exposure for Category 2 (e.g., residences, hospitals, and hotels) land uses. The L_{dn} descriptor describes a receptor's cumulative noise exposure from all events over a full 24 hours, with events between 10:00 p.m. and 7:00 a.m. increased by 10 decibels to account for greater nighttime sensitivity to noise. The FTA's land use categories for noise-sensitive land uses and associated noise metrics to be applied are summarized in **Table 3-17.** FTA Land Use Categories and Noise Metrics.

Table 3-17. FTA Land Use Categories and Noise Metrics

Land use Category	Exterior Noise Metric	Description of Land Use Category
1	$L_{eq}^{(h)}$	Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	L_{dn}	Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

Land use Category	Exterior Noise Metric	Description of Land Use Category
3	$L_{eq}^{(h)}$	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.
Leq for the noisiest hour of transit-related activity during hours of noise sensitivity. *Leq=average-hourly equivalent noise level* *Ldn=average day-night noise level*		

Source: FTA, 2006

The FTA's noise impact criteria are based on a comparison of existing exterior noise levels and projected future noise levels that would occur with Project implementation. Transit noise impacts are categorized as having "no impact," a "moderate impact," or a "severe impact (see **Figure 3-11.** Noise Exposure Criteria for Category 1 and 2 Land Uses). The "moderate impact" threshold defines areas where the increase in noise is noticeable, but may not be sufficient to cause a strong, adverse community reaction. The "severe impact" threshold defines the noise limits above which increases in existing noise levels would result in a significant percentage of population being be highly annoyed by new noise.

The proposed Project's allowable contribution to the existing noise level is determined based on the overall resultant increase in cumulative noise exposure. Allowable project-generated noise levels and resultant increases in cumulative noise exposure levels decreases as the ambient noise level increases. The rationale for the FTA-recommended criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause substantial increases in annoyance.

FTA's noise impact criteria for evaluation of a project's increase in cumulative noise exposure are identified in **Figure 3-12.** Allowable Increase in Cumulative Noise Exposure for Category 1 and 2 Land Uses. The FTA's criteria for evaluation of cumulative noise exposure are defined by two curves. Below the lower curve, a proposed project is considered to have no noise impact. Project noise above the upper curve is considered to cause severe impact. Increases in noise levels that fall between the two curves would be considered to have a potentially moderate impact, which may be noticeable to most people but may not

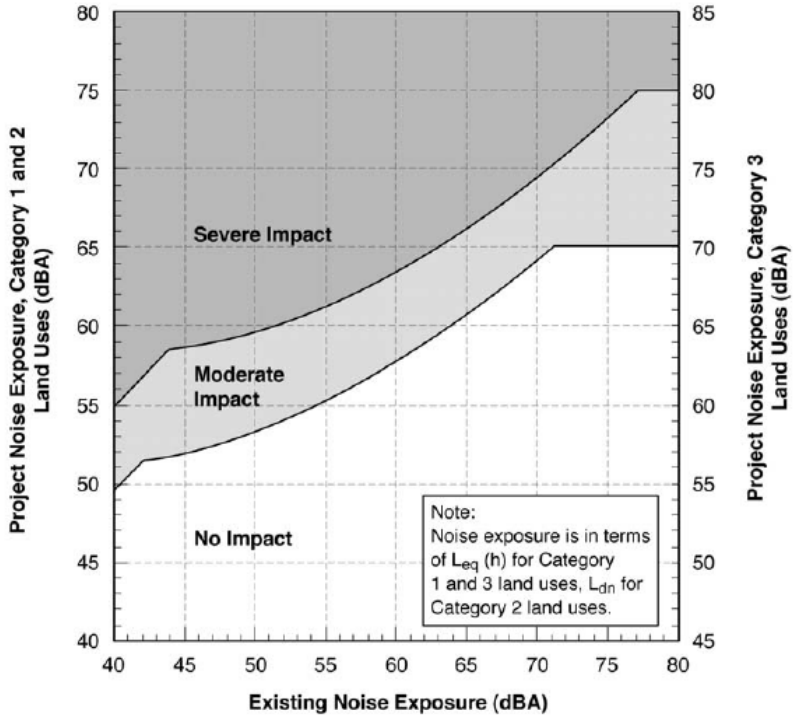
be sufficient to cause adverse reactions from the community. As previously noted, the FTA transit noise impact assessment guidance is relied on by FRA for the assessment of railroad noise levels, including changes in train horn noise.

The FTA manual also provides guidance for the general assessment of construction noise. To the extent applicable, the guidance recommends the use of local ordinance criteria. In instances where local construction noise criteria are unavailable, the FTA's guidelines identify criteria that can be considered reasonable for the general assessment of construction-noise impacts.

Based on these general assessment criteria, daytime average-hourly noise levels associated with off-road equipment operations exceeding 90 dBA L_{eq} at residential land uses and 100 dBA L_{eq} at commercial and industrial land uses would be considered to have a potential for increased levels of annoyance and adverse community reaction. For residential uses, this average-hourly noise standard is reduced to 80 dBA L_{eq} during the more noise-sensitive nighttime hours.

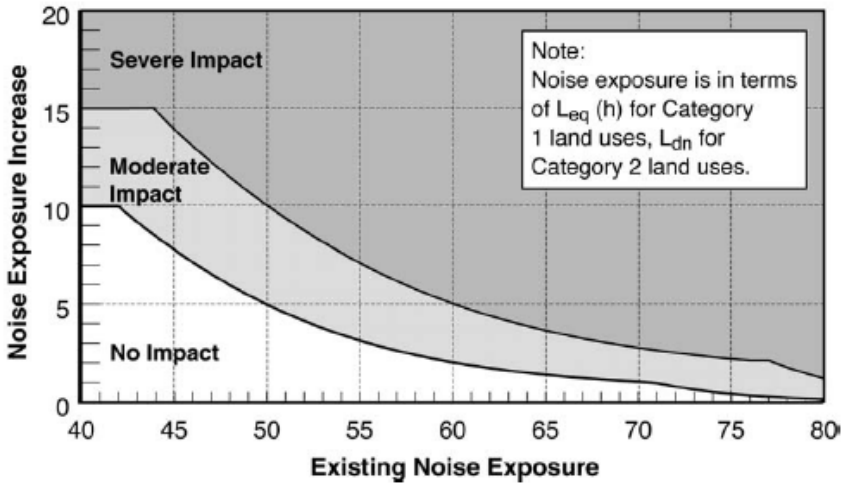
Screening level criteria are intended to reflect the highest construction-generated noise levels anticipated to occur during a 1-hour period. For construction activities that would result in varying activities and associated noise levels, the 8-hour average noise criteria can also be applied. The 30-day average noise criteria can also be used for the assessment of noise associated with long-term construction projects. The FTA's recommended noise criteria for construction activities are summarized in **Table 3-18.** FTA Construction Noise Assessment Criteria.

Figure 3-11. Noise Exposure Criteria for Category 1 and 2 Land Uses



Source: AMBIENT Air Quality & Noise Consulting, LLC, 2017b

Figure 3-12. Allowable Increase in Cumulative Noise Exposure for Category 1 and 2 Land Uses



Source: AMBIENT Air Quality & Noise Consulting, LLC, 2017b

Table 3-18. FTA Construction Noise Assessment Criteria

Land Use	Noise Level (dBA)				
	1-Hour Average (L_{eq})		8-Hour Average (L_{eq})		30-Day Average
	Day	Night	Day	Night	Avg.
Residential	90	80	80	70	75 [a]
Commercial	100	100	85	85	80 [b]
Industrial	100	100	90	90	85 [b]

a. In urban areas with very high ambient noise levels (L_{dn} > 65 dB), L_{dn} from construction operations should not exceed existing ambient plus 10 dB.

b. Based on a 24-hour L_{eq}.

Source: AMBIENT Air Quality & Noise Consulting, LLC, 2017b

Groundborne Vibration

The FTA's criteria for acceptable ground-borne vibration are based on the ground velocity levels expressed in root mean square (rms) vertical vibration velocity level at the ground surface. The criteria are categorized based on the frequency of the vibration event and the sensitivity of the receiving land use. These criteria are specified for the three land-use categories. Category 1 land uses include buildings where vibration would interfere with operations within the building, such as uses with vibration-sensitive equipment. Category 2 land uses include residences and buildings where people normally sleep. Category 3 land uses include institutional land uses with primarily daytime hours of use, such as office buildings. It is important to note that the FTA's assessment criteria noted in **Table 3-19.** Groundborne Vibration Impact Criteria for General Assessment (VdB) may not apply to some land uses, such as recording studios and concert halls, which can be particularly sensitive to vibration.

Table 3-19. Groundborne Vibration Impact Criteria for General Assessment (VdB)

Land Use Category	Frequent Events$_1$	Occasional Events$_2$	Infrequent Events$_3$
Category 1: Buildings where vibration would interfere with interior operations.$_4$	65	65	65
Category 2: Residences and buildings where people normally sleep.	72	75	80
Category 3: Institutional land uses with primarily daytime use.	75	78	83

Land Use Category	Frequent Events$_1$	Occasional Events$_2$	Infrequent Events$_3$
VdB = Root mean square vertical vibration velocity in decibels (re 1 micro-inch/second) *1."Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.* *2. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.* *3."Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.* *4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.* *5.Vibration-sensitive equipment is generally not sensitive to ground-borne noise.*			

Source: FTA 2006

For the evaluation of potential increases in annoyance associated with construction-related activities, the criteria identified in **Table 3-19.** Groundborne Vibration Impact Criteria for General Assessment (VdB) can also be applied. The FTA's recommended criteria for the evaluation of potential structural damage associated with construction activities are summarized in **Table 3-20.** Construction Vibration Criteria for the Evaluation of Structural Damage. The criteria for structural damage are based on the building construction categories, which take into account the susceptibility of fragile structures to vibration damage.

Based on the FTA's construction vibration damage criteria, construction vibration criteria would range from 0.2 in/sec ppv for non-engineered structures to 0.5 in/sec for engineered/reinforced structures. No land uses that would be considered extremely susceptible to groundborne vibration, such as recording studios and concert halls, have been identified in the project area.

Table 3-20. Construction Vibration Criteria for the Evaluation of Structural Damage

Land Use Category	PPV	VdB
Category 1: Reinforced-concrete, steel or timber (no plaster)	0.5	102
Category 2: Engineered concrete and masonry (no plaster)	0.3	98
Category 3: Non-engineered timber and masonry buildings	0.2	94
Category 4: Buildings extremely susceptible to vibration damage	0.12	90
PPV = Peak Particle Velocity (inches per second) *VdB = Root mean square vertical vibration velocity in decibels (re 1 micro-inch/second)*		

Source: FTA 2006

California Department of Transportation

Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects (Protocol)* specifies the policies, procedures, and practices to be used by agencies that sponsor new construction or reconstruction of federal or Federal-aid highway projects in California. The Protocol defines a noise increase as substantial when the predicted noise levels with Project implementation exceed existing noise levels by 12 dBA or more. The Protocol also states that a sound level is considered to approach an Noise Abatement Criteria (NAC) level when the sound level is within 1 dB of the NAC identified in 23 CFR 772 (e.g., 66 dBA is considered to approach the NAC of 67 dBA, but 65 dBA is not).

The Technical Noise Supplement to the Protocol provides detailed technical guidance for the evaluation of highway traffic noise. This includes field noise monitoring methods, noise modeling methods, and report preparation guidance. The Caltrans-recommended guidance is applicable to traffic noise levels associated with the relocation of Rosecrans Avenue.

Federal Highway Administration

23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and Federal-aid highway projects. Under 23 CFR 772.7, projects are categorized as Type I, Type II, or Type III projects.

FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment of the highway. The following projects are also considered to be Type I projects:

- The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a high-occupancy vehicle (HOV) lane, high-occupancy toll (HOT) lane, bus lane, or truck climbing lane,
- The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane,
- The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange,
- Restriping existing pavement for the purpose of adding a through traffic lane or an auxiliary lane, and
- The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot, or toll plaza.

If a project is determined to be a Type I project under this definition, the entire project area as defined in the environmental document is a Type I project.

A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment. A Type III project is a project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

Under 23 CFR 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR 772 requires that the project sponsor "consider" noise abatement before adoption of the final NEPA document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project, and of noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR 772.5, occur when the predicted noise level in the design-year approaches or exceeds the NAC specified in 23 CFR 772, or a predicted noise level substantially exceeds the existing noise level (a "substantial" noise increase). 23 CFR 772 does not specifically define the terms "substantial increase" or "approach;" these criteria are defined in the Protocol, as described below.

Table 3-21. Activity Categories and Noise Abatement Criteria summarizes the NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual or permitted land use in each area. No NAC have been identified for Activity Category F or G land uses. The FHWA-recommended guidance is applicable to traffic noise levels associated with the relocation of Rosecrans Avenue.

Table 3-21. Activity Categories and Noise Abatement Criteria

Activity Category	Activity $L_{eq}(h)$[1]	Evaluation Location	Description of Activities
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67	Exterior	Residential. Includes residential hotels and motels that function as apartment dwellings.
C[2]	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	None	None	Includes a variety of land uses that are not sensitive to noise, such as agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.

Activity Category	Activity $L_{eq}(h)^1$	Evaluation Location	Description of Activities
G	None	None	Undeveloped lands that are not permitted.

Note: The $L_{eq}(h)$ activity criteria values are for impact determination only and are not design standards for noise abatement measures. All values are A-weighted decibels (dBA). Includes undeveloped lands permitted for this activity category.
Source: 23 CFR 772

City of Santa Fe Springs Code of Ordinances

The City of Santa Fe Springs Code of Ordinances, Chapter 155, Zoning, Sections 155.421 through 155.424 provide the basis for the control of unnecessary, excessive and annoying noises from non-transportation noise sources. The City's noise ordinance does not identify noise standards specific to construction activities. However, the ordinance does restrict noise-generating construction activities that occur within 500 feet of residential uses to between the daytime hours of 7:00 a.m. and 7:00 p.m.

City of Santa Fe Springs General Plan

The City of Santa Fe Springs General Plan Noise Element identifies standards and criteria to be applied to ensure the compatibility of proposed land uses with the existing and projected future noise environment. The general plan also identifies exterior and interior transportation noise exposure standards. The City's transportation noise exposure standards apply to various land use designations, based on the sensitivity of the receiving land use to the noise environment. These standards are applied to new development projects for which the City has discretionary approval.

3.14.2 Affected Environment

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. The amplitude of pressure waves generated by a sound source determines the loudness of that source. Decibels (dB) is a logarithmic scale that is used to describe sound pressure level. The threshold of hearing for young people is about 0 dBA. Laboratory measurements of amplitude correlate a 10 dB increase with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person. A-weighted decibels (dBA) describe the relative loudness of sounds in air as perceived by the human ear.

The existing noise environment in the project area is influenced by vehicle traffic on area roadways, as well as freight and passenger railroad operations along the BNSF railroad tracks. These are the major sources of noise in the project area.

Ambient noise levels associated with vehicle traffic along area roadways were characterized based on short- and long-term noise measurements conducted in the project area. These short-term and long-term noise measurements were used, in part, for calibration of the traffic noise modeling conducted for the Project and for assessment of cumulative traffic/rail noise exposure levels at the nearest primarily affected noise-sensitive receivers. According to the short-term noise measurements, average-hourly daytime noise levels along area roadways generally ranged from approximately 60 to 70 dBA L_{eq}. Ambient

noise levels vary depending on various factors, including distance from nearby transportation sources and time of day.

Long-term measurements were conducted along Rosecrans Avenue, east of Marquardt Avenue, and along Marquardt Avenue, north of Rosecrans Avenue. These measurement locations are identified as LT-1 and LT-2, respectively. Based on the long-term noise measurements conducted, average-hourly traffic noise levels measured at the LT-1 monitoring location ranged from a nighttime low of 60 dBA L_{eq} to a daytime high of 71 dBA L_{eq} during the 5:00 p.m. hour. Average-hourly traffic noise levels measured at the LT-2 monitoring location ranged from a nighttime low of 48 dBA L_{eq} to a daytime high of 61 dBA L_{eq} during the 5:00 p.m. hour. Measured average-daily traffic noise levels at these locations were roughly equivalent to the corresponding p.m. peak-hour traffic noise levels.

The project area is generally flat, and existing developed land uses are at elevations that are roughly equivalent to the adjacent roadways. Land uses within the project area are a mix of light industrial and manufacturing land uses. No existing light industrial and manufacturing land uses were determined to be noise-sensitive.

The nearest noise-sensitive land uses are residential land uses, which are approximately 400 feet north of Rosecrans Avenue and to the east of Marquardt Avenue. Existing residential land uses primarily affected by existing transportation noise sources, including the BNSF railroad tracks, are adjacent to and east of Marquardt Avenue and to the north of Rosecrans Avenue (see

Figure 3-2. Zoning Map). These existing residential uses are partially shielded from Marquardt Avenue by a 4-foot tall barrier constructed of masonry block and intervening buildings.

Ambient noise levels at residences further east of Marquardt Avenue, are largely shielded from nearby transportation noise, but more sensitive to noise generated by nearby industrial/manufacturing land uses, which are adjacent to and south of the residences. A 7-foot tall barrier constructed of masonry block extends along the southern boundary of these residential land uses.

The BNSF railroad tracks are used for both freight transport and public transportation. Train noise levels are predominantly generated by the locomotive engines, the interaction of the wheels with the track, and the sounding of warning horns. In accordance with federal regulations, locomotive horns are to be sounded for 15 to 20 seconds before entering all public grade crossings and within one-quarter mile of the grade crossing. Warning bells at grade crossings also contribute to increased noise levels.

Existing train noise levels were calculated in accordance with FTA's *Transit Noise and Vibration Impact Assessment* guidance using FTA's *Noise Impact Assessment Spreadsheet*, version 7/3/2007. Train noise levels were quantified assuming a total of 112 trains daily, including 55 freight trains and 57 passenger trains, traveling at an average speed of 50 mph. Predicted train noise levels included the sounding of warning horns would be 84 dBA L_{dn} at 50 feet. Without the sounding of warning horns, predicted train noise levels would be 77 dBA L_{dn} at 50 feet. Assuming an average signal duration of 90 seconds per event, noise levels for the crossing signal would be approximately 69 dBA L_{dn} at 50 feet. Train noise levels at nearby land uses vary depending on various factors, including distance from the source and shielding provided by intervening structures.

3.14.3 Environmental Consequences

Alternative 1: No Build Alternative

Implementation of the No Build Alternative would not require construction or changes to the existing setting of the project area. Therefore, the No Build Alternative would not directly result in impacts from noise or groundborne vibration in the project area. Under future no-build conditions, predicted traffic noise levels at these same land uses would increase by approximately 1 dBA compared to existing and would range from 43 to 57 dBA L_{eq}. The sounding of train horns would be maintained.

Alternative 2: Offset Overpass with Connector Road (Build Alternative)

Long-term Noise Impacts

Roadway traffic noise levels were predicted using the FHWA Traffic Noise Model Version 2.5 (TNM 2.5). TNM 2.5 is a computer model based on two FHWA reports: FHWA-PD-96-009 and FHWA-PD-96-010 (FHWA 1998a, 1998b). Predicted existing traffic noise levels at the nearest residential land uses would range from 42 to 56 dBA L_{eq}. With implementation of the proposed build alternative, predicted future noise levels at these residential land uses would increase by approximately 4 dBA, or less compared to existing conditions and would range from 46 to 59 dBA L_{eq}. This increase is largely due to increase exposure

resulting from the higher roadway elevation. The existing residential land uses are considered an Activity Category B land use, having an exterior noise abatement criteria (NAC) of 67 dBA L_{eq}(h). Predicted traffic noise levels would not exceed the NAC, nor would Project implementation result in a substantial increase in traffic noise levels, which is defined by Caltrans as an increase of 12A dB, or greater. Noise abatement is not required for these land uses.

As previously noted, land uses located within the project area consist predominantly of a mix of industrial and manufacturing land uses. No noise-sensitive industrial or manufacturing land uses or areas of frequent exterior use (e.g., outdoor cafes, parks) were identified in the project area. Without implementation of the Project, existing and predicted future no-build traffic noise levels at nearby industrial and manufacturing land uses would range from approximately 42 to 71 dBA L_{eq}. With implementation of the proposed Build Alternative, predicted traffic noise levels at these land uses would range from approximately 57 to 72 dBA L_{eq}. Industrial and manufacturing land uses are considered Activity Category F land uses. No NACs are identified for Activity Category F land uses. Predicted noise levels at Activity Category F land uses were quantified for reporting purposes. Noise abatement would not be required for these land uses.

A screening assessment was conducted, in accordance with FTA's guidance manual, *Transit Noise and Vibration Impact Assessment,* to identify noise-sensitive receivers near the Project that could be potentially impacted by rail noise. Based on the screening calculation conducted, land uses located within approximately 2,000 feet from the centerline of the BNSF railway could be potentially impacted by rail noise. Noise-sensitive land uses in this area consist of residential land uses, the nearest of which are generally located approximately 400 feet north of Rosecrans Avenue, adjacent to and east of Marquardt Avenue. Of these residential land uses, the nearest is approximately 565 feet from the BNSF railway and approximately 586 feet from the grade crossing signal device. As previously discussed, residential land uses are considered Category 2 land uses.

Rail noise levels at the nearest residential land uses were quantified in accordance with FTA's *Transit Noise and Vibration Impact Assessment* (2006). In comparison to existing conditions, the Project would result in an approximately 3-dB reduction in cumulative noise exposure at the nearest residential land uses (see **Error! Reference source not found.**Error! Reference source not found.). However, the Project will not change noise from train operations, because the Project would not impact the existing rail line or train operations (e.g., train speeds, number of trains operating, number of locomotives). Project rail noise levels associated with the Project would be 57 dBA L_{eq} and cumulative noise exposure levels, taking into account projected future background noise levels, would total 61 dBA L_{eq}. Predicted rail noise levels at other residential land uses located at further distance from the rail corridor would be less. In comparison to existing and future no-build conditions, the Project would result in overall reductions in cumulative noise exposure of approximately 3 dBA and 4 dBA, respectively. The estimated reductions in cumulative noise exposure would be largely a result of decreased train horn soundings on approach to the existing grade crossing, which would be removed with Project implementation. In comparison to FTA's noise assessment criteria (see **Figure 3-12.** Allowable Increase in Cumulative Noise Exposure for Category 1 and 2 Land

Uses), the Project would have "no impact." Additionally, implementation of the Project would result in an overall reduction in cumulative noise exposure at the nearby residential land uses.

Table 3-22. Predicted Rail Noise Levels at Nearest Residential Land Uses

	Noise Level (dBA L_{dn})					
	Existing	Future No-Build Alternative	Future Build Alternative[3]	Change Compared to Existing	Change Compared to Future No-Build	Type of Impact[4]
Rail Noise Level[1]	64	64	57			
Ambient Noise Level[2]	56	57	59			
Cumulative Noise Exposure	64	65	61	-3	-4	None

1. *Noise levels were calculated using the FTA Noise Impact Assessment Spreadsheet, version 7.3.2007. Assumes 55 freight trains distributed equally over a 24-hour period, and 57 passenger trains, including 50 trains during the daytime hours and 7 trains during the nighttime hours, based on current train schedules. Average train speed of 50 mph was assumed based on observed measurement data. Signal crossing warning bell noise level is based on total daily train events and an average signal duration of 90 seconds per event.*
2. *Ambient background noise levels were based on modeled traffic noise levels at this receiver location.*
3. *Based on the cumulative contribution of projected rail and ambient background noise levels.*
4. *Excludes sounding of train horns and signal crossing warning bell.*
5. *Impact is determined based on a comparison of project noise levels in comparison to total noise exposure.*

Source: AMBIENT Air Quality & Noise Consulting, LLC, 2017b

Long-term Groundborne Vibration Impacts

On-road vehicles are typically not considered to be substantial sources of ground vibration that would result in structural damage or increased levels of annoyance to nearby land uses. As a result, long-term operational activities associated with the proposed Project would not involve the use of any equipment or processes that would result in potentially adverse levels of ground vibration. No long-term vibration impacts would occur with implementation of the Project.

Short-term Construction Noise Impacts

Noise resulting from Project construction would be temporary and would vary depending on the nature of the construction activities performed. Noise generated during construction is typically associated with the operation of off-road equipment, including excavation equipment, material handlers, and portable generators. Noise levels associated with individual construction equipment used for typical construction projects can reach levels of up to approximately 90 dBA maximum sound level (L_{max}). Noise from localized point sources, such as construction sites, typically decreases by approximately six dBA with each doubling of distance from source to receptor.

Given this noise attenuation rate and typical construction equipment noise levels and usage rates, average-hourly noise levels for construction equipment would range from approximately 73 to 83 dBA equivalent sound level (L_{eq}) at 50 feet. If the two loudest pieces of equipment were to operate simultaneously in any given area, predicted average-hourly noise levels at receptors within approximately 50 feet could reach levels of approximately 86 dBA L_{eq}. Based on this noise level, the predicted 80 dBA L_{eq} construction noise contour could extend up to approximately 100 feet. The predicted 70 dBA L_{eq} construction noise contour could extend up to approximately 335 feet.

The nearest noise-sensitive land uses are residential land uses, which are approximately 400 feet north of Rosecrans Avenue and east of Marquardt Avenue. The nearest construction activities, including roadway construction activities along Marquardt Avenue and Anson Avenue, would be completed at distances of approximately 375 feet from the nearest residences. The highest construction noise levels at the nearest residence would be approximately 69 dBA L_{eq} or less. Predicted noise levels associated with construction of the proposed overpass, which would be approximately 475 feet from the nearest residences, would be approximately 67 dBA L_{eq}.

Construction-generated noise levels would not be projected to exceed FTA's 8-hour daytime or nighttime criteria of 80 dBA Leq and 70 dBA Leq, respectively. Predicted construction noise levels at nearby industrial and manufacturing land uses would not be expected to exceed FTA's noise level criteria. Therefore, no construction noise impacts are anticipated.

Short-term Construction Groundborne Vibration Impacts

Based on the levels shown, groundborne vibration levels associated with construction equipment often associated with road development projects would generate ground vibration levels of approximately 0.21 in/sec ppv (94 VdB) or less at 25 feet. The highest vibration levels would be associated with the use of vibratory rollers. However, vibration levels associated with vibratory rollers would not be generated for an extended time at any one location, and this equipment would typically be operated further than 25 feet away from nearby buildings. As previously noted, the nearest residential land uses would be approximately 375 feet from the nearest roadway improvements. Assuming a ground vibration level of 0.21 in/sec ppv at 25 feet, the highest construction-generated vibration levels at the nearest residential land use would be approximately 0.01 in/sec ppv (56 VdB) or less.

Construction-generated vibration levels at nearby land uses would not be expected to exceed FTA's recommended groundborne vibration criteria of 0.5 in/sec ppv (102 VdB) for structural damage or 0.2 in/sec ppv (94 VdB) for human annoyance. In addition, construction of the proposed overpass would not require the use of equipment or process that would generate higher levels of groundborne vibration, such as pile driving. Therefore, no construction vibration impacts are anticipated.

3.14.4 Avoidance, Minimization, and/or Mitigation Measures

The Project would not result in impacts on noise or groundborne vibration; therefore, no avoidance, minimization, and/or mitigation measures are required.

3.15 Cumulative Impacts

For a list of current and future development projects in the cities of Santa Fe Springs, La Mirada, and Norwalk, please see **Table 3-1.** Current and Future Development Projects in the Cities of Santa Fe Springs, La Mirada, and Norwalk**.** This section presents an analysis of the cumulative impacts of implementing the Project alternatives in combination with other past, present, and reasonably foreseeable actions.

3.15.1 Regulatory Setting

National Environmental Policy Act

The combined, incremental effects of human activity, referred to as cumulative impacts, pose a serious threat to the environment. While they may be insignificant by themselves, cumulative impacts accumulate over time, from one or more sources, and can result in the degradation of important resources. The assessment of cumulative impacts in NEPA documents is required by CEQ regulations, 40 CFR Parts 1500 - 1508. CEQ's regulations explicitly state that cumulative impacts must be evaluated along with the direct effects and indirect effects of each alternative. By mandating the consideration of cumulative impacts, the regulations ensure that the range of actions that is considered in NEPA documents includes not only the project proposal but also all actions that could contribute to cumulative impacts.

3.15.2 Existing and Future Land Use

Affected Environment

The study area for this cumulative impact analysis includes the cities of Santa Fe Springs, La Mirada, and Norwalk**.** Please refer to Section 3.2.2 for additional discussion on the affected environment.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in any changes to existing or future land uses or zoning. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts.

Alternative 2: Offset Overpass with Connector Road

The central portion of the study area in Santa Fe Springs is dominated by commercial and industrial buildings. Residential neighborhoods are the primary land uses in the eastern portion of the study area in La Mirada, as well as in the western portion of the study area in Norwalk. These developed land uses are consistent with existing land use designations included in the general plans for these jurisdictions.

Other projects in the cumulative study area have been, and would continue to be, conducted in accordance with the general plans for these jurisdictions, which would limit the nature and type of development within the study area so that development is compatible with existing and planned, future uses. Therefore, with compliance with general plans, impacts on existing and future land uses from other projects in the cumulative study area would be avoided or minimized to the greatest extent feasible.

As discussed in Section 3.2, the Project would result in full acquisition of eight properties, including six industrial properties and two commercial properties, and the businesses on those properties would be relocated and replaced with an overpass. As noted under Section 3.5, adequate vacancy of suitable industrial and commercial properties exists to accommodate the eight relocated businesses. Therefore, the Project would not result in changes in existing or future land use outside of the project area. Therefore, the Project would not contribute to cumulatively considerable impacts on existing and future land uses.

Avoidance and Minimization

The Project would not result in cumulatively considerable impacts on existing and future land uses, and therefore, would not require avoidance, minimization, or mitigation.

3.15.3 Consistency with Regional Local Plans and Programs

Affected Environment

The study area for this cumulative impact analysis is the same as the study area shown in **Figure 3-1.** Community Impacts Study Area**.** Please refer to Section 3.3.2 for discussion on the affected environment.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not implement actions and goals identified in Section 3.3.3. Other projects in the study area include residential, commercial, industrial, transportation, and habitat restoration projects that would implement the plans and programs identified in this document. Therefore, the No Build Alternative could impede progress in the study area attributable to the identified plans and programs.

Alternative 2: Offset Overpass with Connector Road

Cambridge Springs, LLC is a company specializing in construction materials and equipment that recently constructed an industrial building at 13341 Cambridge Street, approximately 0.7 mile to the northwest of the project area. The building would replace an existing industrial building on the site, and the site would remain consistent with existing plans applicable to the parcel. As noted above, the Project would be consistent with state, regional, and local plans and programs. Implementation of Project improvements would facilitate the actions and goals outlined in **Table 3-2.** Consistency with State, Regional, and Local Plans and Programs in unison with other current and future development projects in the study area. Therefore, the Project would not contribute to cumulatively considerable impacts on consistency with regional local plans and programs.

Avoidance and Minimization

The Project would not result in cumulatively considerable impacts on consistency with regional local plans and programs, and therefore, would not require avoidance, minimization, or mitigation.

3.15.4 Community Character and Cohesion

Affected Environment

The study area for this cumulative impact analysis is the same as the study area shown in **Figure 3-1.** Community Impacts Study Area**.** Please refer to Section 3.4.2 for discussion on the affected environment.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in any changes to community character and cohesion. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on community character and cohesion.

Alternative 2: Offset Overpass with Connector Road

The project area is in an industrial area of Santa Fe Springs that is developed with industrial and some commercial businesses. There is a residential neighborhood to the northeast, approximately 500 feet. Cambridge Springs, LLC recently constructed an industrial building in the study area. The project includes demolition and redevelopment of an existing industrial lot and would not result in a change of the existing character. The building, and any future development, would be developed according to applicable general plans and zoning ordinances that help direct development decisions to meet the needs and goals of the community.

The Project would result in full acquisition of eight properties, including six industrial properties and two commercial properties, requiring that these businesses be relocated and replaced nearby (see Section 3.5.3). Research has indicated that appropriate relocation sites exist in the study area, and displaced businesses would be able to continue operation within the community. The overpass would be a new vertical element that would be visible to nearby viewers and could alter the community character of the study area. However, the overpass would not be visible from residences north of the project area, because the overpass would not be substantially taller than the surrounding buildings, and most views of the overpass would be blocked by the surrounding buildings (see Section 3.9.3). In addition, the new overpass would blend in with the industrial setting of the project area.

The Project, as well as past, present, and reasonably foreseeable projects, would be developed in accordance with applicable general plans and zoning ordinances in the study area. Additionally, the projects would support the existing community setting. Identified projects would not result in impacts to community character and cohesion. Therefore, the Project would not contribute to cumulatively considerable impacts on community character and cohesion.

Avoidance and Minimization

The Project would not result in cumulatively considerable impacts on community character and cohesion, and therefore, would not require avoidance, minimization, or mitigation.

3.15.5 Relocations and Real Property Acquisition

Affected Environment

The study area for this cumulative impact analysis is the same as the study area shown in **Figure 3-1.** Community Impacts Study Area**.** Please refer to Section 3.5.2 for discussion on the affected environment.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in property acquisition. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on relocations and real property acquisitions.

Alternative 2: Offset Overpass with Connector Road

Another project planned in the study area includes the I-5 Freeway Corridor. All future, present, and past federal projects in the cumulative study area have been conducted in accordance with the general plans for the study area, and in compliance with the Uniform Act. With compliance with general plans and the Uniform Act, federal projects requiring relocations would be required to ensure that adequate vacancies of suitable replacement properties are available without affecting existing/future land uses. The planned Cambridge Springs, LLC industrial building is a private redevelopment project that is not subject to the Uniform Act, but did not require property acquisition.

The Project would result in eight full property acquisitions, including six industrial properties and two commercial properties that would be replaced with transportation facility. The Project would require relocation of the acquired properties. Adequate vacancy of suitable industrial and commercial properties exists in Santa Fe Springs to accommodate relocated businesses without resulting in changes in land use outside of the project area (see Section 3.5). Also, through implementation of Avoidance and Minimization Measure R-1 in Section 3.5.4, the Project would not result in adverse impacts related to Relocations and Real Property Acquisition in the project area. Therefore, projects in the study area would not contribute to cumulatively considerable impacts on relocations and real property acquisitions.

Avoidance and Minimization

Through implementation of previously identified measure R-1 in Section 3.5.4 the Project would not contribute to cumulatively considerable impacts on relocations and real property acquisitions and no further avoidance, minimization, or mitigation measures would be required.

3.15.6 Environmental Justice

Affected Environment

The study area for this cumulative impact analysis is the same as the study area shown in **Figure 3-4.** Environmental Justice Populations**.** Please refer to Section 3.6.2 for discussion on the affected environment.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in actions that could result in disproportionately high or adverse impacts. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on environmental justice populations.

Alternative 2: Offset Overpass with Connector Road

The study area includes 24 Census block groups, only two of which do not include an environmental justice population. Other projects in the study area include the I-5 Freeway Corridor project and the Cambridge Springs, LLC development project (see Section 3.15.3). Both projects are in Census block groups that were identified as environmental justice populations, as shown in **Figure 3-4.** Environmental Justice Populations.

As discussed in Section 3.6.3, the Project is not anticipated to result in disproportionately high or adverse impacts. The Project would increase the safety of the Rosecrans/Marquardt/BNSF intersection for community members in the study area. Therefore, the Project would not contribute to cumulatively considerable impacts on environmental justice populations.

Avoidance and Minimization

The Project would not result in disproportionately high or adverse impacts on environmental justice populations. Therefore, the Project would not contribute to cumulative impacts related to environmental justice, and avoidance, minimization, and mitigation would not be required.

3.15.7 Utilities/Emergency Services

Affected Environment

The study area for this cumulative impacts analysis is the same as the study area shown in **Figure 3-1.** Community Impacts Study Area. The cumulative study area is provided service by the same utilities and emergency service providers as discussed in Section 3.7.1. Please refer to Section 3.7.1 for discussion on the affected environment.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in changes to existing utility infrastructure or emergency service. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on utilities or emergency services.

Alternative 2: Offset Overpass with Connector Road

Other projects in the cumulative study area have been, and would continue to be, required to schedule and coordinate disruptions in utility service to ensure that they would not adversely affect the surrounding

community. In addition, other projects would require implementation of a traffic management plan and coordination with local emergency service providers to avoid or minimize impacts on emergency service response times.

Implementation of the Project would require disruption and relocation of existing utilities in the study area. Impacts to utility service would be avoided and minimized through measures U-1 (see Section 3.7.2). Additionally, Project construction would temporarily impact transportation facilities used by emergency service providers. However, Rosecrans Avenue would remain open during construction so that access would be maintained for emergency service providers during Project construction. In addition, impacts to emergency service response times would be avoided and minimized through measures U-2 (see Section 3.7.2). Therefore, the Project would not contribute to cumulatively considerable impacts on utilities/emergency services.

Avoidance and Minimization

The Project would not result contribute to cumulatively considerable impacts on utilities/emergency services. No avoidance, minimization, or mitigation would be required.

3.15.8 Traffic and Transportation/Pedestrian and Bicycle Facilities

Affected Environment

The study area for this cumulative impact analysis includes the cities of Santa Fe Springs, La Mirada, and Norwalk**.** Please refer to Section 3.2.2 for additional discussion on the affected environment.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in changes to existing transportation facilities or public transportation services. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on traffic and transportation/pedestrian and bicycle facilities.

Alternative 2: Offset Overpass with Connector Road

All past and current transportation projects have been constructed through implementation of the applicable general plans, zoning ordinances, development plans, and FTIPs. **Table 3-1.** Current and Future Development Projects in the Cities of Santa Fe Springs, La Mirada, and Norwalk identifies current and future projects for the study area. The I-5 Freeway Corridor is a major freeway capacity increasing effort that would widen the I-5 freeway from six to 10 lanes and would improve the overall traffic circulation along the I-5 South Corridor, improve traffic flow on nearby frontage roads, enhance safety, accommodate future traffic demands increasing capacity, and revitalize the I-5 community (State of California, 2017). The project is currently under construction and is consistent with the regional FTIP.

The Project is not anticipated to result in significant impacts on long-term or short-term traffic or transportation impacts, as identified in Section 3.15.8. The Project will improve safety for motor vehicles,

pedestrians, and bicyclists in the project area. Therefore, the Project would not contribute to cumulatively considerable impacts on traffic and transportation/pedestrian and bicycle facilities.

Avoidance, Minimization, and Mitigation

The Project would not result contribute to cumulatively considerable impacts on traffic, transportation, bicycle, or pedestrian facilities. Therefore, no avoidance, minimization, or mitigation would be required.

3.15.9 Visual/Aesthetics

Affected Environment

The study area for this cumulative impacts analysis is the same as the study area shown in **Figure 3-1.** Community Impacts Study Area**.** The study area is inclusive of portions of Santa Fe Springs, La Mirada, and Norwalk.

Santa Fe Springs's regional location and proximity to major transportation corridors have been important factors contributing to the City's predominately industrial visual setting (City of Santa Fe Springs, 1994). The industrial area includes warehouses, transportation facility, and the concrete-lined Coyote Creek drainage channel and bikeway. The portion of La Mirada included in the study area is highly characterized by residential community, populated with single family homes and schools (see **Figure 3-2**). The area includes ample green space and facilities for community use. The eastern portion of Norwalk contains heavy manufacturing facilities, including factories and warehouses. The visual setting transitions to residential towards the western portion of Norwalk contained in the study area. Residential areas in the study area are considered populations of sensitive viewers. Since the study area is flat, the viewsheds from the study area are not very expansive.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in changes to existing visual or aesthetic resources. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on visual or aesthetic resources.

Alternative 2: Offset Overpass with Connector Road

Other projects in the cumulative study area have been, and would continue to be, conducted in accordance with the general plans and zoning ordinances for these jurisdictions, which would limit the nature and type of development within the study area so that development would not adversely affect existing visual character, and would not result in additional light or glare that would be incompatible with surrounding land uses. Therefore, with compliance with general plans and ordinances, adverse impacts on visual character, and light and glare impacts from other projects in the cumulative study area would be avoided or minimized to the greatest extent feasible.

The Project would include construction of an overpass to replace the existing at-grade railroad crossing, which would result in a new vertical element and additional light and glare that would be visible to nearby viewers. However, the Project would not be visible to sensitive viewers residing in the residential community to the northeast of the Project (see Section 3.9.3). Additionally, residential viewers in the southwest of the study area would not be impacted by visual changes of the Project due since views of the project area are obstructed by surrounding industrial buildings. Because the new overpass and additional light/glare would not be highly visible from residences, and would blend in with the surrounding industrial landscape, the Project would not substantially contribute to cumulative impacts on visual character, or cumulative impacts from light/glare.

Avoidance and Minimization

The Project would not result contribute to cumulatively considerable impacts on visual and aesthetic resources. Therefore, no avoidance, minimization, or mitigation would be required.

3.15.10 Cultural Resources

Affected Environment

The APE, as illustrated in **Figure 3-9.** Area of Potential Effects, is considered the cumulative study area for cultural resources. This is the same study area as described in Section 3.10.2. Please refer to Section 3.10.2 for additional discussion on the affected environment.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in changes to the study area. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on cultural resources.

Alternative 2: Offset Overpass with Connector Road

Cultural studies discussed in in Section 3.10.2 characterized the study area as an area containing existing and potential archeological, paleontological, and historical resources. Current and future projects in the study area include the Cambridge Springs, LLC development project and the I-5 Freeway Corridor widening project. The Cambridge Springs, LLC development project is a redevelopment project that replaced an existing, non-historical, industrial building on site. This project has already been constructed and does not have the potential to result in impacts to cultural resources. The I-5 Freeway Corridor project would be subject to NEPA and Section 106 of the NHPA, which would implement measures to avoid and minimize any potential impacts to impacts on potential cultural resources in the study area.

The Project could result in direct impacts related to the disturbance of previously unidentified archaeological or paleontological resources during construction. Therefore, the Project has the potential to contribute to cumulative impacts on archaeological and paleontological resources. The Project would include implementation of Avoidance and Minimization Measures C-1 through C-7 in Section 3.10.4, which would avoid or substantially minimize adverse impacts. Therefore, with implementation of avoidance and

minimization measures, the Project would not contribute to cumulative impacts on archaeological or paleontological resources.

Avoidance and Minimization

The Project would not result contribute to cumulatively considerable impacts on cultural resources. Therefore, no avoidance, minimization, or mitigation would be required.

3.15.11 Water Quality and Storm Water Runoff

Affected Environment

The study area for this cumulative impacts analysis is considered the Lower San Gabriel River Watershed. The watershed drains 689 square miles into a 58-mile long channel of the San Gabriel River, eventually emptying into the Pacific Ocean (John L. Hunter and Associates, Inc., 2015). The main tributaries of the river are Big and Little Dalton Wash, San Dimas Wash, Walnut Creek, San Jose Creek, Fullerton Creek, and Coyote Creek.

Water quality in the study area has been impaired by several types of pollutants, including runoff from roadway operations. Various reaches of the Lower SGR Watershed are on the 2010 CWA Section 303(d) list of impaired water bodies due to metals (copper, lead, selenium, and zinc). Segments of the San Gabriel River and its tributaries are listed as exceeding water quality objectives for copper, lead, selenium, and zinc. Road infrastructure was identified as a major source of pollutant loads in the study area (John L. Hunter and Associates, Inc., 2015). Increasing vehicles on the roadways and imperviousness of the drainage basin contribute to increased pollutant load discharge.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in changes to the study area. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on water quality and storm water runoff.

Alternative 2: Offset Overpass with Connector Road

Other projects in the cumulative study area have been, and would continue to be, required to comply with standard regulations and permits, which would ensure that construction BMPs are implemented during construction, and that projects are designed to accommodate and treat anticipated storm water flows. Receiving waters that are or become impaired and are listed on the 303d list, would be subject to a Total Maximum Daily Load (TMDL) pollutant diet, or alternative program of similar nature. Therefore, with compliance with standard regulations and permits, impacts on water quality and storm water runoff from other projects in the cumulative study area would be avoided or minimized.

The Project would not increase impervious surface area or roadway capacity, and permeability of the project area would generally increase (see **Table 3-9.** Impervious Surface Area). During construction, there is potential that exposed soils, construction debris, and other pollutants could be carried in storm water

runoff and discharged into drainages near the project area. However, through implementation of Avoidance and Minimization Measures W-1 through W-3, potential pollutants would be avoided and minimized. Therefore, the Project would not contribute to cumulative impacts on water quality and storm water runoff.

Avoidance and Minimization

The Project would not result contribute to cumulatively considerable impacts on water quality or storm water runoff. Therefore, no avoidance, minimization, or mitigation would be required.

3.15.12 Hazardous Waste/Materials

Affected Environment

The study area for this cumulative impacts analysis is considered all land within Santa Fe Springs because the Santa Fe Springs Certified Unified Program is responsible for protecting the public and environment from hazardous wastes/materials in the project area through administrative requirements, permits, inspections, and enforcement. For additional discussion on affected environment please refer to Section 3.12.2.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in changes to the study area. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on hazardous waste or materials.

Alternative 2: Offset Overpass with Connector Road

Other projects in the cumulative study area have been, and would continue to be, conducted in accordance with applicable hazardous waste/materials regulations, which would require appropriate containment, handling, and disposal of these substances. Therefore, with compliance with standard regulations, adverse impacts related to hazardous wastes/materials from other projects in the cumulative study area would be avoided or minimized.

The Project would not result in any long-term impacts on hazardous waste or materials, nor would it result in long-term discharge of hazardous waste in the study area (see Section 3.12.3). The Project could result in exposure to hazardous waste/materials if substances are disturbed during construction of the Project. However, through implementation of Avoidance and Minimization Measures H-1 through H-8, the Project would not result in impacts on hazardous materials during Project construction. Therefore, with compliance with standard regulations, the Project would not contribute to cumulative impacts related to hazardous wastes/materials.

Avoidance and Minimization

The Project would not result contribute to cumulatively considerable impacts on hazardous waste or materials. Therefore, no avoidance, minimization, or mitigation would be required.

3.15.13 Air Quality

Affected Environment

The study area for this cumulative impacts analysis is considered the SCAB. This is the same study area as described in Section 3.13.2. Please refer to Section 3.13.2 for additional discussion on the affected environment.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in changes to existing air quality. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on air quality in the study area.

Alternative 2: Offset Overpass with Connector Road

The SCAQMD is responsible for improving air quality in the study area. Over the years, the SCAQMD has made positive strides in improving air quality, even with population growth (AMBIENT Air Quality & Noise Consulting, LLC, 2018). In addition, other projects in the cumulative study area have been, and would continue to be, required to comply with standard SCAQMD regulations and permits. Therefore, cumulative impacts on air quality from other past, present, and reasonably foreseeable future projects are not expected.

The Project is not anticipated to result in adverse construction-related or operational air quality impacts in the study area (see Section 3.14.3). Annual construction emissions would fall below the general conformity threshold. Operational emissions would generally be greater through implementation of the Project compared to the No Build Alternative, however, emissions would still be expected to decrease from existing conditions (see

Table 3-15. Operational Emissions of Criteria Air Pollutants). Emission decreases can generally be attributed to projected future improvements in vehicle emission standards and fleet turnover. Therefore, the Project would not substantially contribute to cumulative impacts related to air quality.

Avoidance and Minimization

The Project would not result contribute to cumulatively considerable impacts on Air Quality. Therefore, no avoidance, minimization, or mitigation would be required.

3.15.14 Noise and Vibration

Affected Environment

The study area for this cumulative impacts analysis is generally considered the extent to which noise and groundborne vibrations generated from the project area can be heard or felt. The study area is the same as described in Section 3.14.2. Please refer to Section 3.14.2 for additional discussion on the affected environment.

Environmental Consequences

Alternative 1: No Build Alternative

The No Build Alternative would not result in changes to the study area. Therefore, the No Build Alternative would not contribute to cumulatively considerable impacts on noise.

Alternative 2: Offset Overpass with Connector Road

Other current and future projects in the study area include the Cambridge Springs, LLC development project and the I-5 Freeway Corridor project. The Cambridge Springs, LLC development project is not anticipated to result in a long-term increase of noise levels or groundborne vibration since the project included replacement of an existing industrial building with a similar industrial building. The building has already been constructed, and would not contribute to potential cumulative noise or groundborne vibration impacts resulting from construction. The I-5 Freeway Corridor project would increase capacity on the I-5, which could result in additional long-term noise impacts from traffic. However, the I-5 Freeway Corridor project would be required to comply with local noise ordinances and FTA's NACs. Compliance with standards would avoid, minimize, or mitigate noise below applicable noise thresholds. Construction of the I-5 project could result in a temporary increase of groundborne vibration in the study area, however, the project would comply with FTA's vibration impact criteria and would be far enough from the Project that vibration levels from the two projects would not cumulatively impact a single impact area.

In comparison to existing and future no-build conditions, the Project would result in overall reductions in cumulative noise exposure of approximately 3 dBA and 4 dBA, respectively (see Section 3.14.3). Additionally, the Project would not result in any additional long-term sources of groundborne vibrations. Due to the distance of nearest sensitive receptors, construction-generated noise levels would not be projected to exceed FTA's 8-hour daytime or nighttime criteria and would not result in impacts on the project area. Therefore, the Project would not contribute to cumulative impacts related to noise.

Avoidance and Minimization

The Project would not result contribute to cumulatively considerable impacts on noise or groundborne vibration. Therefore, no avoidance, minimization, or mitigation would be required.

4.0 PUBLIC COMMENTS AND COORDINATION

4.1 Alternatives Analysis

Four alternatives were considered for the original project design. The alternatives are discussed in Section 2.4 of this document. Other alternatives withdrawn from consideration include those that depressed the BNSF tracks (trench) under the roadways, those that shifted the alignment of Rosecrans Avenue to the north, and those that raised or lowered Marquardt Avenue. Ultimately, the Build Alternative, Offset Overpass with Connector Roads, was selected based on consideration of several criteria identified in an Alternatives Development Report completed for the Project.

Public comment and outreach was initiated to solicit public feedback regarding project alternatives and scope prior to initiating the NEPA process. In July 2015, Metro prepared a Public Participation Plan to engage the public's participation in the alternatives analyses for the Project. In addition, two public meetings were held on September 30, 2015 at the La Mirada Resource Center. An additional meeting was held on October 17, 2017 at the La Mirada Resource Center as well. Postcards and flyers were distributed to the attendees, and mailed to affected stakeholders, including property owners, tenants, businesses, and other interested parties, to further promote the public outreach meetings.

In December 2015, Metro prepared a Public Outreach Summary Report for the two public outreach meetings. Based on feedback provided at the meetings, community members are generally in support of the Project. The majority of meeting attendees were owners and tenants of property that would be potentially acquired, and these attendees were seeking information regarding the acquisitions processes. Attendees were also interested in specific issues surrounding the routes presented under each alternative.

4.2 Public Review Period

During the public review period for the environmental document, public engagement activities will also be conducted to invite input from all members of the community on the environmental analysis. Mailers and other materials may be used to ensure that all members of the community have an opportunity to ask questions, and to comment on the Project and the environmental document. Public comments received during the public review period will be included in the final environmental document, and will be considered during the environmental review and Project development process.

5.0 LIST OF PREPARERS

Federal Rail Administration

Lyle Leitelt	Community Planner
Stephanie Perez	Environmental Protections Specialist

Metro

Jeanet Owens	Senior Executive Officer – Program Management/Regional Rail
Dan Mahgerefteh	Project Engineer

GPA Consulting

Richard Galvin	Principal Planner
David Lewis	Senior Environmental Planner
Jeanne Ogar	Senior Environmental Planner
Danielle Thayer	Environmental Planner

6.0 DISTRIBUTION LIST

6.1 Elected Officials

Board Member Mike Bonin
Los Angeles County
Metropolitan Transportation Agency
1 Gateway Plaza
Los Angeles, CA 90012

Board Member James Butts
Los Angeles County
Metropolitan Transportation Agency
1 Gateway Plaza
Los Angeles, CA 90012

Mayor Pro Tem John Fasana
Los Angeles County
Metropolitan Transportation Agency
1 Gateway Plaza
Los Angeles, CA 90012

First Vice Chair Eric Garcetti
Los Angeles County
Metropolitan Transportation Agency
1 Gateway Plaza
Los Angeles, CA 90012

Board Member Robert Garcia
Los Angeles County
Metropolitan Transportation Agency
1 Gateway Plaza
Los Angeles, CA 90012

Board Member Paul Krekorian
Los Angeles County
Metropolitan Transportation Agency
1 Gateway Plaza
Los Angeles, CA 90012

Board Member Sheila Kuehl
Los Angeles County
Metropolitan Transportation Agency
1 Gateway Plaza
Los Angeles, CA 90012

Board Member Ara Najarian
Los Angeles County Metropolitan
Transportation Agency (Metro)
1 Gateway Plaza
Los Angeles, CA 90012

Chair Mark Ridley-Thomas
Los Angeles County Metropolitan
Transportation Agency (Metro)
1 Gateway Plaza
Los Angeles, CA 90012

Board Member Hilda L. Solis
Los Angeles County
Metropolitan Transportation Agency
1 Gateway Plaza
Los Angeles, CA 90012

Councilmember Richard J. Moore
City of Santa Fe Springs
11710 E. Telegraph Road
Santa Fe Springs, CA 90670

Mayor William K. Rounds
City of Santa Fe Springs
11710 E. Telegraph Road
Santa Fe Springs, CA 90670

Mayor Pro-Tem Jay Sarno
City of Santa Fe Springs
11710 E. Telegraph Road
Santa Fe Springs, CA 90670

Councilmember Juanita A. Trujillo
City of Santa Fe Springs
11710 E. Telegraph Road
Santa Fe Springs, CA 90670

Vice Mayor Cheri Kelly
City of Norwalk
12700 Norwalk Blvd.
Norwalk, CA 90650

Mayor Mike Mendez
City of Norwalk
12700 Norwalk Blvd.
Norwalk, CA 90650

Councilmember Leonard Shryock
City of Norwalk
12700 Norwalk Blvd.
Norwalk, CA 90650

Councilmember Luigi Vernola
City of Norwalk
12700 Norwalk Blvd.
Norwalk, CA 90650

Assemblymember Ian Calderon
California State Assembly, District 57
13181 Crossroads Parkway North, Suite 160
Industry, CA 91746

District Director Jordan Brandman
California State Assembly, District 57
Office of Assemblymember Ian Calderone
13181 Crossroads Parkway North, Suite 160
Industry, CA 91746

Senior Field Representative Samantha Marquez
California State Assembly, District 57
Office of Assemblymember Ian Calderone
13181 Crossroads Parkway North, Suite 160
Industry, CA 91746

Communications Director Lerna Shirinian
California State Assembly, District 57
Office of Assemblymember Ian Calderone
13181 Crossroads Parkway North, Suite 160
Industry, CA 91746

Councilmember Josué Alvarado
City of South Whittier
13230 Penn Street
South Whittier, CA 90602

Councilmember Fernando Dutra
City of South Whittier
13230 Penn Street
South Whittier, CA 90602

Mayor Pro Tem Bob Henderson
City of South Whittier
13230 Penn Street
South Whittier, CA 90602

Mayor Joe Vinatieri
City of South Whittier
13230 Penn Street
South Whittier, CA 90602

Councilmember Cathy Warner
City of South Whittier
13230 Penn Street
South Whittier, CA 90602

Councilmember Paula Deal
City of La Mirada
13700 La Mirada Blvd.
La Mirada, CA 90638

Mayor Pro Tem Ed Eng
City of La Mirada
13700 La Mirada Blvd.
La Mirada, CA 90638

Councilmember Lawrence P. Mowles
City of La Mirada
13700 La Mirada Blvd.
La Mirada, CA 90638

Councilmember Andrew Sarega
City of La Mirada
13700 La Mirada Blvd.
La Mirada, CA 90638

Mayor De Ruse Steve
City of La Mirada
13700 La Mirada Blvd.
La Mirada, CA 90638

Pedro Aceituno
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Sal Alatorre
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Ivan Altamirano
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

President AJ Austin
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Cinde Cassidy
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Gene Daniels
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

William Davis
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Vanessa Delgado
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Gil Hurtado
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Diane DuBois
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Tony Lima
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Raymond Dunton
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Mike Mendez
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

2nd Vice President Fernando Dutra
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

1st Vice President Jhonny Pineda
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Ed Eng
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Mark D. Radecki
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Christian Hernandez
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

George Ray
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Reynaldo Rodriguez
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Edward H. J. Wilson
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Immediate Past President Ali Saleh
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Jay Zamora
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Emma Sharif
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Ex-Officio Member Drummond Doug
Gateway Cities Council of Governments
Board of Directors
16402 Paramount Boulevard
Paramount, CA 90724

Brent Tercero
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Robert Uranga
Gateway Cities Council of Governments
Board of Directors
16402 Paramount Boulevard
Paramount, CA 90724

Fernando Vasquez
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Board Member Jacquelyn Dupont-Walker
Los Angeles County
Metropolitan Transportation Agency
2 Gateway Plaza
Los Angeles, CA 90013

Ricardo Villareal
Gateway Cities Council of Governments
Board of Directors
16401 Paramount Boulevard
Paramount, CA 90723

Chief of Staff Ana Guerrero
Office of Los Angeles City Mayor, Eric Garcetti
200 N. Spring St Room 303
Los Angeles, CA 90012

Board Member Janice Hahn
Los Angeles County
Metropolitan Transportation Agency
3 Gateway Plaza
Los Angeles, CA 90014

Senator Tony Mendoza
California State Senate, District 32
Office of Senator Tony Mendoza
400 N. Montebello Blvd., Suite 100
Montebello, CA 90640

District Director Alma Marquez
California State Senate, District 32
Office of Senator Tony Mendoza
400 N. Montebello Blvd., Suite 100
Montebello, CA 90640

Chief Deputy Dorinne Jordan
Los Angeles County, District 2
Office of Supervisor Mark Ridley-Thomas
500 W Temple Street, Room 866
Los Angeles, CA 90012

Chief of Staff Kathryn Barger
Los Angeles County, District 5
Office of Supervisor Michael Antonovich
500 West Temple Street, Room 869
Los Angeles, CA 90012

Communications Director John Mann
California State Senate, District 32
Office of Senator Tony Mendoza
State Capitol, Room 5061
Sacramento, CA 95814

6.2 Federal Agencies

Kathleen Goforth
Environmental Review Section Manager
Environmental Protection Agency
Region 9, Pacific Southwest
600 Wilshire Blvd., Suite 1460
Los Angeles, CA 90017

Josue Yambo
Federal Highway Administration
CALSOUTH Office
888 S. Figueroa St., Ste. 750
Los Angeles, CA 90017

Leslie Rogers
Region 9 Administrator
Federal Transit Administration
Region 9 Office
90, 7th Street, Suite 15-300
San Francisco, CA 94103

6.3 State Agencies

Carrie Bowen
Director
California Department of Transportation
District 7
100 S. Main Street
Los Angeles, CA 90012

Royce Gotcher
California Department of Transportation
Division of Rail
Division of Rail & Mass Transportation, MS #39,
P.O. Box 942874
Sacramento, CA 94274

Rachel Kesting
Southern California Public Information Officer
California High-Speed Rail Authority
700 N Alameda, Room 3-532
Los Angeles, CA 90012

Janice Neibel
Board Secretary
California High-Speed Rail Authority Board of Directors
700 N Alameda, Room 3-532
Los Angeles, CA 90012

Melissa De la Pena
California High-Speed Rail Authority
700 N. Alameda, Room 3-532
Los Angeles, CA 90012

6.4 Local Agencies

Gabriel Bautista
City Planner
City of La Mirada
13700 La Mirada Blvd.
La Mirada, CA 90638

Alison Moore
Community Development Manager
City of La Mirada
13700 La Mirada Blvd.
La Mirada, CA 90638

Gary Sanui
Public Works Manager
City of La Mirada
13700 La Mirada Blvd.
La Mirada, CA 90638

Mark Stowell, P.E.
Public Works Director/City Engineer
City of La Mirada
13700 La Mirada Blvd.
La Mirada, CA 90638

Lori Thompson
Community Services Director
City of La Mirada
13700 La Mirada Blvd.
La Mirada, CA 90638

Jim Parker
Director of Transit
City of Norwalk Norwalk Transit System (NTS)
12650 E. Imperial Hwy.
Norwalk, CA 90650

Kurt Anderson
Director, Community Development
City of Norwalk
12700 Norwalk Blvd.
Norwalk, CA 90650

Maricela Balderas
Director of Community Services
City of Santa Fe Springs Community Services
11710 E. Telegraph Road
Santa Fe Springs, CA 90670

Wayne M. Morrell
Director of Planning
City of Santa Fe Springs
Planning and Development
11710 E. Telegraph Road
Santa Fe Springs, CA 90670

Noe Negrete
Public Works
City of Santa Fe Springs
11710 E. Telegraph Road
Santa Fe Springs, CA 90670

Cuong Nguyen
Senior Planner
City of Santa Fe Springs Planning and Development
11710 E. Telegraph Road
Santa Fe Springs, CA 90670

Richard Beltran
County of Los Angeles Chief Executive Office
500 West Temple St., Rm 754
Los Angeles, CA 90012

Rogelio Gamino
County of Los Angeles Chief Executive Office
500 West Temple St., Rm 754
Los Angeles, CA 90012

Chester Kano
Department Facilities Planner
County of Los Angeles Department of Parks and Recreation
265 Cloverleaf Dr.
Baldwin Park, CA 91706

Norma E. Garcia
Deputy Director
County of Los Angeles Department of Parks and Recreation Planning and Development
510 S. Vermont Ave
Los Angeles, CA 90020

Kathline King
Chief of Planning
County of Los Angeles Department of Parks and Recreation Planning and Development
510 S. Vermont Ave.
Los Angeles, CA 90020

Frank Moreno
Section Head - Trails
County of Los Angeles Department of Parks and Recreation Planning and Development
510 S. Vermont Ave.
Los Angeles, CA 90020

Russ Guiney
Director
County of Los Angeles Department of Public Works
433 S. Vermont Ave
Los Angeles, CA 90020

Martin Aiyetiwa Environmental Programs Division Head
County of Los Angeles Department of Public Works
900 S. Fremont Ave
Alhambra, CA 91803

Coby Skye
Environmental Programs Division Engineer
County of Los Angeles
Department of Public Works
900 S. Fremont Ave
Alhambra, CA 91803

Alejandrina Baldwin
Principal Regional Planning Assistant
County of Los Angeles Department of Regional Planning
320 W. Temple St.
Los Angeles, CA 90012

Patricia Hachiya
Supervising Regional Planner
County of Los Angeles Department of Regional Planning
320 W. Temple St.
Los Angeles, CA 90012

Supervising Regional Planner, Zoning Permits East Section Maria Masis, AICP
County of Los Angeles Department of Regional Planning
320 W. Temple St.
Los Angeles, CA 90012

Alice Wong
Principal Planner
County of Los Angeles Department of Regional Planning
320 W. Temple St., Room 1360
Los Angeles, CA 90012

Anthony Richardson
Zoning Enforcement East Section Planner
County of Los Angeles Department of Regional Planning
900 S. Fremont Ave
Alhambra, CA 91803

Jose Reynoso
Environmental Health Specialist III
County of Los Angeles Public Health Solid Waste Management Program
750 S Park Avenue
Pomona, CA 91766

Karen Height
Gateway Cities Council of Governments
16401 Paramount Boulevard
Paramount, CA 90723

Truc Dever
General Manager
Greater Los Angeles County Vector Control District
12545 Florence Ave.
Santa Fe Springs, CA 90670

Charles Boehmke
Department Head - Solid Waste Management
Los Angeles County Sanitation District
1955 Workman Mill Rd.
Whittier, CA 90601

Sheriff John L. Scott
Los Angeles County Sheriff's Department
4700 Ramona Blvd
Monterey Park, CA 91754

Julie Moore
Transportation and Planning Deputy
Office of Los Angeles County Supervisor Don Knabe, District 4
822 Kenneth Hahn Hall of Administration 500 West Temple Street
Los Angeles, CA 90012

Enrique Casas
Regional Water Quality Control Board Land Disposal Unit
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Advisor Derrick Alatorre
Assistant Deputy Executive Officer/Public
South Coast Quality Management District
Legislative & Public Affairs
21865 Copley Drive
Diamond Bar, CA 91765

Naveen Berry
Manager of Rules/Area Sources
South Coast Quality Management District
Planning, Rule Development & Area Studies
21865 Copley Drive
Diamond Bar, CA 91765

Joe Cassmassi
Manager
South Coast Quality Management District
Planning, Rule Development & Area Studies
21865 Copley Drive
Diamond Bar, CA 91765

Carol Gomez
Manager of Transportation Programs
South Coast Quality Management District
Planning, Rule Development & Area Studies
21865 Copley Drive
Diamond Bar, CA 91765

6.5 Other Stakeholders

Matthew Keim
BNSF Railway
740 East Carnegie Drive
San Bernardino, CA 92408

Walter Smith
BNSF Railway
740 East Carnegie Drive
San Bernardino, CA 92408

LaDonna V. DiCAmillo
Regional AVP, State Govt. Affairs
BNSF Railway
Community Issues for So. California
One World Trade Center, Ste. 1680
Long Beach, CA 90831

Trini Jimenez
Director, State Govt. Affairs
BNSF Railway
Community Issues for So. California
One World Trade Center, Ste. 1680
Long Beach, CA 90831

Lisa Tanaka O'Malley
South Coast Quality Management District Local Government/Outreach & Education
21865 Copley Drive
Diamond Bar, CA 91765

Don P. Maddy
Executive Director, State Govt. Affairs
BNSF Railway California
1215 K St., Ste. 1715,
Sacramento, CA 95814

7.0 REFERENCES

AMBIENT Air Quality & Noise Consulting, LLC. (2017b). *Noise Study Report, Rosecrans/Marquardt Grade Separation Project.*

AMBIENT Air Quality & Noise Consulting, LLC. (2018). *Air Quality and Climate Change Study Report, Rosecrans/Marquardt Grade Separation Project.*

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City of Norwalk. (2015, June). *Zoning Map.* Retrieved February 25, 2016, from http://norwalk.org/home/showdocument?id=4430

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Appendix A. SHPO Correspondence, January 19, 2017

Appendix B. FRA Correspondence February 16, 2017

Appendix C. SHPO Concurrence November 22, 2017

Appendix D. CEQA Notice of Exemption

Appendix E. CPUC Nomination

Appendix F. CPUC Nomination Approval