Attachment A: Dublin Boulevard - North Canyons Parkway Extension Project Draft EIR

DRAFT EIR

DRAFT ENVIRONMENTAL IMPACT REPORT

DUBLIN BOULEVARD – NORTH CANYONS PARKWAY EXTENSION PROJECT

SCH No. 2017052047



City of Dublin
100 Civic Plaza
Dublin, CA 94568

March 2019

DUBLIN
CALIFORNIA

This Page Intentionally Left Blank

DRAFT EIR

DRAFT ENVIRONMENTAL IMPACT REPORT

Dublin Boulevard – North Canyons Parkway Extension Project

City of Dublin
100 Civic Plaza
Dublin, CA 94568

March 2019

DUBLIN
CALIFORNIA

This Page Intentionally Left Blank

TABLE OF CONTENTS

Table of Contents i
List of Figures iii
List of Tables iv
List of Appendices v
1 Executive Summary 1-1
1.1 Project Under Review 1-1
1.2 Areas of Controversy 1-1
1.3 Issues to be Resolved 1-3
1.4 Alternatives to the Project 1-3
1.5 Significant Environmental Impacts 1-4
1.6 Summary of Impacts 1-4
2 Introduction 2-1
2.1 Document Organization 2-1
2.2 Lead Agency Determintion 2-2
2.3 Intended Uses of the Draft EIR 2-2
2.4 Scope of the EIR 2-3
2.5 Required Permits and Approvals 2-4
2.6 Documents Incorporated by Reference 2-5
2.7 Commenting on the Draft EIR 2-5
3 Project Description 3-1
3.3 Location and Setting 3-1
3.4 Project Background and History 3-3
3.5 Project Components 3-11
3.6 Project Objectives 3-43
4 Introduction to Environmental Analysis 4-1
4.1 Environmental Assessment Methodology 4-1
4.2 Effects Found not to be Significant 4-3
4.3 Cumulative Impacts 4-5
4.4 References 4-7

5 Environmental Impact Analysis 5-1
5.1 Aesthetics 5.1-1
5.2 Air Quality 5.2-1
5.3 Biological Resources 5.3-1
5.4 Cultural and Tribal Cultural Resources 5.4-1
5.5 Geology and Soils 5.5-1
5.6 Greenhouse Gas Emissions 5.6-1
5.7 Hazards and Hazardous Materials 5.7-1
5.8 Hydrology and Water Quality 5.8-1
5.9 Land Use and Planning 5.9-1
5.10 Noise and Vibration 5.10-1
5.11 Population and Housing 5.11-1
5.12 Public Services 5.12-1
5.13 Recreation 5.13-1
5.14 Transportation and Traffic 5.14-1
5.15 Utilities 5.15-1
5.16 Energy Conservation 5.16-1
6 Alternatives 6-1
6.1 Project Objectives and Environmental Impacts 6-2
6.2 Alternatives to the Project 6-5
6.3 Attainment of Project Objectives 6-7
6.4 Alternatives Considered and Rejected 6-8
6.5 Impact Assessment 6-12
6.6 Environmentally Superior Alternative 6-27
7 Other CEQA Considerations 7-1
7.1 Growth Inducement 7-1
7.2 Vehicle Miles Traveled 7-3
7.3 Significant Irreversible Environmental Changes 7-8
7.4 Significant Unavoidable Impacts 7-9
8 EIR Preparers 8-1

LIST OF FIGURES

Figure 3-1 Regional Location and Project Alignment 3-2
Figure 3-2 Planning Areas 3-5
Figure 3-3a Surrounding Land Use 3-7
Figure 3-3b Surrounding Land Use 3-8
Figure 3-4 General Plan Land Use 3-10
Figure 3-5a Proposed Improvements 3-15
Figure 3-5b Proposed Improvements 3-17
Figure 3-6 Proposed Improvements – New Croak Road Intersection 3-19
Figure 3-7a Operational Footprint 3-21
Figure 3-7b Operational Footprint 3-23
Figure 3-8 Operational Footprint – New Croak Road Intersection 3-25
Figure 3-9 Typical Sections 3-29
Figure 3-10 Typical Sections 3-31
Figure 3-11 Project Construction 3-39
Figure 3-12 Dublin Truck Routes 3-41
Figure 3-13 Livermore Truck Routes 3-42
Figure 5.1-1 Visual Impact Study Area 5.1-8
Figure 5.1-2 Key Viewpoints 5.1-9
Figure 5.1-3 Visual Simulations 5.1-20
Figure 5.1-4 Visual Simulations 5.1-21
Figure 5.2-1 Sensitive Receptor Locations 5.2-13
Figure 5.3-1 Habitats within Biological Study Area 5.3-9
Figure 5.4-1 Geologic Time 5.4-10
Figure 5.7-1 Current and Corrected ALUCP Zones and Boundaries 5.7-11
Figure 5.10-1 Noise Measurement Locations 5.10-9
Figure 5.13-1 Parks and Recreational Facilities 5.13-6
Figure 5.14-1 Study Intersections 5.14-10
Figure 5.14-2 Existing Turn Volumes and Intersection Configurations (2017) 5.14-19
Figure 5.14-3 2025 Turn Volumes and Intersection Configurations 5.14-21
Figure 5.14-4 2040 Turn Volumes and Intersection Configurations 5.14-23

Figure 5.14-5 Existing Plus Project (2017) Turn Volumes and Intersection Configurations 5.14-33
Figure 5.14-6 Noise Measurement Locations 5.14-37
Figure 5.14-7 2040 Plus Project (Cumulative) Turn Volumes and Intersection Configurations 5.14-41
Table 7-1 Regional VMT Study Area 7-7

LIST OF TABLES

Table 1-1 Areas of Concern Identified During Public Scoping Period 1-2
Table 1-2 Summary of Impacts and Mitigation Measures 1-5
Table 2-1 Required Permits and Approvals 2-4
Table 3-1 Permanent Right-of-Way Acquisitions 3-35
Table 3-2 Anticipated Construction Activities and Depth of Excavation 3-36
Table 3-3 Temporary Construction Easements 3-37
Table 4-1 Present and Reasonably Foreseeable Projects 4-7
Table 5.2-1 Federal and State Air Quality Standards 5.2-4
Table 5.2-2 Bay Area Air Basin Attainment Status 5.2-12
Table 5.2-3 BAAQMD Air Quality Significance Thresholds 5.2-15
Table 5.2-4 Construction Period Emissions 5.2-20
Table 5.2-5 Daily Project Operational Emissions 5.2-20
Table 5.2-6 Maximum Community Risk from Construction Activities 5.2-22
Table 5.2-7 Maximum Community Risk from Project Operations 5.2-22
Table 5.3-1 EACCS Focal Habitat and Species Applicable to the Project 5.3-5
Table 5.3-2 Special-status Plants and Wildlife Considered Present in the BSA 5.3-15
Table 5.3-3 EACCS Avoidance and Minimization Measures and General Measures 5.3-25
Table 5.3-4 Project Impacts to Section 404 Aquatic Resources 5.3-46
Table 5.5-1 Regional Fault Summary 5.5-10
Table 5.6-1 Project GHG Emissions 5.6-12
Table 5.7-1 EDR Record Search Results 5.7-7
Table 5.8-1 Beneficial Uses – Cottonwood Creek and Arroyo Mocho 5.8-7
Table 5.9-1 Land Use Policy Consistency 5.9-11
Table 5.10-1 Typical A-Weight Noise Levels 5.10-5

Table 5.10-2 Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels 5.10-6
Table 5.10-3 Summary of Short-Term Noise Measurement Data 5.10-8
Table 5.10-4 Summary of Long-Term Noise Measurements 5.10-10
Table 5.10-5 Noise Levels by Construction Activity at 100 feet 5.10-16
Table 5.10-6 Existing and Future Traffic Noise Levels 5.10-19
Table 5.10-7 Vibration Source Levels for Construction Equipment at 25 feet 5.10-20
Table 5.11-1 2010-2017 Population and Household Growth 5.11-5
Table 5.11-2 Projected Population and Household Growth (2040) 5.11-5
Table 5.11-3 Housing Stock Growth 5.11-5
Table 5.13-1 Public Parks within 2 Miles of Project Site 5.13-7
Table 5.14-1 Intersections Level of Service Definitions 5.14-14
Table 5.14-2 Intersection Level of Service: Existing, 2025 No Project, 2040 No Project 5.14-18
Table 5.14-3 Existing Plus Project Intersection Level of Service 5.14-30
Table 5.14-4 2025 Plus Project Intersection Level of Service 5.14-35
Table 5.14-5 2040 Plus Project Intersection Level of Service 5.14-40
Table 5.15-1 Public Utility Providers 5.15-9
Table 5.16-1 Projected Construction Energy Consumption 5.16-8
Table 5.16-2 Annual Projected Direct Energy Consumption - Regional 5.16-10
Table 6-1 Comparison of Project Alternatives 6-6
Table 6-2 Project Alternatives Considered but Rejected 6-9
Table 6-3 Comparison of Impacts between Project Alternatives 6-30
Table 7-1 Regional VMT Comparison 7-5

LIST OF APPENDICES

Appendix A – NOP and Scoping Comments

Appendix B - Detailed Project Alignment

Appendix C- Air Quality and Greenhouse Gas Assessment

Appendix D - Transportation Impact Assessment (TIA)

Appendix E - Biological Resources Report

Appendix F - Geotechnical Feasibility Study

Appendix G - Phase I Environmental Site Assessment Report (ESA)

Appendix H - Hydrology and Water Quality

Appendix I - Noise and Vibration Assessment

Appendix J - Energy Report

1 EXECUTIVE SUMMARY

This Draft Environmental Impact Report (EIR) has been prepared by the City Dublin (Dublin) as the Lead Agency, in conformance with the California Environmental Quality Act (CEQA), to inform decision makers and the general public of the environmental impacts of the Dublin Boulevard – North Canyons Parkway Extension Project (Project). The Project would include the extension of Dublin Boulevard eastward from Dublin to the western boundary of the City of Livermore (Livermore).

Section 15123 of the CEQA Guidelines requires an EIR summary to identify the following: (1) each significant impact with proposed mitigation measures and alternatives that would reduce or avoid that impact; (2) areas of controversy known to the lead agency, including issues raised by agencies and the public; and (3) issues to be resolved, including a choice among alternatives and whether or how to mitigate the significant impacts. Pursuant to CEQA Section 15123, this executive summary includes a summary of the significant impacts, mitigation measures, areas of controversy, and alternatives to the Project.

1.1 PROJECT UNDER REVIEW

The Project would include the extension of Dublin Boulevard approximately 1.5 miles eastward. The roadway extension would start from the current terminus of Dublin Boulevard at the Dublin Boulevard/Fallon Road intersection in Dublin and would end at the Doolan Road/North Canyons Parkway intersection along the boundary of Alameda County (County) and Livermore. The site would include areas of eastern Dublin and the County. The roadway extension would include four to six travel lanes and bicycle and pedestrian facilities (i.e., shared pathways, sidewalks, and bike lanes). Beginning at Fallon Road, the roadway extension would have six travel lanes (three in each direction). Continuing eastward, the roadway extension would transition to four travel lanes (two in each direction) before or at the proposed intersection with Croak Road. From Croak Road to Doolan Road, the roadway extension would remain in a four lane configuration.

The operational footprint for the Project, including the roadway, sidewalks, intersections, and land acquired for right-of-way is estimated at 29 acres. Future average daily traffic (ADT) along the roadway extension is projected to be 17,000 to 19,000 vehicles per day.

1.2 AREAS OF CONTROVERSY

Upon preliminary review of the Project and a determination that an EIR would be required, Dublin published a Notice of Preparation (NOP) on May 18, 2017 to inform the public and responsible agencies that a Draft EIR was being prepared. The NOP was circulated for a 30-day scoping period that concluded on June 19, 2017. Dublin considered comments received in response to the NOP in determining the final scope and content of this Draft EIR, as addressed under each environmental topic in **Chapter 5.0, Environmental Impact Analysis**. All relevant public scoping comments received during the public comment period are addressed and/or incorporated into this Draft EIR.

Comments received on the NOP primarily included concerns related to potential impacts to biological resources, changes to site hydrology, and potential increases in traffic congestion. **Table 1-1** lists the environmental topic areas that were brought up by the public and agencies, during the scoping period and provides a summary of the particular concerns related to each topic.

Table 1-1 Areas of Concern Identified During Public Scoping Period

Environmental Topic Area	Areas of Concern
Biological Resources	▪ Potential impacts on protected plant species, plant communities, wildlife species, habitat, and wetlands resulting from Project construction, long-term operation, and growth inducement, including associated avoidance, minimization, and mitigation measures ▪ Potential impacts on wildlife corridors ▪ Potential direct or indirect impacts on wetlands and vernal pools in the Project site, and impacts on the broader watershed that support protected species and habitats ▪ Consistency with the East Alameda County Conservation Strategy (EACCS), including application of relevant mitigation and minimization measures
Cultural Resources	▪ Ensuring the requirements of Senate Bill 18 and Assembly Bill 52 are implemented, including required and recommended steps for completing consultation ▪ Recommendations that a CHRIS search and Sacred Lands File search be completed
Hydrology	▪ The potential for the Project to change the hydrology of the Project site and surrounding area, resulting in flooding or indirect changes to habitat for protected species
Land Use and Growth	▪ Concerns that the urban growth limits of Dublin, Alameda County (County), and Livermore would change or be disregarded as a result of the Project ▪ Whether the Project would indirectly allow for development of County lands along the alignment, which are zoned for Resource management and Large Parcel Agriculture use ▪ Whether the Project would indirectly or cumulatively result in the decline of agricultural use on land within the County adjacent to the Project ▪ Whether the Project would encourage development in eastern Dublin
Population and Housing	▪ Concerns the Project would indirectly result in population increase as a result of future new development in eastern Dublin
Transportation and Traffic	▪ Requests for the Project to include bicycle and pedestrian facilities, and specifically that bike lanes be protected from vehicles ▪ Request that the Project include transit facilities (such as bus stops and park-and-ride areas) and transit service ▪ Concerns that the Project would increase local congestion in Dublin and Livermore, and encourage development in eastern Dublin ▪ Concern that Bay Area Rapid Transit System (BART) overflow parking could affect the Project
Utilities	▪ The opportunity and necessity to include utility lines as a part of the Project ▪ A recommendation to use a joint trench approach for the placement of utilities within the operational footprint of the Project

Source: Circlepoint, 2019

1.3 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires the summary section of an EIR to identify any "issues to be resolved including the choice among alternatives and how to mitigate significant effects." The following issues will be resolved by Dublin in its decision process, in coordination with Livermore, the County, and the Alameda County Transportation Commission as Responsible Agencies:

- A determination on which alternative will move forward
- Continued coordination on implementation and timing of mitigation measures to address significant traffic impacts at intersections outside of Dublin's jurisdiction
- Detailed mitigation planning for biological resources, including whether mitigation for direct and indirect impacts to biological resources will be addressed through mitigation bank credits, project-specific mitigation, or a combination of these approaches

1.4 ALTERNATIVES TO THE PROJECT

CEQA Guidelines Section 15126 and Section 15126.6 require the Lead Agency to consider alternatives to the project that meet the project's basic objectives, while avoiding or reducing significant impacts. CEQA also requires consideration of the No Project Alternative and identification of an environmentally superior alternative. The environmentally superior alternative is discussed in detail **in Chapter 6.0, Alternatives**. This Draft EIR considers the potential alternatives to the Project:

- **No Project Alternative 1**: The existing conditions at the Project site would remain unchanged.
- **Aerial Structure – Alternative 2**: This alternative contemplates reducing the Project's indirect impacts on biological resources by implementing an elevated, aerial roadway instead of an at-grade roadway.

NO PROJECT ALTERNATIVE 1

Under No Project Alternative 1, the existing conditions at the Project site would not change. The Project site and surrounding area currently consists of primarily undeveloped grazing ranchland and open space, with intermittent agricultural structures and outbuildings. Improvements to the agricultural lands generally consist of private paved and unpaved roads used to access private property, fences, barns, corrals, wells, water tanks, and various outbuildings. These existing uses would remain in place, and no construction activities would occur under No Project Alternative 1.

AERIAL STRUCTURE – ALTERNATIVE 2

Alternative 2 has been developed to lessen impacts associated with biological resources and cultural resources. Potential impacts to biological and cultural resources would primarily result from large areas of grading required for an at-grade roadway, direct impacts to habitat areas from the permanent at-grade roadway footprint, and indirect impacts to habitat from the placement of

an at-grade roadway within a large habitat area (which would restrict the north-south movement of protected wildlife species).

Alternative 2 would include an elevated roadway extension generally following the same alignment of the Project. Alternative 2 would use an aerial structure and piers similar to overpasses and roadway bridges to traverse the area between Fallon Road and Doolan Road. The roadway extension would include pedestrian and bicycle facilities similar to those described for the Project. Proposed utility extensions and hydromodification controls would need to be contained within the aerial structure.

1.5 SIGNIFICANT ENVIRONMENTAL IMPACTS

The Project would result in significant unavoidable impacts related to traffic. **Table 1-2** below identifies all environmental impacts that would result from the Project and the level of significance after mitigation. Some traffic impacts resulting from the Project have been determined to be significant and unavoidable because mitigation to reduce these impacts would require physical changes to intersections and signal timing changes in areas outside of Dublin's jurisdiction. Dublin and Livermore are continuing to work together to identify the funding and timing for mitigation to reduce these significant impacts.

1.6 SUMMARY OF IMPACTS

Table 1-2 provides a summary of the significant impacts of the Project and mitigation measures that would reduce significant impacts. The table is arranged in four columns: 1) significant impacts; 2) level of significance without mitigation; 3) mitigation measures; and 4) level of significance after mitigation. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific sections within **Chapter 5.0, Environmental Impact Analysis**.

Table 1-2 Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Aesthetics			
Impact AES-1: Implementation of the Project may result in degradation of the visual quality of the scenic hills to the north.	Significant	**Mitigation Measure AES-1**: Construction areas disturbed for equipment access and staging will be returned to their pre-Project condition. This may include minor regrading or sweeping and revegetation. Graded areas to the north of the Project site will be vegetated with an erosion control seed mix to minimize the visual change to the hillside and ensure that the graded areas blend with the surrounding natural hillside environment to the extent feasible.	Less than Significant
Impact AES-2: Retaining walls implemented as a part of the Project may disrupt the visual setting, thereby degrading visual quality.	Significant	**Mitigation Measure AES-2**: In coordination with Dublin, the County, and Livermore, retaining walls will be designed to include the following components: ▪ To reduce the visual impact of new retaining walls, aesthetic treatments consisting of color, texture and/or patterning will be applied to reduce visual impacts. The aesthetic treatment shall be context sensitive to the location. If concrete drainage ditches are required along the top of and behind the retaining walls, the ditch shall be stained to match the overall color of the wall. Aesthetic treatments will also reduce glare and deter graffiti, and shall be developed during the final design. ▪ Where required, retaining wall cable safety railing should have black or brown vinyl cladding to make them less visually obtrusive and help them blend with the setting. ▪ Concrete safety-shaped barriers should be sand blasted to a medium finish to minimize glare and deter graffiti. Barriers at the bottom of retaining walls are required to be stained or are required to match the overall wall color through techniques such as staining.	Less than Significant
Impact AES-3: The Project would include trees along the roadway, introducing new vertical elements that could compromise the	Significant	**Mitigation Measure AES-3**: All landscaping and new plantings along the Dublin Boulevard Extension must be selected and implemented to maintain the eligibility of I-580 as a State Scenic Highway. The final	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
eligibility of I-580 as a State Scenic Highway.		selection of plantings must ensure that new planting would not substantially impede views of the landscape. Landscaping plans will be coordinated with Caltrans to ensure compatibility.	
Impact AES-4: Project construction would include new sources of temporary night time lighting and glare, which could affect drivers traveling adjacent to the Project construction area.	Significant	**Mitigation Measure AES-4**: Appropriate light and glare screening measures, including the use of downward cast lighting, will be used in construction, staging, and laydown areas.	Less than Significant
Air Quality			
Impact AIR-1: Construction of the Project would result in temporary air quality impacts related to fugitive dust.	Significant	**Mitigation Measure AQ-1**: Implement the most current BAAQMD best management practices at the time of construction to control dust and exhaust. Best management practices issued by BAAQMD change over time, and may include but are not limited to: During any construction period ground disturbance, implement the following best management practices to control dust and exhaust: ▪ All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. ▪ All haul trucks transporting soil, sand, or other loose material off-site shall be covered. ▪ All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. ▪ All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. ▪ All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. ▪ Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations CCR). Clear signage shall be provided for construction workers at all access points. ▪ All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.	
Less than Significant Impact: Construction equipment emissions	Less than Significant	**Mitigation Measure AQ-2:** All off-road diesel-powered construction equipment greater than 50 horsepower shall meet United States Environmental Protection Agency Tier 4 interim off-road emissions standards to the extent feasible.	Less than Significant
Biological Resources			
Impact BIO-1.1: Project construction would result in 0.45 acres of direct and indirect temporary impacts to Congdon's tarplant and its seedbanks, and seed banks of San Joaquin spearscale or prostrate vernal pool navarretia, if these are present within the construction footprint.	Significant	**Mitigation Measure BIO-1**: The following measures shall be implemented to avoid and minimize impacts to special-status plant species and to the other special-status plants that have seed banks that may overlap the construction footprint: ▪ To the extent feasible, Project construction will avoid all occupied habitat for Congdon's tarplant (which is also potential seed bank area for San Joaquin spearscale or prostrate vernal pool navarretia) plus a 50-foot buffer. ▪ The mapped areas of Congdon's tarplant will be clearly shown on all construction plans. ▪ To avoid special-status plants, a buffer of at least 50 feet will be clearly delineated from the active work areas through installation of environmental sensitive area fencing to prevent inadvertent access. The work area for utility line	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		removal will be bound by environmental sensitive area fencing. A qualified plant ecologist shall oversee fencing placement. ▪ Work to remove the existing utility line for relocation within the Project site will proceed using the least impactful equipment necessary to minimize crushing, soil compaction, and erosion. **Mitigation Measure BIO-2**: The general avoidance and minimization measures detailed in the EACCS and the associated Programmatic Biological Opinion (PBO) shall be implemented. Implementation of the General Minimization Measures listed in the PBO for the EACCS will further avoid impacts and are required for all EACCS-compliant projects. These avoidance and minimization measures include general measures that apply to all work, activity-specific measures designed to address anticipated effects of certain work activities or particular types of resources, and standard best management practices. Specifically, the Project would implement EACCS Measure GEN-1 through GEN-17, and PBO General Minimization Measure 1 through 19. These measures are listed in Table 5.3-3. **Mitigation Measure BIO-3**: To track recovery of temporarily impacted special-status plant populations, the actual area of impacts will be mapped and monitored for at least three years by a qualified plant ecologist. Prior to Project construction, an area to the south, outside the construction footprint and of a similar size and similar density of Congdon's tarplant to the area to be impacted, will be identified and used as a reference area. Objectives during the monitoring will include removing any weed populations that may have become introduced due to disturbance, and to encourage grazing that benefits Congdon's tarplant. By year three, if the Congdon's tarplant density within the impacted area is not at least 50 percent of the reference area, or if there is more than 5 percent cover of Cal-Invasive Plant Council (IPC) high or moderate ecological impact invasive plants within the recovery area (not including non-native	

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		grasses), the portion of the population impacted by the Project will be considered permanently impacted and the Project will then be required to mitigate for the impacts as per the EACCS, which would require preservation in perpetuity and management per EACCS guidelines of a similar-sized area and number of plants at a 5:1 ratio (number of new plant individuals:number of impacted plant individuals).	
Impact BIO-1.2: The Project could result in the direct loss and indirect disturbance of California red-legged frogs and their habitat.	Significant	**Mitigation Measure BIO-4**: The Project will incorporate the following species-specific avoidance and minimization prescribed by the EACCS Measure AMPH-2: ▪ A qualified biologist will conduct pre-construction surveys prior to activities. If individuals are found, work will not begin until they are moved out of the construction zone to a USFWS/CDFW approved relocation site. ▪ A USFWS/CDFW-approved biologist shall be present for initial ground disturbing activities. ▪ If the work site is within the typical dispersal distance of potential breeding habitat, barrier fencing will be constructed around the worksite to prevent amphibians from entering the work area. Contact USFWS/CDFW for latest research on this distance for species of interest. Barrier fencing will be removed within 72 hours of completion of work. The Project site is known to be within dispersal distance of potential breeding habitat for California red-legged frog and California tiger salamander, and therefore barrier fencing consisting of silt fence and orange construction zone fencing will be installed on the northern and southern boundaries of the Project site where construction activities border grassland habitat. The barrier fencing will be at least 3 feet high and the lower 6 inches of the fence will be buried in the ground to prevent animals from crawling under. The remaining 2.5 feet will be left above ground to serve as a barrier for animals moving on the ground surface.	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		▪ No monofilament plastic will be used for erosion control. ▪ Construction personnel will inspect open trenches in the morning and evening for trapped amphibians. ▪ A qualified biologist possessing a valid FESA Section 10(a)(1)(A) permit or USFWS-approved under an active biological opinion, will be contracted to trap and to move amphibians to nearby suitable habitat if amphibians are found inside a fenced area. No trapping, such as the use of upland traplines for California red-legged frogs or California tiger salamanders, is proposed for this Project. However, a biologist approved by the USFWS under the Project's Biological Opinion and by the CDFW under the Project's Incidental Take Permit will survey for and relocate any individuals found within the impact area. The applicant will prepare a relocation plan for the Project to be reviewed and approved by the USFWS and CDFW prior to the onset of construction. ▪ Work within suitable habitat will be avoided from 15 October (or the first measurable fall rain of 1 inch or greater) to 1 May. **Mitigation Measure BIO-5**: Compensatory mitigation for the permanent direct and indirect loss of California red-legged frog and California tiger salamander habitat would be required in accordance with the measures outlined in Tables 3-7 and 3-8 of the EACCS. Mitigation will take the form of purchase of mitigation credits from a mitigation bank or Project-specific mitigation, or other mitigation plan as approved by the USFWS and CDFW in the Project's permits. The ratio of mitigation to impact varies with the location of the proposed mitigation, and would be 2.5:1 at minimum, but may be as high as 4:1 (acreage of new habitat:acreage of impacted habitat).	

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact BIO-1.3: Project construction could result in the direct loss and indirect disturbance of California tiger salamanders and their habitat.	Significant	**Mitigation Measures BIO-2**, **BIO-4**, and **BIO-5** (discussed above)	Less than Significant
Impact BIO-1.4: The Project would result in permanent and temporary impacts to foraging habitat for tricolored blackbird.	Significant	**Mitigation Measure BIO-6**: If dense stands of cattails regenerate within the proposed construction footprint prior to Project construction, the Project shall implement the following measures to avoid impacts to tricolored blackbird nesting colonies: ▪ If work is initiated within the nesting season (i.e., February 1 to August 31), then a preconstruction survey for an active nesting colony of tricolored blackbirds shall be conducted within all perennial marsh and seasonal wetland habitats on and within 250 feet of the construction footprint. ▪ (EACCS Measure BIRD-3): If an active nest colony is identified within 250 feet of the construction footprint, work within 250 feet of the colony will be conducted outside of the nesting season (March 15 to September 1).	Less than Significant
Impact BIO-1.5: Project construction may result in mortality to individual western pond turtles and their eggs.	Significant	**Mitigation Measures BIO-2** and **BIO-4** (discussed above)	Less than Significant
Impact BIO-1.6: Project construction may result in mortality to individual San Joaquin kit foxes, should they be present within the construction footprint.	Significant	**Mitigation Measure BIO-7**: A qualified biologist shall conduct a preconstruction survey for San Joaquin kit fox and their dens prior to the start of construction activities. In the event that the species is detected during the preconstruction survey, avoidance of impacts to occupied kit fox dens will be implemented per the Standardized Recommendations for Protection of The San Joaquin Kit Fox Prior To Or During Ground Disturbance (USFWS 1999) and EACCS Measure MAMM-1 (outlined below): ▪ If potential dens are present, their disturbance and destruction will be avoided. ▪ If potential dens are located within the construction footprint and cannot be avoided during construction, a qualified	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		biologist will determine if the dens are occupied or were recently occupied using methodology coordinated with the USFWS and CDFW. If unoccupied, the qualified biologist will collapse these dens by hand in accordance with USFWS procedures (USFWS 1999). ▪ Exclusion zones will be implemented following USFWS procedures (USFWS 1999) or the latest USFWS procedures available at the time. The radius of these zones will follow current standards or the following standards listed in the PBO for the EACCS: ▪ Potential Den – A total of 4-5 flagged stakes will be placed 50 feet from the den entrance to identify the den location; ▪ Known Den – Orange construction barrier fencing will be installed between the construction work area and the known den site at a minimum distance of 100 feet from the den. The fencing will be maintained until all construction-related disturbances have been terminated. At that time, all fencing will be removed to avoid attracting subsequent attention to the den; ▪ Natal or Pupping Den – The USFWS will be contacted immediately if a natal or pupping den is discovered at or within 200 feet from the boundary of the construction area. ▪ Pipes will be capped and trenches will contain exit ramps to avoid direct mortality while construction areas are active.	
Impact BIO-1.7: Project construction could result in the direct loss and indirect disturbance of burrowing owls and their habitat.	Significant	**Mitigation Measures BIO-2** and **BIO-5** (discussed above) **Mitigation Measure BIO-8**: A qualified biologist shall conduct preconstruction surveys for nesting burrowing owls prior to construction. As feasible, all suitable habitat within 0.5 mile of the Project site shall be surveyed for nesting burrowing owls. The survey should be conducted during the burrowing owl's nesting season, defined by the EACCS as March 15 to September 1. This survey shall consist of two or more site visits, with the biologist examining all	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		potential burrows within 0.5 mile, as access permits, for signs of nesting burrowing owls (i.e., owls, pellets, feathers, and/or whitewash). Should these surveys identify burrowing owls on or near the BSA, avoidance of disturbance to the burrow will be conducted per EACCS Measure BIRD-2, outlined below: ▪ If an active burrowing owl nest is identified near a proposed work area, work will be conducted outside of the nesting season (March 15 to September 1). ▪ If an active nest is identified near a proposed work area and work cannot be conducted outside of the nesting season, a qualified biologist will establish a no-activity zone. The no activity zone will be large enough to avoid nest abandonment and will at minimum be 250-foot radius from the nest. ▪ If burrowing owls are present within the construction footprint during the non-breeding period, a qualified biologist will establish a no-activity zone of at least 150 feet. ▪ If an effective no-activity zone cannot be established in either case, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, and the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls. **Mitigation Measure BIO-9**: The EACCS identifies burrowing owl nesting habitat as suitable habitat within 0.5 mile of a documented nest occurrence during the previous 3 years, and it recommends compensatory mitigation in the event of any impacts to such habitat. In the event that burrowing owls are found to be nesting on or within 0.5 mile of the Project site during preconstruction surveys, or if owls need to be evicted from burrows (which can only occur when they are not actively nesting) to implement the Project, compensatory mitigation will be necessary to mitigate for impacts on occupied	

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		burrowing owl habitat. If the California red-legged frog/California tiger salamander habitat mitigation provides suitable habitat for burrowing owls as well, then no additional mitigation for impacts to burrowing owls would be necessary. Otherwise, additional habitat mitigation will be necessary, in the form of purchase of mitigation credits from a mitigation bank or Project-specific mitigation in an area that supports such habitat. The EACCS prescribes mitigation ratios of 3:1 to 3.5:1 (acreage of new habitat:acreage of impacted habitat), depending on the location of the mitigation site.	
Impact BIO-1.8: The Project could result in the direct loss and indirect disturbance of American badgers and their habitat, should they be present within the construction footprint.	Significant	**Mitigation Measure BIO-2** (discussed above) **Mitigation Measure BIO-10**: A qualified biologist shall conduct preconstruction surveys for denning American badgers prior to construction. As feasible, all suitable habitat within 0.5 mile of the Project site shall be surveyed for American badgers. The survey will be conducted for the area in which the qualified biologist can access. This survey can be conducted concurrently with the burrowing owl survey outlined in Mitigation Measure BIO-8. This survey shall consist of two or more site visits, with the biologist examining all potential burrows within 0.5 mile, as access permits, for American badger dens. Should these surveys identify American badgers on or near the BSA, avoidance of disturbance to the den will be conducted per EACCS Measure MAMM-1 outlined in Mitigation Measure BIO-7.	Less than Significant
Impact BIO-1.9: Project construction would result in the loss of foraging habitat and prey habitat for bats, and could temporarily alter foraging patterns in the immediate vicinity. Additionally, Project construction could indirectly result in mortality of bats and their young, if present within the construction footprint.	Significant	**Mitigation Measure BIO-2** (discussed above) **Mitigation Measure BIO-11**: A qualified bat biologist will conduct a pre-construction/pre-demolition survey for roosting bats within 15 days prior to the commencement of construction activities within 400 feet of trees or buildings providing potential roosting habitat. The survey will focus on detecting bats that may be day-roosting in trees within or immediately adjacent to (i.e., within 100 feet of) the impact areas. If suitable roost sites are found and a visual survey is not adequate to determine presence or absence of bats, acoustical	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		equipment will be used to determine occupancy. If no evidence of bat roosts is found, any buildings or trees that contain potential roosting sites and are proposed for removal will be removed within 15 days following completion of the survey. If a day roost is found during the maternity season (1 April until the young are flying, typically by 31 August) within 400 feet of the impact areas, a qualified bat biologist (in consultation with the CDFW) will determine the width of a buffer that will be established around the roost. No construction-related activity shall occur within the buffer during the maternity season. Typical buffers recommended between intense construction activity and pallid bat roosts are: 90 feet for motor vehicles and foot traffic, 120 feet for heavy equipment, 150 feet for trenching, 250 feet for idling equipment or generators, 250 feet for shielded lighting, and 400 feet for unshielded lighting. No tree or structure containing a maternity roost will be removed or otherwise physically disturbed during the maternity season. Outside the maternity season, a day roost may be removed after individual bats are safely evicted under the direction of a qualified bat biologist. Eviction will occur between 1 September and 31 March, but will not occur during long periods of inclement or cold weather (as determined by the bat biologist) when prey are not available or bats are in torpor. If feasible, one-way doors will be used to evict bats. If use of a one-way door is not feasible, or the exact location of the roost entrance is not known, the roosts that need to be removed shall first be disturbed by the bat biologist. Such disturbance will occur at dusk to allow bats to escape during the darker hours. These buildings or trees shall then be removed the following day. All of these activities will be performed under the supervision of the bat biologist. **Mitigation Measure BIO-12**: Compensatory mitigation for impacts on active bat roosts would not be warranted unless a maternity roost of pallid bats or Townsend's big-eared bats will be lost. In this instance, the provision of one or more alternate roost structures would be appropriate to reduce impacts on special-status bat species.	

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		If a pallid bat or Townsend's big-eared bat day roost is located within a tree or building to be removed, an alternative bat roost structure will be provided by the City of Dublin and its partners. The design and placement of this structure will be determined by a bat biologist, in consultation with the CDFW, based on the location of the original roost and the habitat conditions in the vicinity. The roost structure will be built to specifications as determined by a bat biologist and CDFW, or it may be purchased from an appropriate vendor. The structure will be placed as close to the impacted roost site as feasible. This bat structure will be erected at least one month prior to removal of the original roost structure. A bat biologist will monitor this structure during the breeding season for up to two years following completion of the Project, or until it is found to be occupied by bats (whichever occurs first), to provide information for future projects regarding the effectiveness of such structures in minimizing impacts to bats.	
Impact BIO-1.10: Project construction could result in take of a special-status individual bird, egg, or nest, should an individual be foraging or nesting within the construction footprint during construction.	Significant	**Mitigation Measure BIO-2** (discussed above) **Mitigation Measure BIO-13**: Project implementation shall include the following measures to comply with the MBTA and California Fish and Game Code and avoid death or injury of special-status birds or their active nests, eggs, or young. ▪ *Avoidance of the Nesting Bird Season.* If feasible, Project activities will be scheduled to avoid the avian nesting season. If such activities are scheduled to take place outside the nesting season, all impacts on nesting birds, including raptors, protected under the MBTA and California Fish and Game Code, would be avoided. The nesting season for most birds in Alameda County typically extends from February 1 through August 31, although in most years, a majority of birds have finished nesting by August 1. ▪ *Vegetation Removal during the Non-Nesting Season.* If Project activities will not be initiated until after the start of the	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		nesting season, potential nesting substrate (e.g., bushes, trees, grasses, and other vegetation) that is scheduled to be removed may be removed prior to the start of the nesting season (e.g., prior to 1 February) to reduce the potential for initiation of nests. If it is not feasible to schedule vegetation removal during the nonbreeding season, or where vegetation cannot be removed (e.g., in areas immediately adjacent to the site), then pre-construction surveys for nesting birds will be conducted as described below. Sensitive and/or regulated wetland vegetation would not be removed prior to construction, if feasible. ▪ *Pre-construction/Pre-disturbance Surveys for Nesting Birds.* If it is not possible to schedule Project activities between September 1 and February 1, then a qualified biologist will conduct pre-construction surveys for nesting birds to ensure that no nests will be disturbed during Project implementation. These surveys will be conducted no more than one week prior to the initiation of Project activities. During this survey, a qualified biologist will inspect all potential nesting habitats (e.g., trees, shrubs, grasslands, and structures) within 300 feet of impact areas for raptor nests and within 100 feet of impact areas for nests of non-raptors. Surveys for burrowing owls and nesting golden eagles will extend out to 0.5 mile from the Project site (to the extent that such areas are accessible) ▪ *Buffers around Active Nests*. If an active nest (i.e., a nest with eggs or young, or any completed raptor nest attended by adults) is found sufficiently close to the construction footprint to be disturbed by these activities, the biologist, in consultation with CDFW, will determine the extent of a disturbance-free buffer zone to be established around the nest to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during Project implementation. Typical buffers are 0.25 mile (or 0.5-mile line-of-sight) for golden eagles, 250 feet for burrowing	

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		owls, 300 feet for other raptors, and 50-100 feet for non-raptors. Because the majority of the site is already subject to disturbance by vehicles and pedestrians, activities that will be prohibited from occurring within the buffer zone around a nest will be determined on a case-by-case basis by a qualified biologist. In general, activities prohibited within such a buffer while a nest is active will be limited to new construction-related activities (i.e., activities that were not ongoing when the nest was constructed) involving significantly greater noise, human presence, or vibrations than were present prior to nest initiation. ▪ *Nest Deterrence.* If necessary to avoid impacts to active nests, nest starts may be removed on a regular basis (e.g., every second or third day), starting in late January or early February to prevent active nests from becoming established.	
Impact BIO-1.11: Project construction could result in impacts to migratory bird species, their eggs, or nests, should an individual be foraging or nesting within the construction footprint during construction.	Significant	**Mitigation Measures BIO-2** and **BIO-13** (discussed above)	Less than Significant
Impact BIO-2: The Project may adversely affect riparian habitat and other sensitive natural communities at the Project site, through temporary disturbance during construction and permanent loss of natural areas through conversion to a multi-modal roadway.	Significant	**Mitigation Measures BIO-5** (discussed above) **Mitigation Measure BIO-14**: Project implementation shall include the following measures to reduce riparian habitat impacts: ▪ All riparian areas and riparian trees to be preserved will be clearly depicted on final Project plans. Areas to be avoided shall be indicated and protected at the site using orange sensitive area fencing to ensure inadvertent impacts do not occur. ▪ No equipment will be staged or refueled in the riparian areas along Cottonwood Creek. ▪ All appropriate AMMs listed in the EACCS that would apply to and protect these riparian habitats will be enacted.	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Mitigation Measure BIO-15: The valley oak tree to be avoided during implementation of the Project will be protected with a tree protection zone, developed under the consultation of a qualified, International Society of Arborists-certified arborist. This tree protection zone may be larger than the drip line of the tree, as determined by the qualified arborist, and will be delineated with orange construction fencing. No fill placement, equipment access, or materials stockpiling may occur within the tree protection zone, unless approved by the qualified arborist (for example for crown trimming, if needed). **Mitigation Measure BIO-16**: The permanent loss of riparian habitat types shall be mitigated as described in the EACCS. Mitigation will be provided via preservation, enhancement, and management as per EACCS guidelines. Because all riparian habitats in the construction footprint provide habitat for focal species, the mitigation ratio for the impacts will be at least 2.5:1 (acreage of new habitat: acreage of impacted habitat). Because the wetland and stream habitats all provide dispersal and foraging habitat for California red-legged frog and California tiger salamander, the final mitigation ratio must be as high as the determined EACCS requirements for focal species. Mitigation ratios will vary based on the location and quality of the mitigation lands, which have not been selected yet. Mitigation must be in-kind for mixed riparian woodland impacts but riparian grassland impacts may be mitigated with either grassy or wooded riparian habitat. Temporary impacts to riparian habitat shall be restored in place at a 1:1 ratio through re-establishment of original contours along banks, decompaction of compacted soils where necessary, and seeding with a native seed mix developed by a qualified restoration ecologist and containing species such as alkali barley (Hordeum depressum), meadow barley (Hordeum brachyantherum), purple needlegrass (Stipa purpurea), and/or other native grass and forb species that	

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		occur in the Project vicinity. Temporary impact areas will be monitored for 2 years and the criteria for success will be 75 percent vegetation cover or more compared to pre-Project conditions and no more than 5 percent cover of Cal-IPC-rated moderate and high impact weed species (excluding Cal-IPC-rated annual grasses).	
Impact BIO-3: The Project may adversely affect protected wetlands through temporary placement of construction equipment, construction access, grading, placement of Project fill material, and permanent roadway improvements.	Significant	**Mitigation Measure BIO-5** (described above) **Mitigation Measure BIO-17**: The following measures shall be implemented to reduce aquatic resource impacts: ▪ All wetlands and streams shall be clearly depicted on final Project plans. Areas to be avoided shall be indicated and protected at the site using orange sensitive area fencing to ensure inadvertent impacts do not occur. ▪ Final grading plans shall be developed that minimize grading-related fill and cut in wetlands and streams to the maximum extent feasible to achieve Project goals and improvements. ▪ Work within streams and wetlands would be restricted to the dry season from April 15 to October 15 (or as directed by regulatory permitting agency) to protect water quality. ▪ All appropriate AMMs listed in the EACCS that would apply to and protect these aquatic habitats will be enacted. ▪ No bioswales or other stormwater infrastructure, or non-critical Project elements such as landscaping, will be placed in wetlands or streams. ▪ All temporary fills placed in the Cottonwood Creek low-flow channel for construction access will be clean fills (such as clean rock) of a size that can be fully removed from the low-flow channel and the channel then restored to its former topography. ▪ The Project applicant will implement best management practices (BMPs) as recommended or required by the State	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		or RWQCB to protect water quality. These measures will include, but are not limited to the following: ▪ No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material will be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the US/State or aquatic habitat. ▪ No equipment will be operated in the live stream channel. ▪ Equipment staging and parking areas shall occur within established access areas in upland habitat above the top of bank. ▪ Machinery or vehicle refueling, washing, and maintenance shall occur at least 60 feet from the top-of-bank. Equipment shall be regularly maintained to prevent fluid leaks. Any leaks shall be captured in containers until the equipment is moved to a repair location. A spill prevention and response plan will be prepared prior to construction and will be implemented immediately for cleanup of fluid or hazardous materials spills. ▪ Standard erosion control and slope stabilization measures will be required for work performed in any area where erosion could lead to sedimentation of a waterbody. ▪ The Project will comply with the MRP and General Construction permit to prevent increases in peak flow, erosion, or reduction in water quality for downslope waters. **Mitigation Measure BIO-18**: The permanent loss of waters and wetlands shall be mitigated per the EACCS. Mitigation will be provided via preservation, enhancement, and management as per EACCS guidelines. This may be purchased as bank credits or managed as a Project-specific mitigation site. Because all wetland and stream habitats in the Project site provide habitat for focal species, the mitigation ratio for the impacts will be at least 2.5:1 (acreage of new habitat:acreage of impacted habitat). Because the wetland and stream	

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		habitats all provide dispersal and foraging habitat for California red-legged frog and California tiger salamander, the final mitigation ratio must be as high as the determined EACCS requirements for focal species. The required mitigation ratio will vary based on the location and quality of the mitigation lands, which have not been selected yet. Additionally, compensatory mitigation for wetlands and waters must be provided in-kind (wetlands for wetlands and streams for streams). Temporary impacts to these waters and wetlands will be restored in place at a 1:1 ratio through re-establishment of original contours in stream channels and wetlands, decompaction of compacted soils where necessary, and seeding with a native wetland seed mix developed by a qualified restoration ecologist containing species such as alkali barley and Mexican rush. Temporary impact areas will be monitored for 2 years and the criteria for success will be 75 percent vegetation cover or more compared to pre-Project conditions and no more than 5 percent cover of Cal-IPC-rated moderate and high impact weed species (excluding Cal-IPC-rated annual grasses).	
Impact BIO-4: The Project may interfere with species migration through segmentation of habitat within the BSA and disruption of nesting birds during Project construction.	Significant	**Mitigation Measures BIO-5** and **BIO-13** (described above)	Less than Significant
Impact BIO-5: Without proper mitigation implementing the East Alameda County Conservation Strategy, the Project could conflict with the goals, objectives, and mitigation criteria contained in that strategy.	Significant	**Mitigation Measures BIO-2** through **BIO-10**, **BIO-14**, **BIO-16**, **BIO-17**, and **BIO-18** (described above)	Less than Significant
Cultural and Tribal Cultural Resources			
Impact CUL-1: The Project could result in damage to or destruction of the historic-period archeological resource identified within the construction footprint (Corral	Significant	**Mitigation Measure CUL-1**: The following measures shall be implemented prior to construction of the Project, and during construction of the Project, to ensure known and potential historic-period archeological resources at the Corral Site are properly	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Site), as a result of grading and excavation during construction.		documented and/or collected: ▪ Prior to construction, surface remnants will be documented by a professionally qualified archaeologist with appropriate qualifications in historic-period archaeology. Surface remnants may be collected for further study, at the discretion of the archaeologist. ▪ Prior to construction, recommendations for subsurface investigation outlined in the Archeological Survey Report prepared for the Project shall be implemented. A subsurface testing plan shall be prepared and executed by a professionally qualified archeologist with appropriate qualifications in historic-period archeology. The plan shall allow for, and outline requirements for, the documentation, collection, analysis, and curation of historic artifacts encountered during subsurface testing. ▪ The report shall outline any further recommendations for the site, which may include additional site testing, construction protocols to avoid the destruction of resources on-site through documentation and collection, or other measures. The City of Dublin shall evaluate recommendations of this report and implement measures as feasible to further aid in resource documentation and collection at the site. ▪ In addition to measures provided in the written report, a professionally qualified historic archeologist shall be present on-site when construction activities take place within the resource area. The need for on-site monitoring on a day-to-day basis shall be at the discretion of the historic archeologist. If artifacts or other historic archeological resources associated with the site are encountered during construction, work shall be halted within 25 feet of the discovery until the historic archeologist has evaluated the discovery. The historic archeologist shall determine whether the artifacts and/or resources are significant and warrant documentation and/or recovery, or whether they are not	

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		significant and no further action is warranted. ▪ Any significant artifacts or other historic archeological resources encountered during construction shall be documented, collected, analyzed, and/or curated as appropriate so that their informational, research, and/or scientific value may be preserved. The appropriate treatment of artifacts and historic archeological resources encountered shall be determined by the professionally qualified historic archeologist. ▪ The results of surface resource documentation and subsurface testing shall be documented in a written report prepared by the qualified historic archaeologist and submitted to the City of Dublin.	
Impact CUL-2: The Project could result in damage to or destruction of unidentified buried archeological resources as a result of grading and excavation during construction.	Significant	**Mitigation Measure CUL-2**: If buried archaeological resources are discovered during construction, operations shall stop within 50 feet of the find and a qualified archaeologist shall be consulted to evaluate the resource in accordance with CEQA Guidelines 15064.5. Archeological resources may include, but are not limited to, glass, metal, ceramics, wood, privies, trash deposits or similar debris. A standard inadvertent discovery clause shall be included in the construction contract to inform contractors of this requirement. If after evaluation it is determined the resource does not qualify as a significant resource, then no further protection or study is necessary. If the resource does qualify as a significant resource then the archaeologist shall make recommendations concerning appropriate mitigation measures that shall be implemented to protect the resources, including but not limited to monitoring, excavation, and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines.	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact CUL-3: The Project could result in damage to or destruction of unidentified buried archeological resources as a result of grading and excavation during construction.	Significant	**Mitigation Measure CUL-3**: The following measures will ensure that any paleontological resources encountered during Project construction would be properly handled, evaluated, and curated to ensure their value to paleontological research is preserved. ▪ A principal paleontologist shall be retained and shall determine when and where monitoring will be required, and who will conduct it. Monitoring shall be required where excavation at depths greater than 2 to 3 feet is being undertaken. The principal paleontologist shall have the authority to halt work in the event that paleontological specimens are discovered, until assessment and appropriate salvage (if needed) is completed. ▪ The principal paleontologist or another mitigation program staff member shall coordinate with appropriate construction contractor personnel to provide information regarding applicable requirements concerning protecting paleontological resources. Contractor personnel, particularly heavy equipment operators, shall also be briefed on procedures to be followed in the event that fossil remains and/or a currently unrecorded fossil site is encountered by earthmoving activities, particularly if a paleontological construction monitor is not present on the site at the time of the discovery. Additional briefing shall be presented to new contractor personnel as necessary. Names and telephone numbers of the monitor and other appropriate mitigation program personnel shall be provided to appropriate contractor personnel. ▪ When required, monitoring shall consist of visually inspecting freshly exposed cuts and spoil piles for the discovery and recovery of larger fossil remains, and periodically dry test screening to allow for the discovery and recovery of smaller fossil remains. If larger vertebrate fossils are noted by construction workers or monitors, excavation there will cease, and the monitor will be notified.	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		▪ The monitor and recovery staff will salvage all larger vertebrate fossil remains, as soon as practicable and as quickly as possible, following Society of Vertebrate Paleontology protocols. The monitor shall document the location and proper geologic context of any recovered fossil occurrence or rock or sediment samples. Any recovered rock or sediment sample shall be processed to allow for the recovery of smaller fossil remains that normally are too small to be observed by the monitor. ▪ If the principal paleontologist or monitor determines that the fossil site is too unproductive or the fossil remains not worthy of recovery by the monitor, no further action will be taken to preserve the fossil site or remains, and earthmoving activities shall be allowed to proceed through the site immediately. ▪ The monitor shall maintain daily monitoring logs that include the particular tasks accomplished, the earthmoving activity monitored, the location where monitoring was conducted, the rock unit(s) encountered, the fossil specimens recovered, and associated specimen data and corresponding geologic and geographic site data. A final technical report of results and findings shall be prepared by the principal paleontologist in accordance with any local jurisdictional requirements (including those of the City of Dublin, Alameda County, and City of Livermore as appropriate) and archived at a repository mutually approved by the jurisdiction and principal paleontologist. ▪ Consistent with Federal and State law, if fossils are discovered during grading, the principal paleontologist must be called to the site to develop a mitigation plan to protect those resources. ▪ All fossil specimens recovered as a result of mitigation, including those recovered as the result of processing rock or sediment samples, will be treated (i.e., prepared, identified,	

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		curated, catalogued) in accordance with designated museum repository requirements. Rock or sediment samples will be submitted to commercial laboratories for microfossil, pollen, radiometric dating, or other analysis, as appropriate. The Project site lies in Alameda County. If paleontological specimens are encountered and collected at the site during mitigation, they become property of the County and should be properly curated at an approved facility (local to the Project location or a museum) and preserved for future research.	
Impact CUL-4: The Project could result in damage to or destruction of unidentified buried tribal cultural resources as a result of grading and excavation during construction.	Significant	**Mitigation Measure CUL-4**: The following measures shall be implemented to ensure that any tribal cultural objects or items encountered during Project construction are properly identified and evaluated, and avoided or preserved. ▪ A culturally-affiliated Native American with knowledge of cultural resources shall be identified and agreed upon by the City of Dublin and local tribes listed by the NAHC and shall be present to monitor all ground-disturbing activities. ▪ If tribal cultural objects or items are encountered, the treatment of those objects or items shall be considered in coordination with culturally-affiliated Native Americans. If avoidance or preservation in place is preferred, avoidance or preservation in place will be completed where feasible and agreed upon by culturally-affiliated Native Americans and the local jurisdiction. ▪ Tribal cultural objects or items encountered during Project construction shall be treated with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource. ▪ The disposition of recovered tribal cultural items that are not burial-associated shall be coordinated in consultation with culturally-affiliated Native Americans.	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Geology and Soils			
Impact GEO-1: People and structures may be exposed to risks associated with slope stability, liquefaction, and seismically-induced settlement at or near Project site.	Significant	**Mitigation Measure GEO-1**: As part of the final design phase, preparation of a design-level geotechnical and geologic report will be required and will include subsurface field work and laboratory testing. Site specific subsurface soil conditions and slope stabilities within the Project site will be verified during the preparation of this report to determine the appropriate final design for the Project. Recommendations from the design-level report will be incorporated into the Project design. Future subsurface exploration will include soil borings at approximate 500-foot intervals along the roadway extension. Soil borings will determine the geologic stability of soils underlying the Project site. In addition, borings will specifically be performed for cut slopes over 8 feet, at retaining wall locations, at bridge support locations, and at culvert crossing locations. Additional borings may be necessary for other Project components, at the discretion of the City of Dublin or the Responsible Agency in their jurisdiction and on the recommendation of professionally qualified specialists. The field investigation will consider Project design details to provide design recommendations. Key considerations shall include the following: ▪ *Liquefaction.* The design-level geotechnical report shall evaluate liquefaction potential at the Cottonwood Creek crossing to determine the need for foundation elements deeper than those required for structural loading purposes. ▪ *Slope Stability.* The Project would include cuts and fills throughout the Project site. Cut/fill slopes will be addressed in the design-level geotechnical report to evaluate the need for selective grading provisions to mitigate the potential for clayey materials in fill slopes, which could create slope stability issues. Selective grading provisions, if necessary, will avoid this risk. In addition, the design-level geotechnical report will also evaluate the suitability of existing soils for re-use as fill material. If soils are not suitable to use as fill	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		material, imported fill will be used where needed to ensure stability. ▪ *Corrosive Soils.* The design-level geotechnical report will investigate for the presence of corrosive soils within the Project site. If corrosive soils are identified at locations where new subsurface facilities are proposed (e.g. bridge foundations, culverts, etc.) specially coated rebar, or alternative pipe culverts will be specified in the contract documents. ▪ *Expansive Soils.* The design-level geotechnical report will investigate for the presence of expansive soils within the Project site. Depending on the extent of expansive soils and level of expansion potential, supplemental design measures such as lime-treatment, selective grading, or select import fill materials may be necessary. ▪ *Erosion Potential.* The design-level geotechnical report will characterize the risk of increased erosion as a result of topography, soil characteristics, and Project design.	
Impact GEO-2: The Project may result in soil erosion or loss of topsoil during construction.	Significant	**Mitigation Measure GEO-1** (described above)	Less than Significant
Impact GEO-3: With implementation of the Project, roadway users and the new Cottonwood Creek bridge may be exposed to risks associated with corrosive, expansive, or other unsuitable soils.	Significant	**Mitigation Measure GEO-1** (described above)	Less than Significant
Hazards and Hazardous Materials			
Impact HAZ-1: Project construction could expose construction workers and future users to soil contamination from past uses of the Project site and surrounding areas, including pesticides and/or petrochemicals	Significant	**Mitigation Measure HAZ-1**: If petroleum-impacted soils or USTs are unexpectedly encountered during any construction activities, work in the area shall be temporarily halted and the corresponding jurisdiction (City of Dublin, the County, or Livermore) shall coordinate with the ACDEH to determine appropriate treatment and	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
from fuel.		removal of the UST and contaminated soil. **Mitigation Measure HAZ-2**: Prior to issuance of any demolition, grading, or building permit, a limited soil investigation will be completed within the construction area to identify potential contamination from past petroleum hydrocarbons and any agrichemical contamination from agricultural use. ▪ Soil samples will be collected and tested for residual pesticides by a qualified professional. Concentrations of agricultural contaminants will be compared to applicable State Water Quality Control Board Environmental Screening Levels. ▪ Dublin shall prepare and submit a comprehensive report to the ACDEH, signed by a qualified environmental professional, documenting the presence or lack of petroleum hydrocarbons, agrichemicals, or other contaminants on the Project site. ▪ If the soil investigation finds contaminants are present, Dublin, in cooperation with the County if needed, shall create and implement a remediation plan that ensures workers and future users of the Project are not exposed to concentrations in excess of screening levels or other risks associated with soil contamination in accordance with regulatory standards. ▪ Potential safety measures could include soil removal and treatment, or protective work attire requirements for construction workers. ▪ The remediation plan shall also include provisions to outline safe transportation and disposal techniques, and would prevent the handling of hazardous materials[1] nearby	

[1] In this context, *hazardous materials* include a hazardous substance (as defined in California Public Resources Code Section 21151.4) or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code.

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		sensitive educational facilities by delimiting work areas and hauling routes within 0.25 mile of a school.	
Impact HAZ-2: Project construction could require transportation of contaminated soils within one-quarter mile of an existing or proposed school, if contaminated soils are found and removed from the construction footprint.	Significant	**Mitigation Measure HAZ-2** (described above)	Less than Significant
Noise and Vibration			
Impact NOI-1: The Project would result in temporary noise increases during construction, which could exceed local standards.	Significant	**Mitigation Measure NOI-1**: The following measures will be implemented during Project construction. ▪ The Project contractor shall submit a Construction Noise Management Program that identifies measures proposed to minimize construction noise impacts on existing residents. ▪ All construction equipment will conform to Section 14-8.02, Noise Control, of the latest Standard Specifications. ▪ In Dublin, all construction operations shall comply with local noise standards and be limited to normal daylight hours where feasible. All stationary equipment shall be adequately muffled and located away from sensitive receptors. The construction contractor shall limit all on-site noise-producing construction activities, including deliveries and warming up of equipment, to the daytime hours of 7:00 a.m. to 7:00 p.m., daily, where feasible. If work is necessary outside of these hours, the contractor shall acquire appropriate permits from the local jurisdiction and implement a construction noise monitoring program, providing additional mitigation where practical and feasible. ▪ In the County and Livermore, construction activities generating excessive noise will be limited to the hours specified in the appropriate local ordinance, where feasible. If work is necessary outside of these hours, the contractor shall acquire appropriate permits from the local jurisdiction and	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		implement a construction noise monitoring program, providing additional mitigation where practical and feasible. ▪ Pile driving activities in all jurisdictions will be limited to daytime hours only, when feasible. If pile driving outside of typical construction hours specified in this measure is required, the contractor shall acquire appropriate permits from the local jurisdiction and implement a construction noise monitoring program, providing additional mitigation where practical and feasible. ▪ Equip all internal combustion-engine driven equipment with manufacturer recommended intake and exhaust mufflers that are in good condition and appropriate for the equipment. ▪ Locate stationary noise generating equipment and self-powered lighting systems as far as possible from sensitive receptors when sensitive receptors adjoin or are near the construction footprint ▪ Utilize "quiet" air compressors and other "quiet" equipment where such technology exists. ▪ Prohibit unnecessary idling of internal combustion engines within 100 feet of residences. ▪ Avoid staging of construction equipment within 200 feet of noise-sensitive uses. ▪ The construction contractor shall designate a noise disturbance coordinator who would be responsible for responding to any local complaints about construction noise. When a complaint is received, the disturbance coordinator shall notify Dublin within 24 hours of the complaint and determine the cause of the noise complaints (starting too early, bad muffler, etc.) and institute reasonable measures warranted to correct the problem, as deemed acceptable by the City of Dublin Community Development Department. The construction contractor shall conspicuously post the contact name and telephone number for the noise disturbance coordinator at the construction site.	

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact NOI-2: Project construction activities could result in substantial temporary and periodic noise increases as a result of construction equipment operation and construction activities in the vicinity of sensitive receptors.	Significant	**Mitigation Measure NOI-1** (described above)	Less than Significant
Public Services			
Impact SERV-1: Project construction could temporarily result in interference with emergency services access as a result of construction work at the intersections of Dublin Boulevard/Fallon Road and Doolan Road/North Canyons Parkway.	Significant	**Mitigation Measure TRAF-1** (described below)	Less than Significant
Transportation and Traffic			
Impact TRAF-1.1: Project construction would result in a temporary increase in construction truck trips on local streets designated as truck routes and construction vehicle trips to and from the Project site. Project construction could require temporary closure of the Dublin Boulevard/Fallon Road intersection and the Doolan Road/North Canyons Parkway intersection, and temporary closure of Croak Road while a new intersection is constructed, necessitating detours. Construction truck, equipment, and vehicle trips, and intersection closures and detours could result in temporary congestion at local intersections in Dublin and Livermore.	Significant	**Mitigation Measure TRAF-1**: A TMP shall be prepared during the design phase for the Project, in accordance with all local requirements. The TMP should address traffic impacts from staged construction, detours, and specific traffic handling concerns during construction of the Project, including multi-modal access. The objective of the TMP is to minimize the impacts that construction activities would have on the traveling public. Traffic management strategies that require action by the construction contractor should be presented in detail in the technical specifications of the bid contract, and should be considered part of the Project. In implementing the TMP, each jurisdiction should produce and disseminate press releases and other documents, as necessary, to adequately notify and inform motorists, pedestrians and cyclists, business community groups, local entities, emergency services, and elected officials of upcoming road closures and detours. This responsibility includes advance notification to local newspapers, television and radio stations, and emergency response providers. If agreed upon by Dublin, the County, and Livermore, Dublin as the lead	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		agency may lead preparation and implementation of the TMP.	
Impact TRAF-1.2: The change in travel patterns resulting from the Project would result in unacceptable operations at the intersection of Fallon Road and Dublin Boulevard during the AM peak hour over existing conditions.	Significant	**Mitigation Measure TRAF-2**: Dublin is to implement the following geometric and signal timing improvements at the intersection of Dublin Boulevard/Fallon Road prior to the opening of the Dublin Boulevard Extension: ▪ Implement the mitigation measures described in the Kaiser Environmental Impact Report (EIR) which includes the construction of an additional left turn lane for both the northbound and eastbound approaches. This improvement is the obligation of Kaiser and the City shall build and seek reimbursement from Kaiser if not built by the time the Dublin Boulevard – North Canyons Parkway Extension Project is built. ▪ In addition to the mitigations proposed for the Kaiser EIR, Dublin shall implement the following improvements: ▪ Northbound – construct at least one northbound right turn lane resulting in the following final lane configuration: 2 left turns, 2 through, and one right turn lane ▪ Eastbound – construct at least one more through lane resulting in the following final lane configuration: 2 left turns, 2 through, and 2 rights ▪ Westbound – construct at least two additional through lanes resulting in the following lane configuration: 1 left turn, 2 through, and a shared through/right ▪ Optimize the signal timing	Less than Significant
Impact TRAF-1.3: The change in travel patterns resulting from the Project would result in unacceptable operations at the intersection of Airway Boulevard and North Canyons Parkway in Livermore during the AM peak hour over existing conditions.	Significant	**Mitigation Measure TRAF-3**: The City of Livermore is to implement the following geometric and signal timing improvements at the intersection of Airway Boulevard and North Canyons Parkway prior to Project completion: ▪ Shift the median of Airway Boulevard one lane to the west reducing the southbound lanes from three to two and increasing the northbound lanes from three to four ▪ With the extra northbound lane, convert the northbound	Significant and Unavoidable

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		approach to Airway Boulevard and North Canyons Parkway to have an exclusive left, shared left/through, and two right turn lanes ▪ Add an additional westbound through lane resulting in two left turns, one exclusive through, and a shared through/right ▪ Optimize the signal timing	
Impact TRAF-1.4: The change in travel patterns resulting from the Project would result in unacceptable operations at the intersection of Fallon Road and Dublin Boulevard during both the AM and PM peak hours under 2025 conditions.	Significant	**Mitigation Measure TRAF-2** (described above)	Less than Significant
Impact TRAF-1.5: The change in travel patterns resulting from the Project would result in unacceptable operations at the intersection of Airway Boulevard and North Canyons Parkway during the AM peak hour under 2025 conditions.	Significant	**Mitigation Measure TRAF-3** (described above)	Significant and Unavoidable
Impact TRAF-1.6: The change in travel patterns resulting from the Project would result in unacceptable operations at the intersection of Airway Boulevard and North Canyons Parkway during the AM and PM peak hours under 2040 (cumulative) conditions.	Significant	**Mitigation Measure TRAF-3** (described above)	Significant and Unavoidable
Impact TRAF-2.1: The Project would result in the northbound left turn queue at the intersection of Fallon Road and Dublin Boulevard increasing in length by more than 25 feet (389 feet) during the AM peak hour. This turn queue already exceeds the available storage under existing conditions.	Significant	**Mitigation Measure TRAF-2** (described above)	Less than Significant

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact TRAF-2.2: The Project would result in the southbound left turn queue at the intersection of Fallon Road and Dublin Boulevard exceeding the available turn pocket storage by more than 25 feet (67 feet) during the PM peak hour under 2025 conditions.	Significant	**Mitigation Measure TRAF-2** (described above)	Less than Significant
Impact TRAF-2.3: The Project would result in the westbound queue at Airway Boulevard and North Canyons Parkway increasing by more than 25 feet (29 feet) during the PM peak hour under 2040 conditions. This turn queue already exceeds the available storage under existing conditions.	Significant	**Mitigation Measure TRAF-3** (described above)	Significant and Unavoidable
Impact TRAF-2.4: The Project would result in the westbound right turn at the intersection of Isabel Avenue and I-580 Westbound off-ramps exceeding the available turn pocket storage by more than 25 feet (58 feet) during the AM peak hour under 2040 conditions.	Significant	**Mitigation Measure TRAF-4**: Caltrans is to optimize the traffic signal timing at Isabel Avenue and I-580 Westbound Ramps by the year 2035 to increase the green time for the westbound right turn movement.	Significant and Unavoidable

Sources: Circlepoint, 2019; HT Harvey and Associates, 2019; Illingworth & Rodkin, 2019; Kittelson and Associates, 2018

2 INTRODUCTION

This Draft Environmental Impact Report (Draft EIR) has been prepared pursuant to the California Environmental Quality Act (CEQA) and evaluates the potential impacts of the proposed Dublin Boulevard – North Canyons Parkway Extension (Project). The Project would include a new roadway extension between the eastern terminus of Dublin Boulevard in the City of Dublin (Dublin) and the western terminus of North Canyons Parkway in the City of Livermore (Livermore), traversing land in Dublin and Alameda County (County) before terminating at the western border of Livermore.

2.1 DOCUMENT ORGANIZATION

This Draft EIR is organized into the following sections:

- **Chapter 1.0, Executive Summary**, summarizes the Project description and objectives; describes environmental consequences that would potentially result from implementing the Project; describes known areas of controversy; and provides a table that summarizes anticipated significant environmental impacts, describes mitigation measures, and indicates the level of significance of impacts before and after mitigation.
- **Chapter 2.0, Introduction**, provides an overview of the document organization, describes the purpose and scope of topics addressed in the Draft EIR, lists required permits and approvals, and describes the environmental review process.
- **Chapter 3.0, Project Description**, describes the Project location, Project history and background, Project components, and Project objectives.
- **Chapter 4.0, Introduction to Environmental Analysis**, provides a brief description of the environmental assessment methodology; environmental effects that were found not to be significant and, therefore, not evaluated in further detail; and describes the methodology for evaluation of cumulative impacts.
- **Chapter 5.0, Environmental Impact Analysis**, describes the environmental setting for each resource topic, including applicable plans and policies as appropriate; provides an analysis of the potential environmental impacts of the Project and cumulative impacts; and identifies mitigation measures to reduce significant impacts.
- **Chapter 6.0, Alternatives**, summarizes alternatives to the Project and the comparative environmental consequences and benefits of each alternative. This section includes an analysis of the No Project Alternative, as required by CEQA.
- **Chapter 7.0, Other CEQA Considerations**, provides a discussion of: potential growth inducement as a result of the Project, vehicle miles traveled, significant irreversible environmental changes, and the Project's significant and unavoidable impacts.
- **Chapter 8.0, EIR Preparers**, provides a list of the individuals involved in the preparation of the Draft EIR.

Appendices include the Notice of Preparation (NOP), comment letters, and technical reports used to prepare the analysis contained in this Draft EIR.

2.2 LEAD AGENCY DETERMINTION

CEQA Guidelines Section 15367 defines the Lead Agency as "…the public agency, which has the principal responsibility for carrying out or approving a project." Dublin is the public agency with the principal responsibility for approving the Project, and as such is the Lead Agency for this Project under CEQA as defined in CEQA Guidelines Section 15367. Since the Project includes multiple jurisdictions and would be funded in part by the Alameda County Transportation Commission (ACTC), more than one public agency will be responsible for Project approvals and implementation. When multiple public agencies are involved in a project, the CEQA Guidelines require the establishment of one Lead Agency for the purpose of preparing the environmental document (CEQA Guidelines Section 15050). At the onset of the Project, all four public agencies convened and determined Dublin would act as the Lead Agency under CEQA, consistent with CEQA Guidelines Section 15051(c), and the County, Livermore, and ACTC would act as responsible agencies.

RESPONSIBLE AND TRUSTEE AGENCIES

As described above, other agencies in addition to Dublin will serve as responsible or trustee agencies, pursuant to CEQA Guidelines Section 15381 and Section 15386, respectively. This Draft EIR will provide environmental information to these agencies and other public agencies, which will be required to grant approvals and coordinate with other agencies, as part of Project implementation. These agencies include but are not limited to the following:

- City of Livermore (Responsible Agency)
- County of Alameda (Responsible Agency)
- Alameda County Transportation Commission (Responsible Agency)
- California Department of Transportation (Trustee Agency)
- California Department of Fish and Wildlife (Trustee Agency)
- California Regional Water Quality Control Board, San Francisco Region (Trustee Agency)
- Zone 7 Water Agency (Trustee Agency)

2.3 INTENDED USES OF THE DRAFT EIR

CEQA requires the Lead Agency to consider the information contained in the EIR prior to taking any discretionary action. The Draft EIR is intended to inform decision makers, responsible agencies, and the public of the potential environmental consequences of implementing the Project. This Draft EIR provides a project-level analysis, discloses significant environmental impacts, and identifies: 1) mitigation measures to reduce impacts, 2) significant impacts that cannot be avoided, 3) growth-inducing impacts, 4) effects found not to be significant, and 5) cumulative impacts of the Project in combination with past, present, and reasonably foreseeable future projects. This Draft EIR also addresses alternatives that were considered but rejected, as well as alternatives that may avoid or substantially lessen potential environmental impacts.

It is not the purpose of an EIR to recommend approval or denial of a project. In accordance with CEQA Section 15090, decision makers must certify the EIR prior to taking action on a project and requested entitlements. As stipulated in CEQA Guidelines Section 15050(b), the decision-making body of each Responsible Agency will consider this EIR in their review and approval process. Authorization to implement the Project by the County, Livermore, and ACTC will be required for components located in those jurisdictions. Project construction would take place in both Dublin and the County, and construction access and some minor construction activities would be required in Livermore.

2.4 SCOPE OF THE EIR

This Draft EIR was prepared by an environmental consulting firm. Prior to public review, it was extensively reviewed and evaluated by Dublin and Responsible Agency staff members. This Draft EIR reflects the independent judgment and analysis of Dublin as required by CEQA, in coordination with the responsible agencies. Lists of organizations, publications, reference materials, and persons consulted are provided in the references section at the end of each environmental topic analyzed in **Chapter 5.0, Environmental Impact Analysis**.

This Draft EIR addresses the potential environmental impacts of the Project under CEQA. As federal funding will be used to partially support Project implementation, analysis under the National Environmental Policy Act (NEPA) is also required and is being prepared as a separate document. The California Department of Transportation (Caltrans) is the NEPA Lead Agency, under the delegation of authority by the Federal Highway Administration (FHWA). As of March 6th, 2019, the NEPA process including consultation with federal agencies is still ongoing, and publication of the draft Environmental Assessment for NEPA is anticipated in the summer of 2019.

NOTICE OF PREPARATION

Upon preliminary review of the Project and a determination that an EIR would be required, Dublin published a NOP on May 18, 2017 to inform the public and responsible agencies that a Draft EIR was being prepared. The NOP was circulated for a 30-day scoping period that concluded on June 19, 2017. Dublin considered comments received in response to the NOP in determining the final scope and content of this Draft EIR, as addressed under each environmental topic in **Chapter 5.0, Environmental Impact Analysis**.

A scoping meeting was conducted at Dublin's City Hall on May 31, 2017 to inform the public and interested agencies of the Project, solicit comments, and identify areas of concern. The scope of this Draft EIR includes the potential environmental impacts identified in the NOP and issues raised by agencies and the public in response to the NOP, which include:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Population and Housing
- Public Services
- Transportation and Traffic
- Utilities and Services Systems

A total of 36 comments were received from public agencies and individuals during the NOP circulation period. These letters are provided in **Appendix A** of this Draft EIR.

2.5 REQUIRED PERMITS AND APPROVALS

The Project would require the following discretionary actions from Dublin:

- EIR Certification
- Amendment to the City of Dublin General Plan
- Amendment to the Eastern Dublin Specific Plan

At their discretion, Livermore and the County may also complete amendments to their respective General Plans prior to Project implementation, to reconcile the number of travel lanes that would be implemented under the Project. In addition to discretionary approvals by Dublin, permits and approvals required from federal, state, and local agencies are presented in **Table 2-1**.

Table 2-1 Required Permits and Approvals

Agency	Permit/Approval	Status
United States Army Corps of Engineers	Section 404 Permit – Nationwide	Issued during the final design phase
United States Fish and Wildlife Service	Biological Opinion	Issued prior to Project approval
	Section 7 Incidental Take Permit	Issued prior to Project approval
California Department of Fish and Wildlife	1602 Agreement	Issued during the final design phase
	Incidental Take Permit	Issued during the final design phase
Regional Water Quality Control Board	Section 401 Certification	Issued during the final design phase

Source: Circlepoint, 2019; HT Harvey and Associates, 2019

2.6 DOCUMENTS INCORPORATED BY REFERENCE

This Draft EIR references several technical studies, analyses, reports, and previously certified environmental documents. Information incorporated by reference has been summarized in the appropriate section(s) of this Draft EIR, as permitted under Section 15150 of the CEQA Guidelines, with a description of how the public may obtain and review these documents. The relationship between the incorporated part of the referenced document and the Draft EIR has also been described. The documents and other sources that have been used in the preparation of this Draft EIR include but are not limited to:

- City of Dublin, General Plan 1984, as amended 2017
- City of Dublin, General Plan EIR 1984
- City of Dublin, Eastern Dublin Specific Plan 1994 updated 2016
- City of Dublin, Eastern Dublin Specific Plan and General Plan Amendment EIR 1993
- City of Dublin, Eastern Dublin Properties Stage 1 Development Plan and Annexation SEIR 2002
- City of Dublin, Fallon Village EIR and Supplemental EIR (SEIR) 2005
- City of Dublin, Dublin Municipal Code as amended
- County of Alameda, General Plan: East County Area Plan 1994
- City of Livermore, General Plan 2004, as amended 2015
- City of Livermore, BART to Livermore Extension Project EIR, 2018
- City of Livermore, Isabel Neighborhood Plan EIR, 2018

DRAFT EIR APPENDICES

Information in an EIR appendix may include summarized technical data, maps, plot plans, diagrams, and similar information in sufficient detail to permit the public and reviewing agencies to make full assessment of the Project's significant environmental effects. To achieve a balance between the highly technical analysis referenced in an EIR and an EIR's public information function, the CEQA Guidelines allow technical analyses as appendices to the main body of the EIR. Appendices to this Draft EIR are presented on a CD (for hardcover copies of the draft) and as separate PDF files (for online viewing and download).

2.7 COMMENTING ON THE DRAFT EIR

The City of Dublin filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161) of this Draft EIR. The Draft EIR will be available for review by public and interested parties, agencies, and organizations for 45 days as required by California law. To further facilitate review of the Draft EIR, Dublin will host a public meeting where comments on the Draft EIR may be brought by interested members of the public. This public meeting will take place on April 3, 2019 at 6:30 p.m. at the Regional Meeting Room, 100 Civic Plaza, Dublin, CA 94568.

In reviewing the Draft EIR, reviewers should focus on the document's adequacy in identifying potential significant impacts, analyzing significant impacts on the environment, and the identification of ways in which significant impacts of the Project might be avoided or mitigated.

Comments received and the responses to comments will be included as part of the record for consideration by decision makers for the Project. To ensure inclusion in the Final EIR and full consideration by the Lead Agency, comments on the Draft EIR must be received in writing during the 45-day public review period at the following address:

Obaid Khan, Transportation and Operations Manager
City of Dublin
100 Civic Plaza
Dublin, CA, 94568
obaid.khan@dublin.ca.gov

3 PROJECT DESCRIPTION

This chapter describes the proposed extension of Dublin Boulevard from its current terminus in the City of Dublin (Dublin) eastward to North Canyons Parkway in the City of Livermore (Livermore), referred to as the Project. This chapter also provides a general description of existing conditions at and surrounding the Project site (the environmental setting), provides Project background, and lists the Project objectives.

In the discussion below and throughout this environmental document, the term "Project site" refers to the permanent area that would be changed by the Project. The term "construction footprint" is defined as an area larger than the Project site that would be temporarily effected by the Project due to construction. The construction footprint includes all areas of the Project site. The "operational footprint" is a term that is equivalent to the Project site but is used in some technical discussions to provide clarity between the construction and operational footprints.

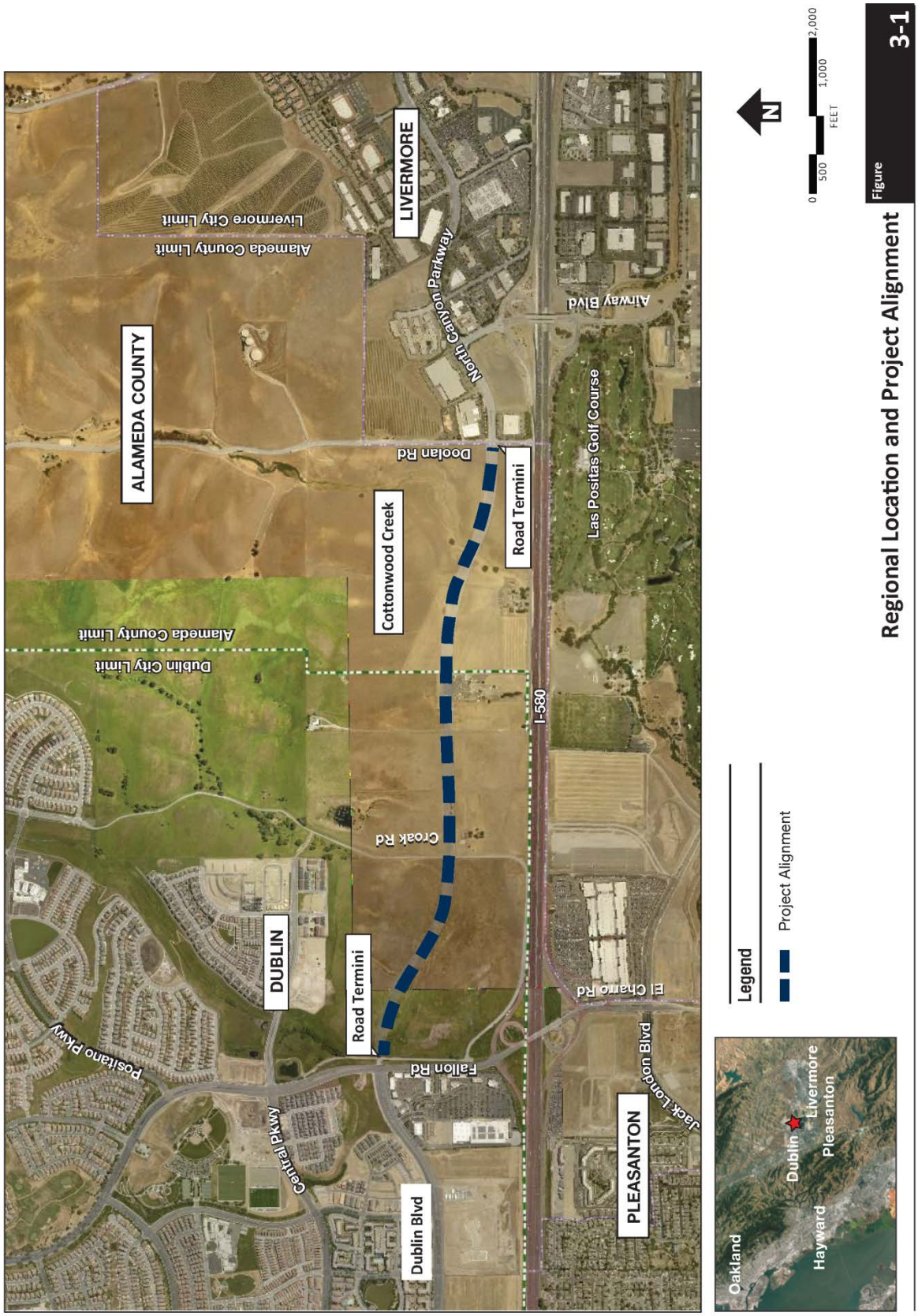
The term "study area" refers to an area including the Project site, but extending beyond the Project site to include surrounding areas that could be affected by the Project. The "study area" is not defined as a specific radius around the Project site, but varies from one environmental topic to another; some environmental topics are generally concerned with impacts close to the Project site, such as archeological resources, while other topics by their nature are concerned with broader impacts, such as regional growth. The study area for each topic is defined under the "Existing Conditions" header in each section of **Chapter 5.0, Environmental Impact Analysis**.

3.3 LOCATION AND SETTING

The Project site is in eastern Alameda County (County) in the San Francisco Bay Area region, and includes areas within Dublin, unincorporated areas of the County, and Livermore. The Project site is north of Interstate 580 (I-580) between the existing terminus of Dublin Boulevard to the west and terminus of North Canyons Parkway to the east (see **Figure 3-1**).

The Project site consists of primarily undeveloped grazing ranchland and open space, with intermittent agricultural structures and outbuildings. Improvements to the agricultural lands generally consist of private paved and unpaved roads used to access private property, fences, barns, corrals, wells, water tanks, and various outbuildings. Developed residential areas are north and northwest of the Project site within Dublin, and there is one commercial property – a landscaping business – on unincorporated County land south of the Project site.

Land use designations at the Project site include industrial, open space, office, and commercial uses in Dublin and resource management and large parcel agricultural uses in the County. The Project site is adjacent to business and commercial uses in Livermore. In Dublin, industrial, office, and commercial land uses have not yet been developed to the north and south of the Project site, and existing land uses are permitted non-conforming uses.


LIVERMORE
Livermore City Limit
Alameda County Limit
ALAMEDA COUNTY
North Canyons Parkway
Airway Blvd
Dolan Rd
Cottonwood Creek
Road Termini
Las Positas Golf Course
Alameda County Limit
Dublin City Limit
I-580
Croak Rd
DUBLIN
Road Termini
El Charro Rd
Fallon Rd
Jack London Blvd
Positano Pkwy
Central Pkwy
Dublin Blvd
PLEASANTON
N
0
500
1,000
2,000
FEET
Legend
Project Alignment
Oakland
Hayward
Dublin
Livermore
Pleasanton
Figure 3-1
Regional Location and Project Alignment
Source: Circlepoint, 2018

The topography of the Project site ranges from relatively flat at the southern portion near I-580 to gently rolling hills to the north. The topography slopes up slightly northward, and Cottonwood Creek flows from north to southwest across a portion of the Project site.

There are a small number of trees within the Project site, some which are planted around existing agricultural development and growing near man-made drainages. Several patches of ornamental trees, primarily eucalyptus (*Eucalyptus sp.)*, occur near fence lines and buildings. There are also riparian trees along Cottonwood Creek. Tree species include willows (*Salix laevigata*) and valley oaks (*Quercus lobate*). Valley oaks in the Project site along Cottonwood Creek are large, up to 4.8 feet diameter-at-breast-height (DBH).

3.4 PROJECT BACKGROUND AND HISTORY

The extension of Dublin Boulevard from its current terminus at Fallon Road to the Doolan Road/North Canyons Parkway intersection has been planned since 1984. Dublin's General Plan, the General Plans of the County and Livermore, the Eastern Dublin Specific Plan (EDSP), the Fallon Village Supplemental Environmental Impact Report (SEIR), and Plan Bay Area 2040 all include the extension of Dublin Boulevard. The Project is programmed in the current Transportation Improvement Program (TIP).[1]

INTERSTATE I-580 IN DUBLIN

I-580 is a major regional connector. It begins in Marin County in the North Bay Area, connects through the cities of Berkeley and Oakland before traveling east through Dublin, Pleasanton, and Livermore, and terminates in San Joaquin County south of Tracy.

Traffic congestion on I-580 is an ongoing issue in the Tri-Valley area.[2] Various projects on I-580, including roadway widening, interchange improvements, and express lanes have been implemented or are planned throughout the County. In 2016, new I-580 express lanes were opened in Dublin, Pleasanton, and Livermore to provide congestion relief.[3] While the express lanes have helped reduce some congestion, issues remain; traffic volumes on I-580 during peak commute times continue to exceed capacity, resulting in delays.

Caltrans' Transportation Corridor Concept Report for eastern I-580 identifies bottlenecks and congestion along the portion of I-580 south of the Project site, along with anticipated capacity issues in the future.[4,5] Caltrans' corridor system management plan (CSMP) for eastern I-580 reflects

[1] Each metropolitan planning organization (MPO) is required, under 49 U.S.C. 5303(j) , to develop a Transportation Improvement Program (TIP)—a list of upcoming transportation projects—covering a period of at least four years.
[2] The Tri-Valley area is a triangle-shaped region of the eastern San Francisco Bay Area, 18 miles southeast of Oakland and 33 miles from San Francisco. It encompasses the cities of Pleasanton, Livermore, Dublin, San Ramon, Danville, Alamo, Blackhawk and Diablo.
[3] Express lanes allow carpool vehicles, clean air vehicles, motorcycles, and transit vehicles to access a separate lane during peak commute times. Single-occupancy vehicles can pay a toll to travel in express lanes during peak hours.
[4] Caltrans, 2010

similar existing and future congestion issues along this segment of I-580. The portion of I-580 from the Interstate 680 (I-680) interchange to Isabel Avenue/State Route 84 (SR-84) is shown as having the worst evening traffic congestion along the eastern I-580 corridor.

Similarly, the Circulation and Scenic Highways Element of Dublin's General Plan discusses existing and future capacity issues along the I-580 corridor. Dublin's General Plan outlines how capacity on I-580 has been affected by new development in Dublin and Livermore, and that additional capacity will be needed to accommodate planned development in Dublin and in the Eastern Extended Planning Area (EEPA) in particular. The EEPA is shown on **Figure 3-2**. Dublin's General Plan identifies strategies for addressing capacity issues along I-580, which include widening of I-580 through the addition of more travel lanes, improvements to existing interchanges between I-580 and local roadways, and widening or extending local roadways.

DUBLIN BOULEVARD AND NORTH CANYONS PARKWAY

Dublin Boulevard is a major arterial facility connecting western parts of Dublin, Dublin's downtown area, and partially developed areas in the EEPA.[6] In Dublin's General Plan, Dublin Boulevard is classified as an arterial roadway from its beginning in western Dublin to the intersection of Dublin Boulevard and Tassajara Road. From Tassajara Road to its terminus at Fallon Road, Dublin Boulevard is classified as a collector roadway.

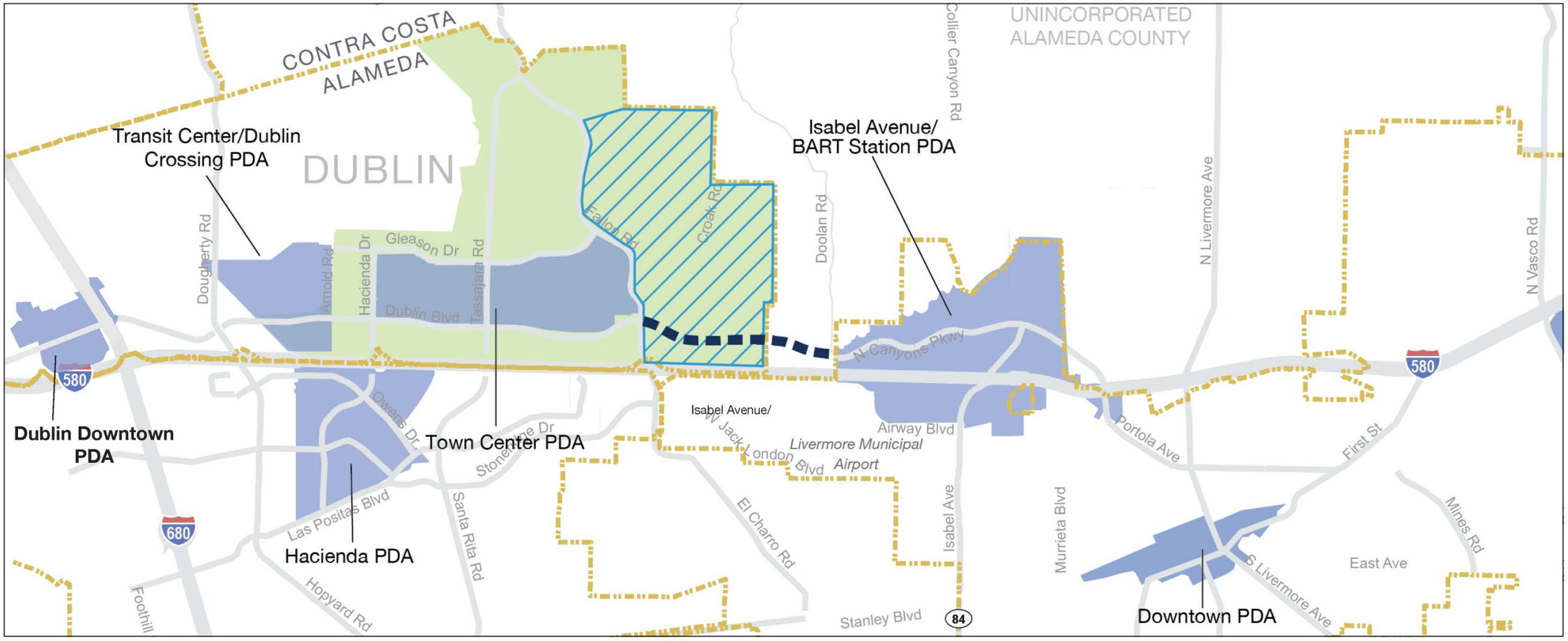
Dublin Boulevard provides connectivity between downtown Dublin and the Dublin/Pleasanton Bay Area Rapid Transit (BART) Station, Camp Parks Army Base, the regional Iron Horse Trail, and various residential, office, and commercial land uses. Existing land uses west of the Project site in Dublin and east of the Project site along North Canyons Parkway in Livermore are developed with residential, commercial, and business uses, as shown on **Figure 3-3a** and **b**.

North Canyons Parkway is a four-lane major street in Livermore that provides access to commercial, industrial, and residential development, and educational facilities in western Livermore.[7] The area adjacent to North Canyons Parkway includes residential, business, and commercial land uses as shown in **Figure 3-3a** and **b**.

REGIONAL AND LOCAL PLANNING

The extension of Dublin Boulevard is described in various regional and local land use planning documents. These regulating documents include Plan Bay Area; the general plans for Dublin, Livermore, and the County; and the EDSP and Fallon Village SEIR.

[5] Caltrans, 2002
[6] Dublin Boulevard is defined as Minor Arterial to Other Principal Arterial, depending on location, in the California Road System, maintained by Caltrans.
[7] The former Livermore Valley Charter school site is accessed directly from North Canyons Parkway. This school was opened in 2018 and closed in 2018. However, the infrastructure for a school (classrooms, outdoor play areas, etc.) remains.



Legend

Proposed

- Project Alignment

Regulatory Boundaries

- Priority Development Areas
- Eastern Dublin Specific Plan - Eastern Extended Planning Area
- Municipal Boundaries
- Fallon Village Site

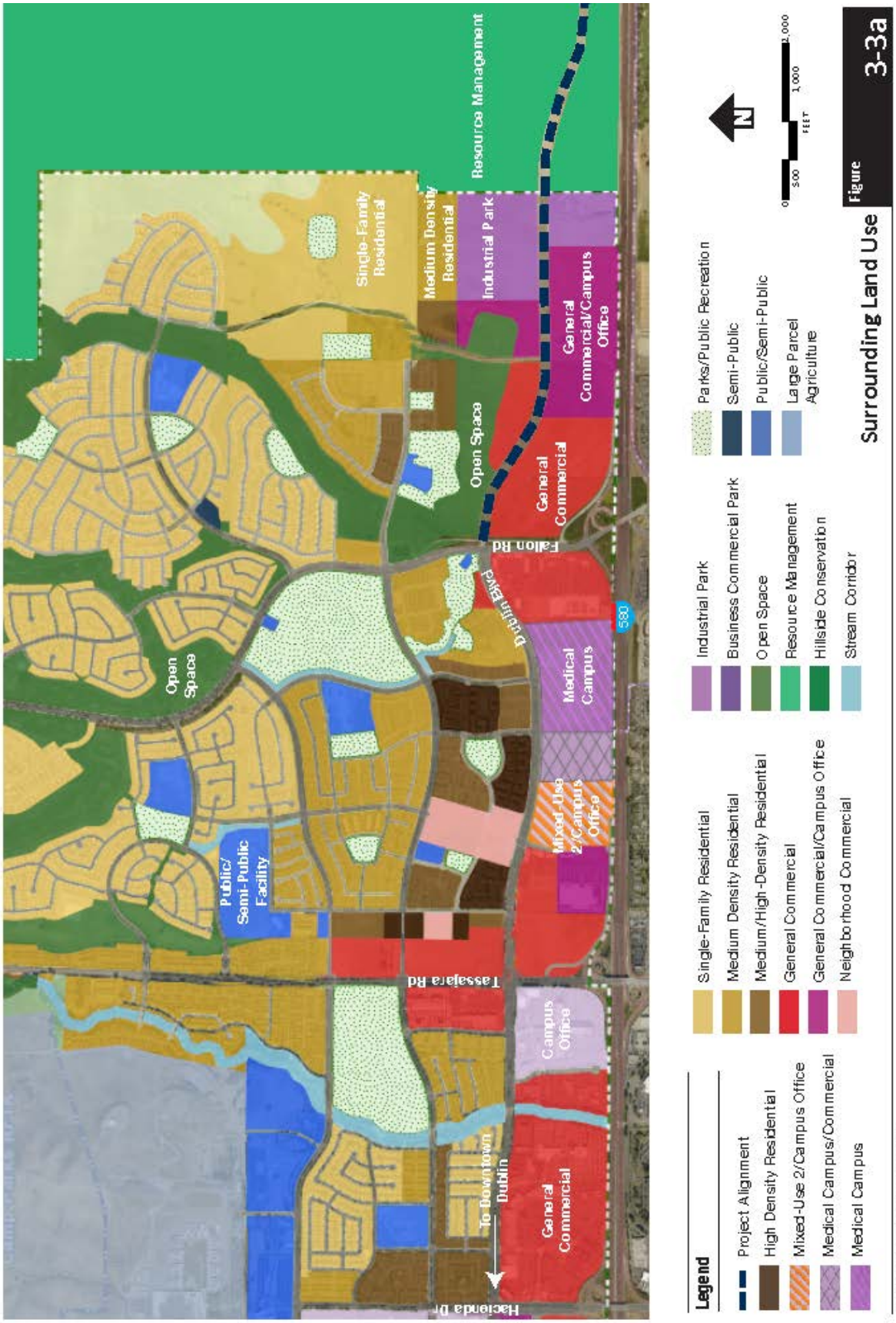
N

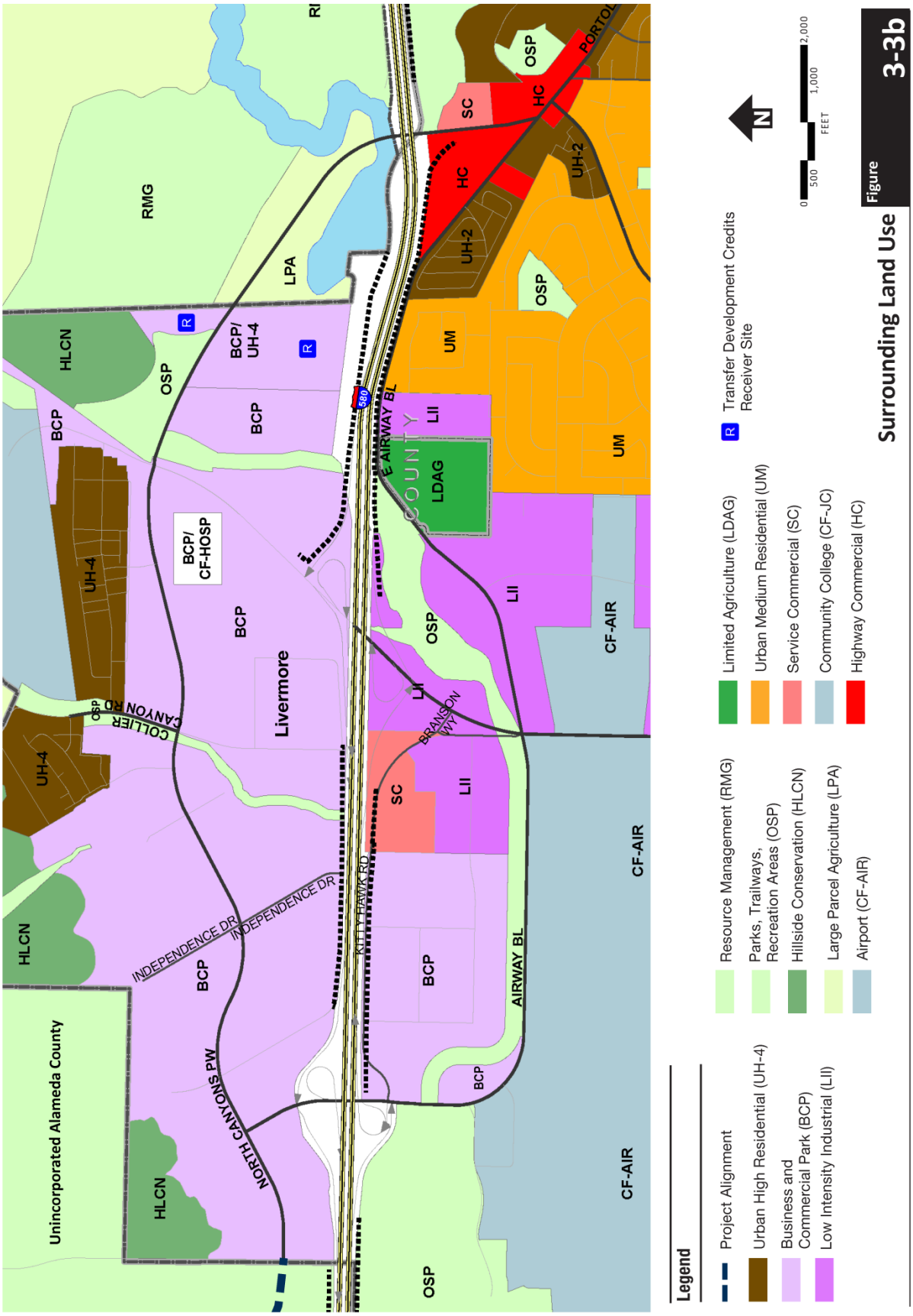
0 0.5 1 2 MILE

Planning Areas Figure 3-2

Source: Circlepoint, 2018

This Page Intentionally Left Blank


Resource Management
Single-Family Residential
Medium Density Residential
Industrial Park
General Commercial/Campus Office
Open Space
General Commercial
Fallon Rd
Dublin Blvd
580
Open Space
Medical Campus
Mixed-Use 2/Campus Office
Public/ Semi-Public Facility
Tassajara Rd
Campus Office
To Downtown Dublin
General Commercial
Hacienda Dr
Legend
Project Alignment
High Density Residential
Mixed-Use 2/Campus Office
Medical Campus/Commercial
Medical Campus
Single-Family Residential
Medium Density Residential
Medium/High-Density Residential
General Commercial
General Commercial/Campus Office
Neighborhood Commercial
Industrial Park
Business Commercial Park
Open Space
Resource Management
Hillside Conservation
Stream Corridor
Parks/Public Recreation
Semi-Public
Public/Semi-Public
Large Parcel Agriculture
N
0
500
1,000
2,000
FEET
Figure
3-3a
Surrounding Land Use
Source: City of Dublin, 2018


Livermore
Unincorporated Alameda County
RMG
LPA
HLCN
OSP
BCP
BCP/ UH-4
BCP/ CF-HOSP
UH-4
UH-2
UM
HC
SC
LDAG
LII
CF-AIR
COLLIER RD
CANYON RD
INDEPENDENCE DR
KITTY HAWK RD
AIRWAY BL
BRANSON WY
NORTH CANYONS PW
PORTOL
Legend
Project Alignment
Urban High Residential (UH-4)
Business and Commercial Park (BCP)
Low Intensity Industrial (LII)
Resource Management (RMG)
Parks, Trailways, Recreation Areas (OSP)
Hillside Conservation (HLCN)
Large Parcel Agriculture (LPA)
Airport (CF-AIR)
Limited Agriculture (LDAG)
Urban Medium Residential (UM)
Service Commercial (SC)
Community College (CF-JC)
Highway Commercial (HC)
R Transfer Development Credits Receiver Site
N
0
500
1,000
2,000
FEET
Figure 3-3b
Surrounding Land Use
Source: City of Livermore, 2014

Local and regional planning efforts have identified several transportation goals, which the Project would directly and indirectly address:

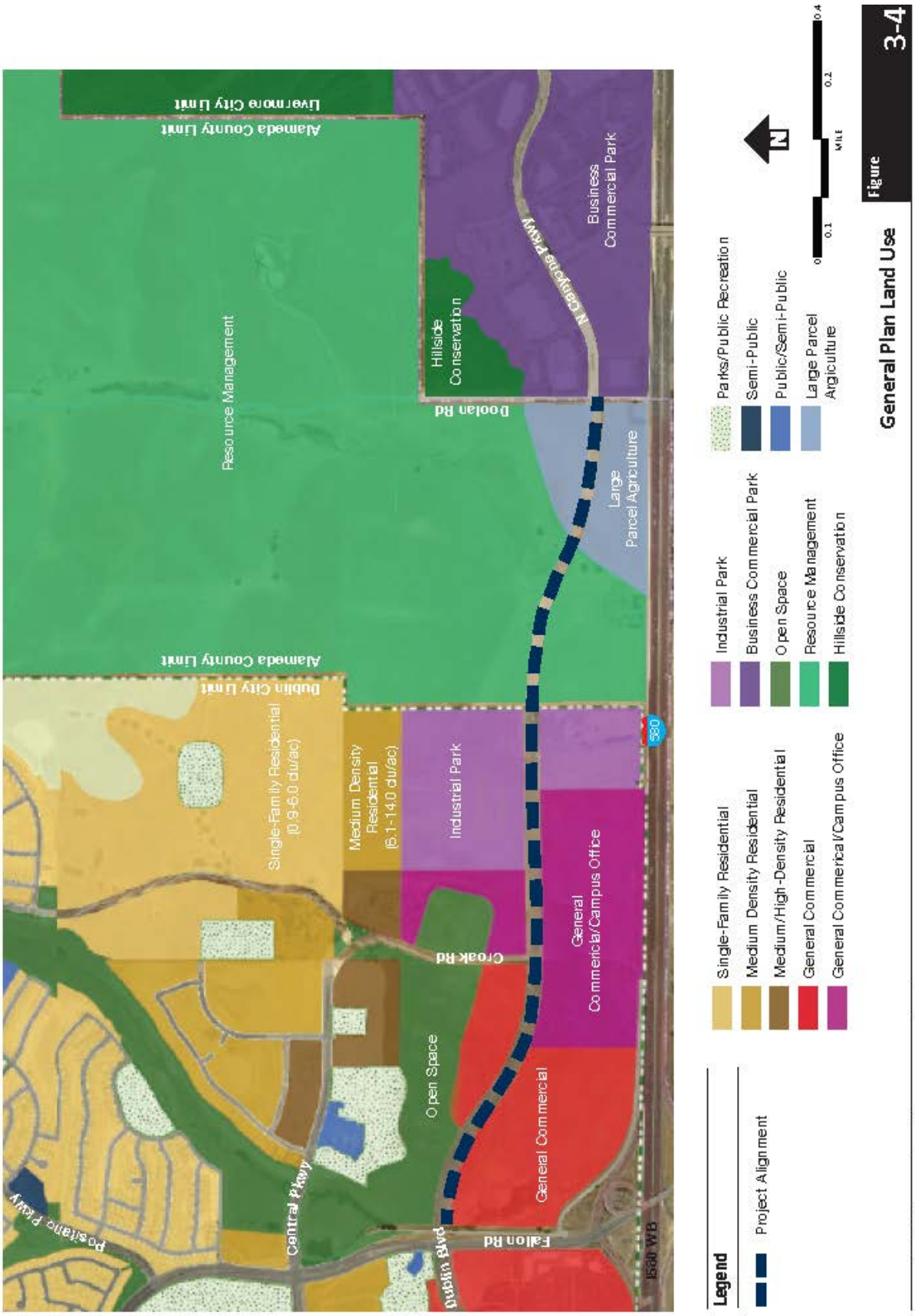
- Increase bicycle and pedestrian access and circulation
- Interconnect five Priority Development Areas (PDAs) in Dublin and Livermore
- Improve overall mobility, access, connectivity, safety, and efficiency of the multimodal transportation system for all users, including goods movement
- Provide approaches and technologies that enhance the existing roadway system's efficiency and capacity without widening streets
- Reduce single-occupancy vehicle trips by providing a transit system along the roadway extension with improved headways during peak demand periods[8]

Regional Planning

The Project was included in Plan Bay Area 2035, a joint effort between the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG). Plan Bay Area is the Regional Transportation Plan (RTP) for the nine-county San Francisco Bay Area. Plan Bay Area includes PDAs, which are areas in existing communities that have been identified and approved by local jurisdictions for future growth. There are two PDAs in immediate proximity to the Project: the Town Center PDA in Dublin and the Isabel Avenue/Bay Area Rapid Transit Station PDA in Livermore (**Figure 3-2**). Three additional PDAs are in the vicinity of Dublin Boulevard and North Canyons Parkway: Transit Center/Dublin Crossings, Hacienda (in Pleasanton), and Downtown Livermore, also shown on **Figure 3-2**. Plan Bay Area was updated in September 2017 to extend the planning horizon year to 2040. The Project is also included in Plan Bay Area 2040. The Project was approved for inclusion in the regional Transportation Improvement Program (TIP) in 2016, and is included in the current TIP (2019).

As characterized in Plan Bay Area 2040, planned growth throughout the Tri-Valley area will continue to increase transportation demand across all modes. In Dublin, planned development including buildout of the EEPA will result in the generation of new vehicle trips and new demand for transit services. Based on future development planned adjacent to the Project site in Dublin and more broadly in Dublin and Livermore, transportation demand on local roadways and the regional highway system will continue to increase over time. Alameda County Transportation Commission's (ACTC) traffic model reflects that average daily traffic volumes along I-580 adjacent to and in the vicinity of the Project site are anticipated to increase over time from over 147,000 vehicles in 2013 to over 170,000 vehicles in 2040, an increase of 16 percent.[9]

[8] Peak periods generally occur twice daily, once in the morning as commuters travel to work and again in the evening as commuters travel home. Morning and evening peak hours vary by location, and are determined based on observed traffic demand.
[9] Kittelson, 2018


Livermore City Limit
Alameda County Limit
Resource Management
Hillside Conservation
N Canyons Pkwy
Business Commercial Park
Dolan Rd
Large Parcel Agriculture
Alameda County Limit
Dublin City Limit
Single-Family Residential (0.9-6.0 du/ac)
Medium Density Residential (6.1-14.0 du/ac)
Industrial Park
580
General Commercial/Campus Office
Croak Rd
Open Space
General Commercial
Fallon Rd
Dublin Blvd
I-580 WB
Central Pkwy
Positano Pkwy
Legend
Project Alignment
Single-Family Residential
Medium Density Residential
Medium/High-Density Residential
General Commercial
General Commerical/Campus Office
Industrial Park
Business Commercial Park
Open Space
Resource Management
Hillside Conservation
Parks/Public Recreation
Semi-Public
Public/Semi-Public
Large Parcel Agriculture
N
0
0.1
0.2
0.4
Miles
Figure 3-4
General Plan Land Use
Source: City of Dublin, 2016; City of Livermore, 2014; Alameda County, 2000

Local Planning

The Project was envisioned to provide local circulation and access to "potentially developable areas" in Dublin, as first described in Dublin's General Plan Environmental Impact Report (1984), as well as some capacity relief to I-580 as a secondary, indirect benefit. Dublin's current General Plan and General Plan environmental impact report (EIR) also describe the Project as a physical link connecting the EEPA to the rest of Dublin and Livermore. The EEPA and General Plan land uses are shown in **Figure 3-4**.

Dublin's General Plan land use map identifies the EEPA for future development including residential, commercial, office, and industrial uses. These land uses are further planned for in the EDSP and EDSP EIR (1994, updated 2016) and Fallon Village SEIR (2005). These planning documents anticipate new residential, commercial, office, and industrial development in the EEPA east of Fallon Road extending to the city limits, with up to 3,108 new dwelling units and over 2,500,000 square feet of new commercial, office, and industrial uses.

However, the majority of this area is currently inaccessible from public roadways, with the exception of two private properties accessible from Croak Road and Collier Canyon Road. In order for planned development to occur, a major east-west roadway connection is needed and is anticipated to be provided through the extension of Dublin Boulevard to North Canyons Parkway.

The County's General Plan, East County Planning Area component, includes the Project as a roadway extension connecting eastern Dublin with Livermore across unincorporated County land. Livermore's General Plan Circulation Element (2014) includes a roadway extension from North Canyons Parkway connecting Doolan Road/North Canyons Parkway with Fallon Road. These documents describe a four- to six-lane roadway extension of Dublin Boulevard from Fallon Road to Doolan Road/North Canyon Parkway.

3.5 PROJECT COMPONENTS

The Project would include the extension of Dublin Boulevard approximately 1.5 miles eastward through eastern Dublin and an unincorporated portion of the County to the western boundary of Livermore (Project) as shown in **Figure 3-5a** and **Figure 3-5b**.

The roadway extension would start from the current terminus of Dublin Boulevard at the Dublin Boulevard/Fallon Road intersection in Dublin and would end at the Doolan Road/North Canyons Parkway intersection along the boundary of the County and Livermore. This roadway extension would provide four to six travel lanes and bicycle and pedestrian facilities (i.e., pathways, sidewalks and bike lanes). Beginning at Fallon Road, the roadway extension would have six travel lanes (three in each direction). Continuing eastward, the roadway extension would transition to four travel lanes (two in each direction) before or at the intersection with Croak Road. From Croak road to Doolan Road, the roadway extension would remain in the four lane configuration.

The permanent area required for the Project, including the roadway, sidewalks, intersections, and land acquired for right-of-way is estimated at 29 acres. Future average daily traffic (ADT) along the roadway extension is projected to be 17,000 to 19,000 vehicles per day.

LOCAL AND REGIONAL TRANSPORTATION NETWORK

The Project would provide a needed connection between developed areas of Dublin and the EEPA, and between Dublin and Livermore. The roadway extension would close a gap in the existing local roadway network, where Dublin Boulevard prematurely terminates within Dublin's city limits. The Project would provide additional roadway capacity in the EEPA. Similarly, the roadway extension would provide direct access from PDAs in Livermore (Isabel Avenue/Bay Area Rapid Transit Station) and Dublin (Town Center and Transit Center PDAs) to existing and planned employment and commercial areas in Dublin.

Currently, local and inter-city trips between Dublin and Livermore are completed using I-580, as there is no other direct connection between these municipalities or between downtown Dublin and eastern Dublin. The diversion of local trips onto the regional transportation network adds to congestion and indirectly generates additional air pollutants from traffic congestion. Additionally, use of I-580 for local trips may result in a longer trip length, requiring motorists to go out of their way to reach their destination. The Project would allow local users to shorten their trip distance by using local streets. The Project would include pedestrian and bicycle facilities such as sidewalks, multiuse pathways, bike lanes, and/or bikeways. New transit, bicycle, and pedestrian connectivity would provide local travelers an alternative to personal vehicles. The Project would allow for the future extension of bus service, as described in the EDSP, and would connect future development areas to regional transit (BART).

DESIGN FEATURES

Project design features and components are shown on **Figure 3-5a**, **Figure 3-5b** and **Figure 3-6**, and include (from west to east):

- Intersection improvements at Fallon Road (including modification of the signalized intersection)
- Elimination of the existing intersection of Croak Road and Fallon Road
- Abandonment of a north-south (frontage road) portion of Croak Road parallel to Fallon Road
- The addition of a "T" shaped hammerhead turnaround at the new terminus of Croak Road adjacent to Fallon Road
- Grading and earthwork northeast of the Dublin Boulevard/Fallon Road intersection, including grading at the base of the hills to the north, and more minor grading throughout the road alignment to meet engineering and safety requirements
- Removal of overhead utility lines between Fallon Road and Croak Road
- Creation of a new signalized intersection where the Dublin Boulevard extension would cross Croak Road
- Construction of a new bridge over Cottonwood Creek
- Construction staging and laydown between the extension and Collier Canyon Road, along Doolan Road

- Intersection improvements at the Doolan Road/North Canyons parkway intersection, including the creation of a new, signalized eastbound approach to the intersection
- The extension of underground utility lines within the Project site
- Construction of the new roadway, which would include a median, inside shoulder at some locations, vehicle travel lanes, bicycle facilities, a parkway strip, separated sidewalks and separated Class I bike path and/or a multi-use path, street lighting, and cut/fill embankments
- Retaining walls may be use in addition to, or as an alternative to, cut/fill embankments associated with roadway and hillside grading. If used, retaining walls would be placed outside of the sidewalk and bicycle areas on either side of the roadway cross section, within the construction footprint and within the permanent right-of-way. Retaining walls would measure 3 feet to 10 feet in height and would generally require a smaller area of grading or ground disturbance in comparison to cut/fill slopes.

Each of these components is discussed in more detail below. Right-of-way acquisitions would be needed from multiple private property owners and are also detailed below. Ancillary facilities associated with the Project include traffic signals, landscaping, irrigation, drainage, and stormwater treatment facilities, which are discussed below. **Appendix B** includes detailed exhibits of the improvements that would be constructed as part of the Project.

Intersection Improvements

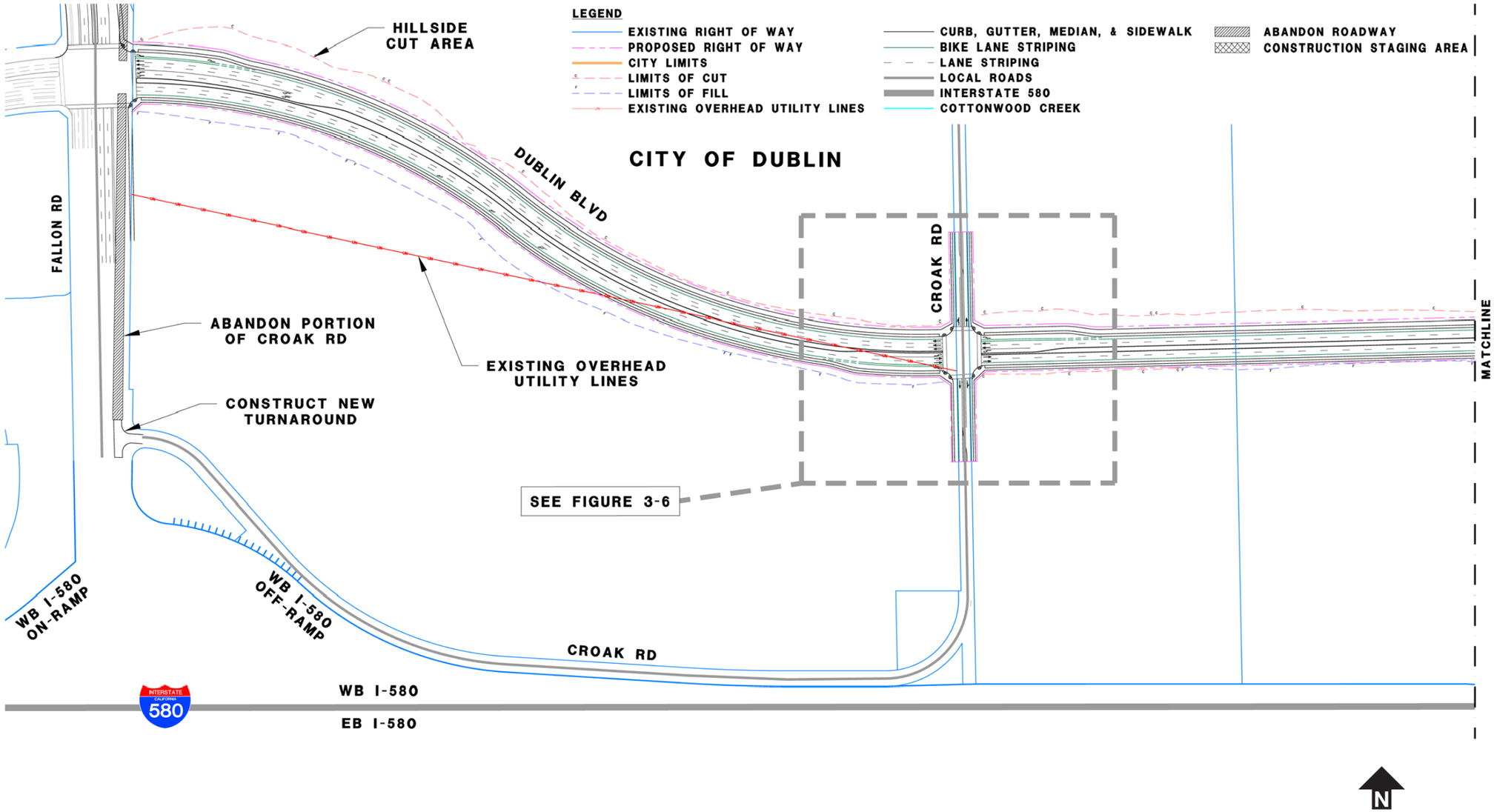
The Project would require the modification of two existing intersections and the creation of one new intersection. Assumptions for each intersection are described below from west to east. All intersection improvements are shown on **Figure 3-7a**, **Figure 3-7b**, and **Figure 3-8** and are detailed in **Appendix B**.

Modify Dublin Boulevard / Fallon Road Intersection

A new connection to the Dublin Boulevard/Fallon Road intersection would be constructed on the eastern side of the intersection. The intersection is currently a three-way or "T" intersection, with Dublin Boulevard terminating at Fallon Road. For the purposes of this analysis, it is assumed lane restriping and traffic signal modifications planned on the western side of the intersection as a part of the Kaiser Dublin Medical Center project would be implemented before construction of the Project. These improvements may cover the western side of the intersection (Dublin Boulevard) and some of the south side of the intersection (Fallon Road).

From the east, Dublin Boulevard would connect to Fallon Road with three eastbound travel lanes, three westbound travel lanes, two dedicated left turn lanes, and one dedicated right turn lane. The roadway connection would also include a center median dividing the eastbound and westbound lanes. New traffic signals and directional signage would be added to the intersection.

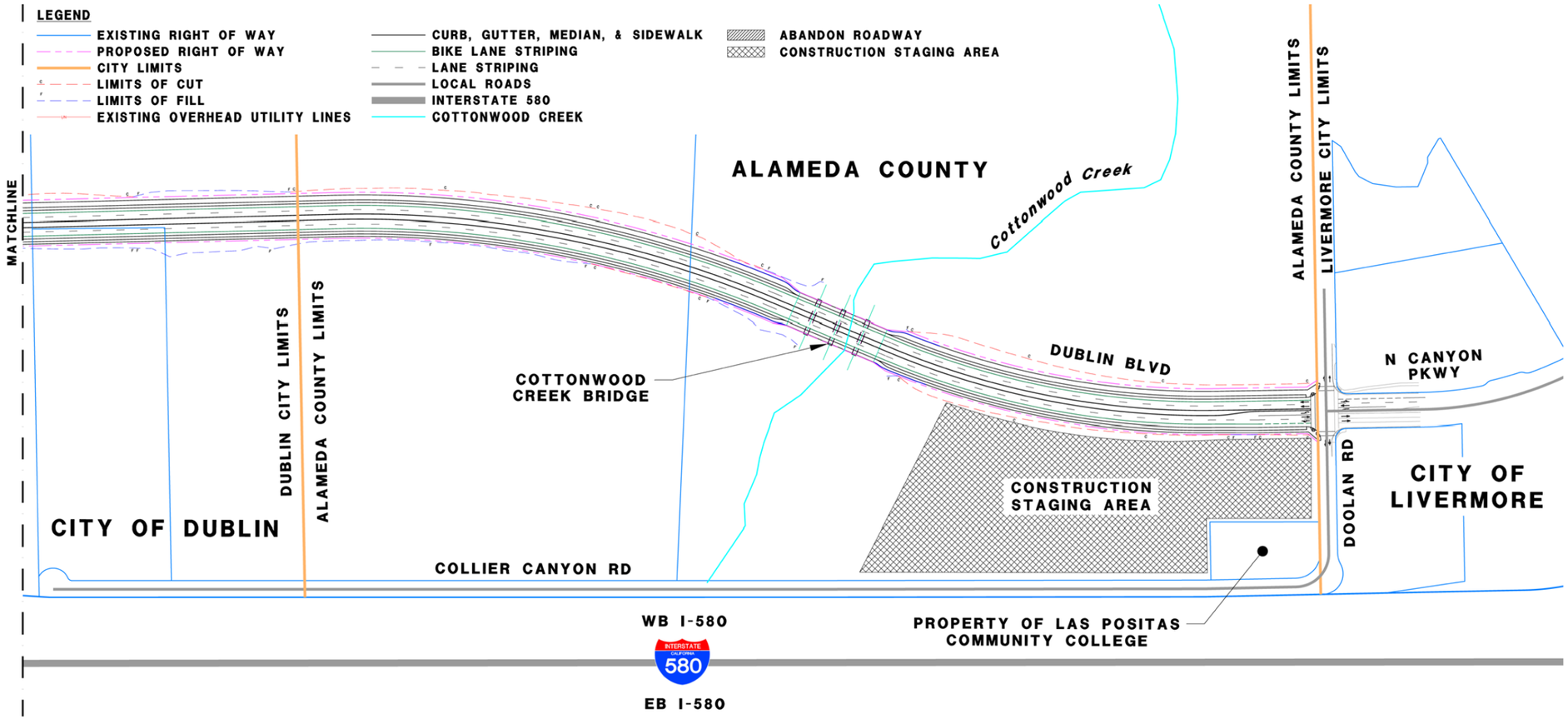
This Page Intentionally Left Blank



Proposed Improvements Figure **3-5a**

Source: BKF, 2019

This Page Intentionally Left Blank



Proposed Improvements Figure **3-5b**

Source: BKF, 2019

This Page Intentionally Left Blank

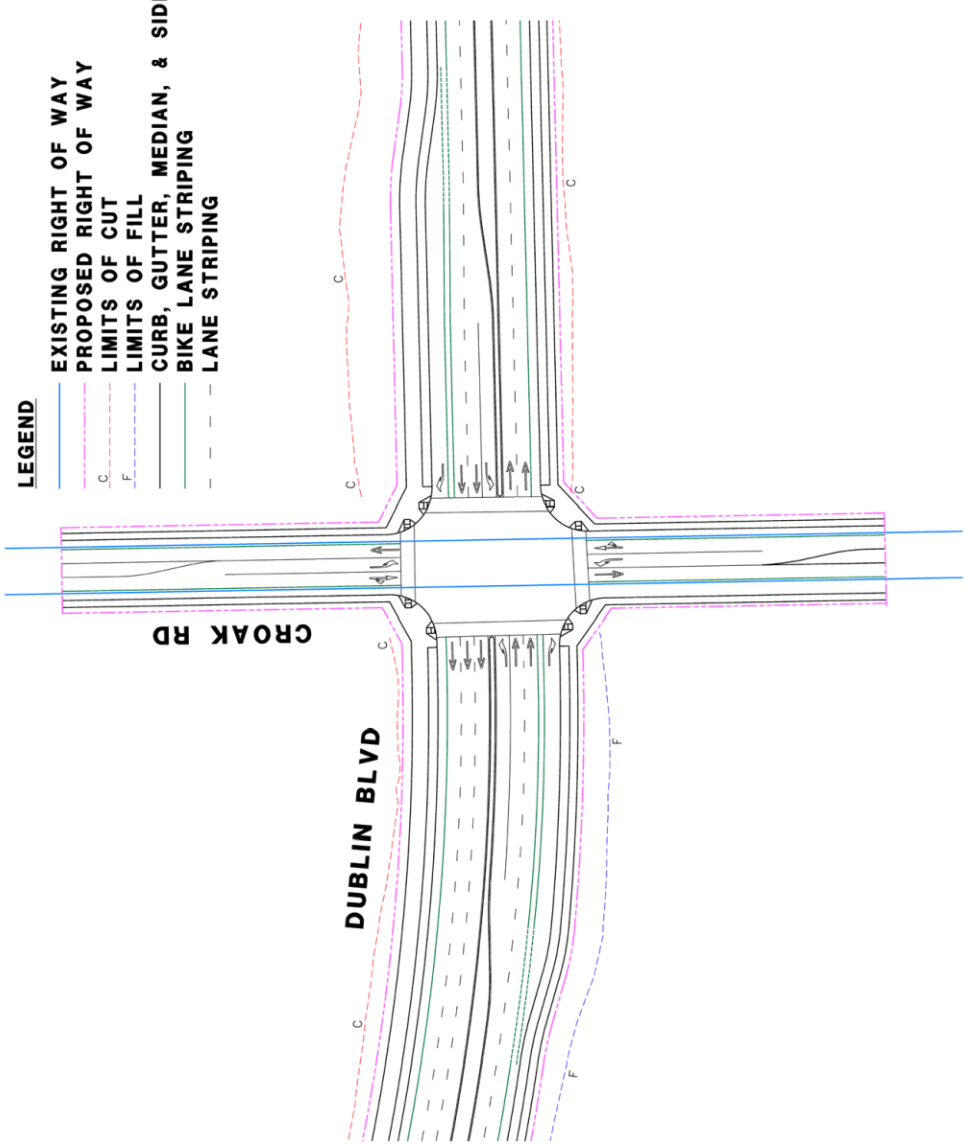


Figure 3-6

Proposed Improvements – New Croak Road Intersection

Source: BKF, 2019

To allow for the extension of Dublin Boulevard, the existing north-south alignment of Croak Road parallel to Fallon Road would be abandoned in place by restricting vehicular access with fencing or a similar barrier, and the connection of Croak Road to Fallon Road at the Dublin Boulevard/Fallon Road intersection would be removed. The abandoned segment of Croak Road would be left in place and would likely be removed when Fallon Road is widened under a separate project, or if and when the parcels located to the east within Dublin are developed.

Since the intersection of Croak Road and Fallon Road would be eliminated and a portion of Croak Road abandoned, a new western terminus of Croak Road would be created. To allow continued use of Croak Road in this area, a new "T" shaped hammerhead turn around would be constructed, as shown on **Figure 3-7a**.

Create Dublin Road / Croak Road Intersection

A new intersection would be created where the Project intersects Croak Road in the generally undeveloped area east of Fallon Road. Currently, there is no intersection of Dublin Boulevard and Croak Road, or any other intersections along Croak Road in the immediate area. Croak Road is a two lane roadway which runs in a north-south direction.

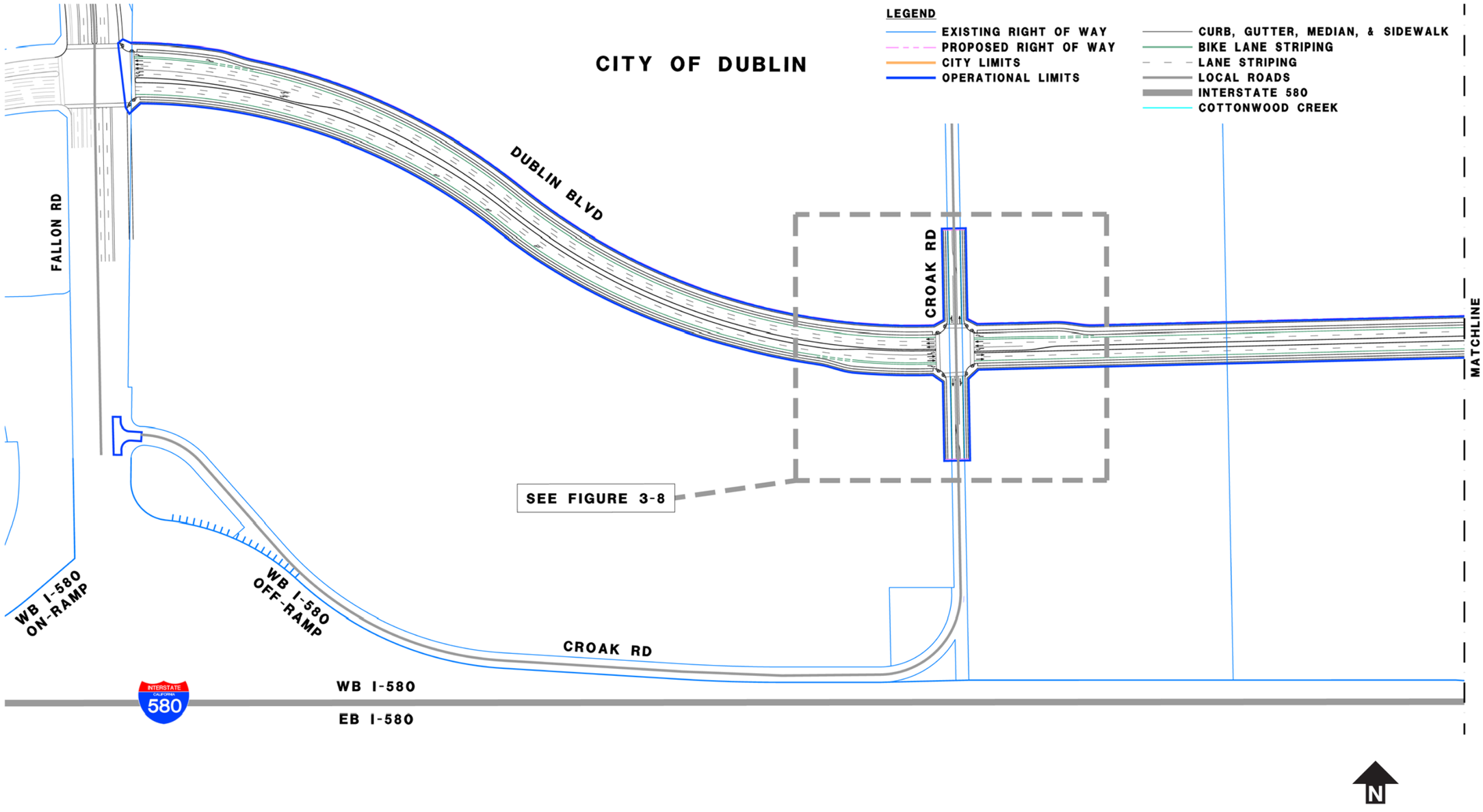
Project improvements would create a four-way signalized intersection at Croak Road. From the west, Dublin Boulevard would connect to Croak Road with two eastbound travel lanes,[10] three westbound travel lanes, one dedicated left turn lane, and one dedicated right turn lane. From the east, Dublin Boulevard would connect to Croak Road with two westbound and eastbound travel lanes, one dedicated left turn lane, and one dedicated right turn lane.

Croak Road would be modified at this intersection to have a shared right hand turn lane in the current travel lane on both sides of the intersection and one dedicated left turn lane on each side of the intersection. New traffic signals and directional signage would be added to the intersection.

Modify North Canyons Parkway / Doolan Road Intersection

A new connection to the Doolan Road/North Canyons Parkway intersection would be constructed on the western side of the intersection. The intersection is currently a three-way or "T" intersection, with North Canyons Parkway terminating at Doolan Road. From the west, Dublin Boulevard would connect to Doolan Road/North Canyons Parkway with one eastbound travel lane, one eastbound lane with a shared right hand turn, one dedicated left turn lane, and two westbound travel lanes. The new roadway connection would also include a center median dividing the eastbound and westbound lanes. The eastern side of the existing intersection would be restriped to include two eastbound lanes, one westbound travel lane, one westbound lane with shared right hand turn, and one dedicated left turn lane. New traffic signals and directional signage would be added to the intersection.

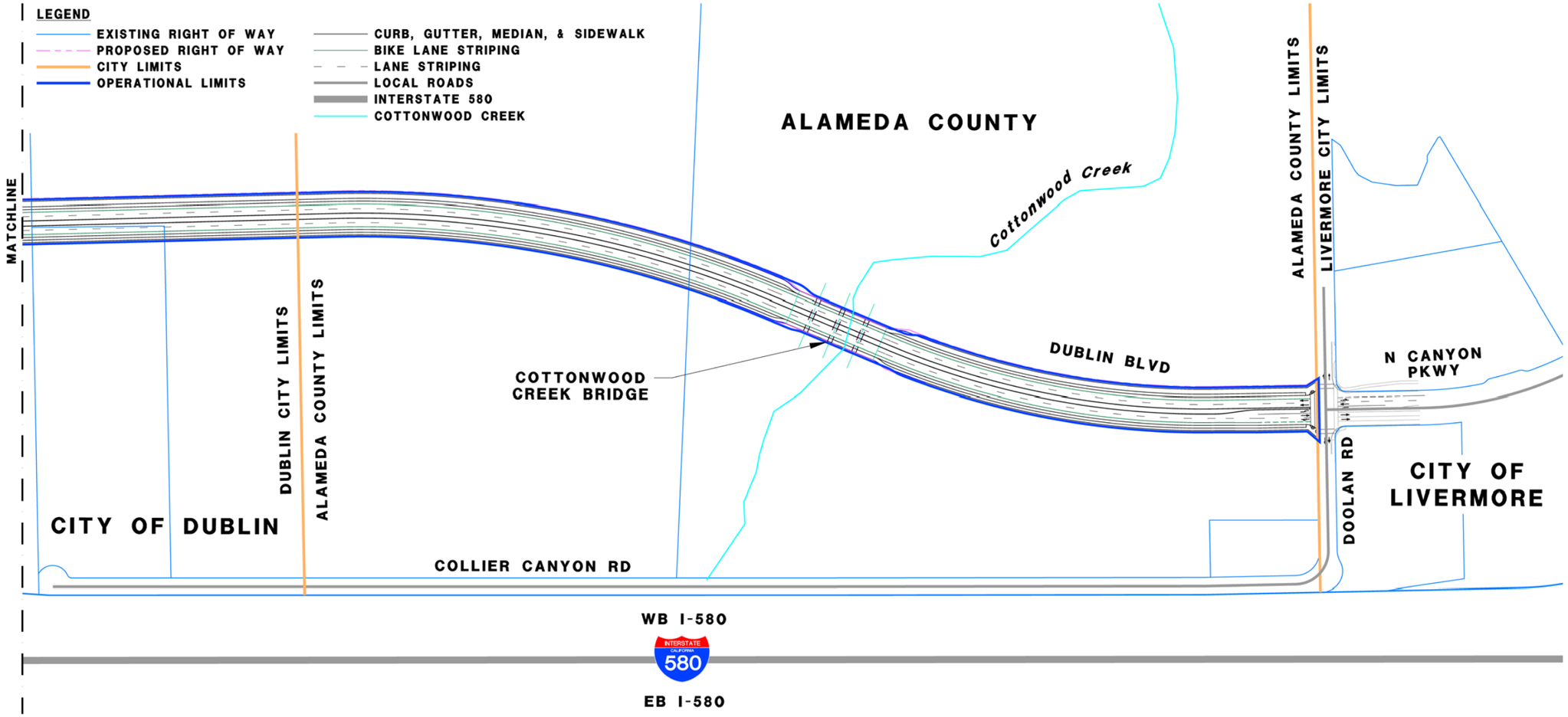
[10] As described in Section 3.3, eastbound Dublin Boulevard would narrow from three travel lanes to two travel lanes before intersecting Croak Road.



Operational Footprint Figure **3-7a**

Source: BKF, 2019

This Page Intentionally Left Blank



Operational Footprint Figure **3-7b**

Source: BKF, 2019

This Page Intentionally Left Blank

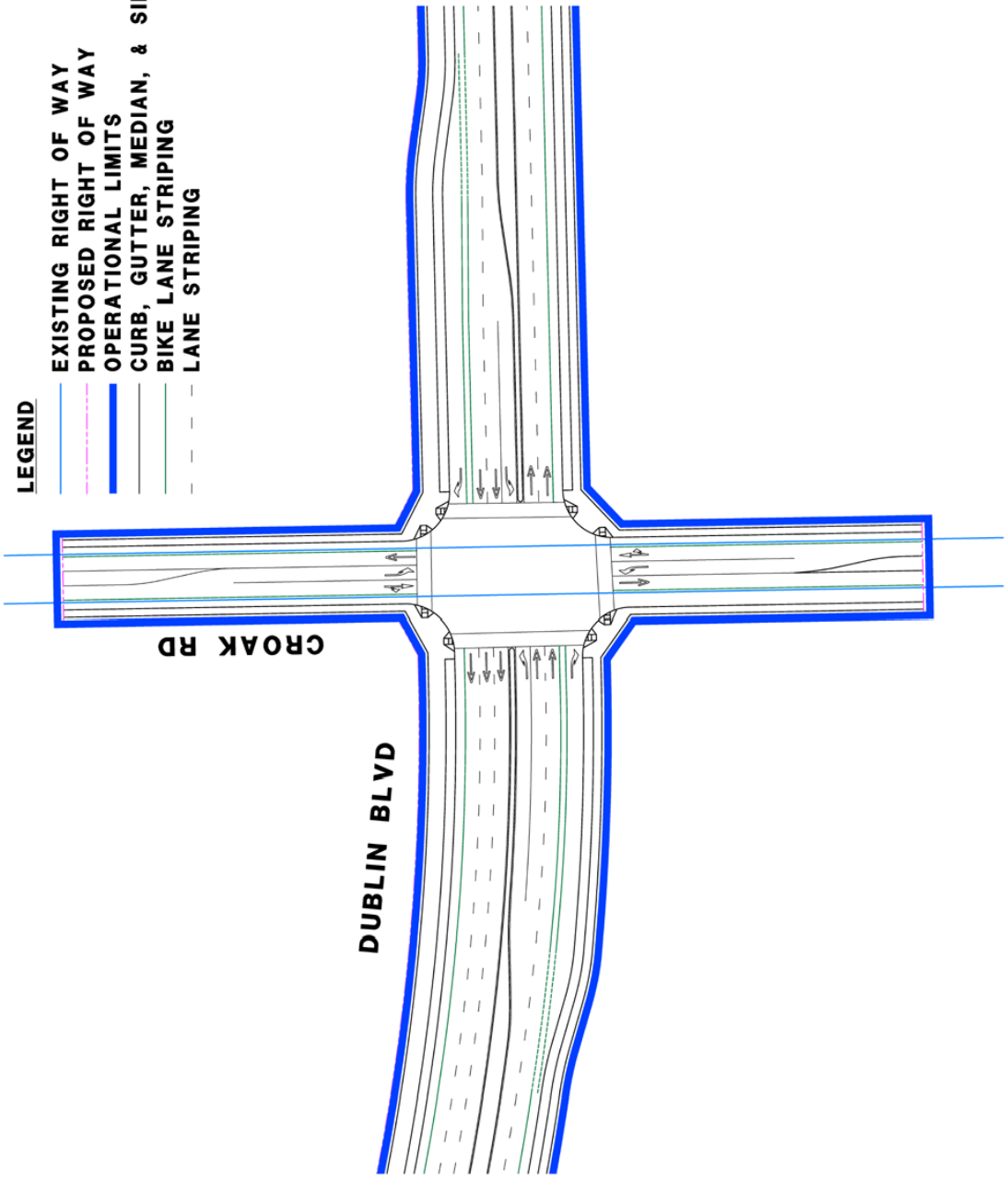


Figure 3-8

Operational Footprint – New Croak Road Intersection

Source: BKF, 2019

Roadway Features

Starting from the centerline, roadway features would typically include:

- Median areas which would be paved, landscaped, and/or include post-construction stormwater treatment and hydromodification areas
- Inside (striped) shoulder in some locations
- 12-foot travel lanes
- 8-foot shoulder and bike lanes (Class II)
- Parkway strips, which in various locations would be paved, landscaped, and/or include post-construction stormwater treatment and hydromodification areas.
- Separated multi-use pathway (Class I bikeway) along the north side of the roadway
- Separated sidewalks along the south side of the roadway
- Landscape strips on the outside perimeter
- Cut/fill embankment areas which would include 3:1 earthen-slopes finished with landscaping and/or erosion control. Retaining walls may be used in addition to, or as an alternative to, cut/fill embankments associated with roadway and hillside grading.
- Americans with Disabilities Act (ADA) compliant curb ramps and crosswalks at each of the three intersections

Culverts

Cross culverts would be installed under the roadway to allow existing drainage patterns to continue across the Project site from north to south. Six culverts would be installed: one at the Dublin Boulevard/Fallon Road intersection, two between Fallon Road and Croak Road, and three between Croak Road and Doolan Road. Culvert design and sizing would be developed to ensure existing drainage is continued, and is anticipated to include 18-inch culverts and 4-foot by 2- foot box culverts. Culverts may have open bottoms to keep native swales intact where feasible.

Cottonwood Creek Bridge

Cottonwood Creek is a perennial stream that flows through the Project site in a generally north to southwest direction as shown on **Figure 3-7b**. The Project would cross Cottonwood Creek from west to east with a new bridge. Cottonwood Creek would be bridged to minimize changes to the existing watercourse and aquatic wildlife passage. The type of bridge structure and details would be determined during final Project design. However, preliminary engineering has identified a possible three-span option requiring two piers and two abutment structures. The piers and other permanent structures, such as footings, would not be placed in the perennial stream limits of Cottonwood Creek. Construction of the bridge may require access within the perennial stream limits for temporary water diversion and/or dewatering.

Bicycle and Pedestrian Facilities

The Project would improve connectivity between Fallon Road and Doolan Road, where there are no pedestrian or bicycle facilities today. The Project would include bicycle and pedestrian facilities along the entire length of the roadway extension. A multiuse pathway (with Class I bikeway) is proposed along the northern side of the roadway extension, and a bikeway/bike lane (Class II) is proposed along the southern side adjacent to vehicle travel lanes. A sidewalk is proposed along south side of the roadway extension. Bicycle facilities inside the street curb to curb (travel way) would be a minimum of Class II.[11] Approximate configurations of pedestrian and bicycle facilities throughout the roadway extension are shown on **Figure 3-9** and **Figure 3-10**. Pedestrian and bicycle facilities would be designed to meet current design standards.

Pedestrian and bicycle access to the Project would be from the Dublin Boulevard/Fallon Road and Doolan Road/North Canyons Parkway intersections. These intersections currently do not have pedestrian crosswalks in the east-west direction. The Project would include the addition of full pedestrian signals and crosswalks at both modified intersections and at the new intersection of Dublin Boulevard and Croak Road. Signal timing would be adjusted to provide sufficient time to accommodate both pedestrian and bicycle movements at the intersections. New bicycle and pedestrian connections along Dublin Boulevard would allow users to take a shorter, more direct route between Dublin and Livermore, avoiding the current route for bicycles and pedestrians which is approximately 5 miles long and crosses I-580 at two locations. This would create safer conditions for bicyclists and pedestrians.

Transit Facilities

The primary goal of transit service in the study area is to increase ridership, improve access to BART, and reduce system inefficiencies. The Project would provide a roadway connection on the north side of I-580, better connecting Dublin and Livermore and providing transit operators an alternative local route that avoids the heavy congestion on I-580 during peak commute periods. This would improve the efficiency of local transit routes by reducing delay and trip distance through a more direct route. The Project would also provide the opportunity for transit connections to future land use development along the roadway extension, as outlined in Dublin's General Plan. The Project would be consistent with, and support the goals of, ACTC's Countywide Multimodal Arterial Plan and the Livermore Amador Valley Transit Authority (LAVTA) long- and short-term plans, including the Wheels Short Range Transit Plan for 2016 through 2025.

As future commercial, office, and industrial development is implemented adjacent to the Project in Dublin, transit stops are anticipated to be added as described in Dublin's General Plan. Since the location of transit stops would be correlated with the location of major development, access roads, and curb cuts, the precise number and location of transit stops would be determined at a later time, as a part of individual development project approvals or collectively under a separate project. The Project does not include specific transit facilities, but does not preclude their future implementation.

[11] A Class II bike lane provides a striped lane for one-way bike travel on a street.

The Project design includes flexibility for implementation of future queue jumps to benefit transit operations. A queue jump provides preference to transit vehicles (such as buses) by providing an additional approach lane at an intersection, or allowing transit vehicles to use turning lanes to bypass long intersection queues. This lane is often restricted to transit vehicles only, but may also serve a dual purpose as a right turn lane. Once a transit vehicle is detected in a queue jump lane, the transit vehicle receives signal priority. This reduces delay for the transit vehicle at the intersection. To accommodate queue jumps, the Project has been designed with longer right turn lanes at the Dublin Boulevard/Fallon Road and future Dublin Boulevard/Croak Road intersections. These lanes can be converted to exclusive or shared transit queue jump lanes in the future based on the needs of the local transit agency.

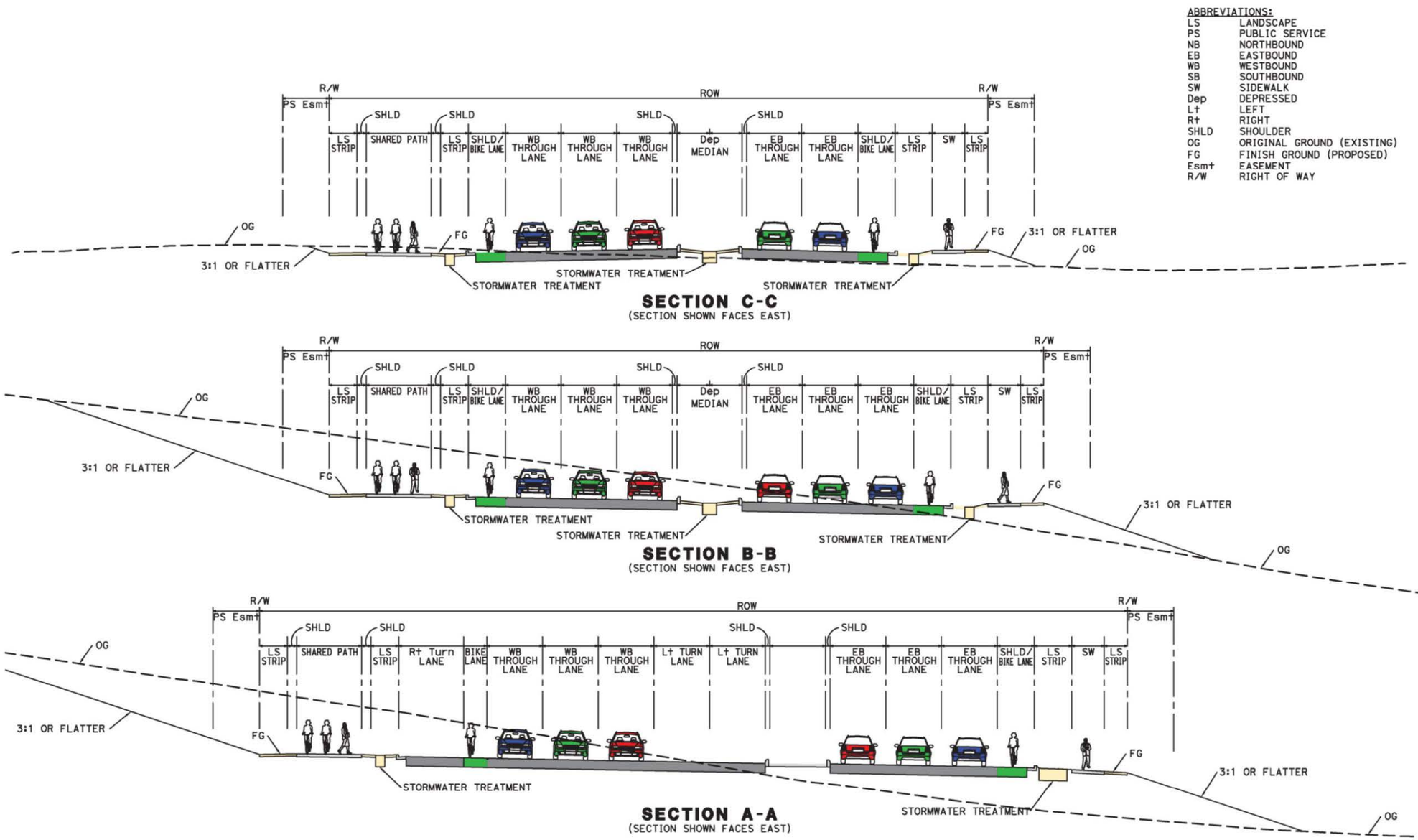
Ancillary Project Components

Stormwater Treatment

The Project would include facilities to collect and treat stormwater runoff from new impervious surfaces, such as asphalt and concrete. Bioswales would be constructed in the median and parkway strips to help treat stormwater runoff, and would also operate as hydromodification controls to capture and slow stormwater. Bioswales work by employing biofiltration. Biofiltration is a pollution control technique using living material (vegetation) and sub-surface media such as sand and gravel to capture sediment and pollutants from stormwater runoff. After being treated in bioswales, stormwater runoff would discharge into the stormwater system through a storm drain which would be installed beneath the new roadway. If, during final Project design, it's determined that biofiltration areas would not sufficiently provide hydromodification capacity to control stormwater flows off-site, there are two additional components which could be implemented to handle stormwater flows: detention basins and an oversized underground storm drain.

If needed, detention basins would be installed at the base of the roadway embankments. Detention basins temporarily detain stormwater, allowing sediment in the stormwater settle to the bottom of the basin, before discharging the water through an outlet. These facilities would provide additional stormwater storage and would regulate stormwater discharge to collecting water bodies.

The need for, precise number, location, and design of detention basins have not yet been determined, and would be developed during final Project design if needed. Therefore, a preliminary concept design for detention basins was utilized for the purposes of this Draft EIR: detention basins would be installed within the operational footprint, up to 50 feet from the edge of pavement. In addition to biofiltration areas, detention basins would provide ample space in which to accommodate and treat stormwater. Alternatively, stormwater could be accommodated through oversized underground storm drain lines or underground storage vaults.



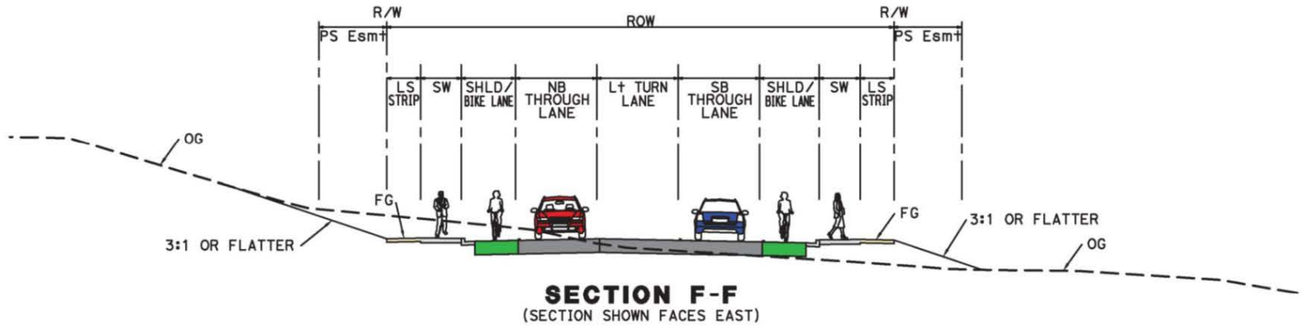
Typical Sections Figure **3-9**

Source: BKF, 2019

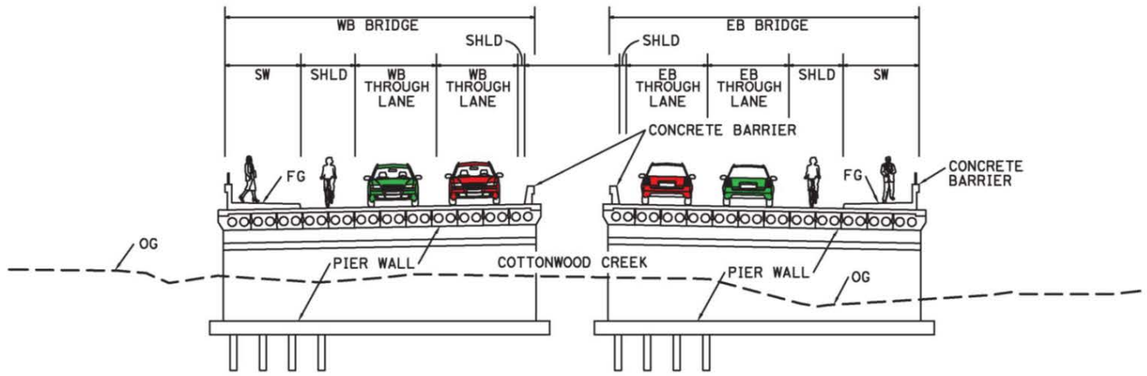
This Page Intentionally Left Blank

ABBREVIATIONS:

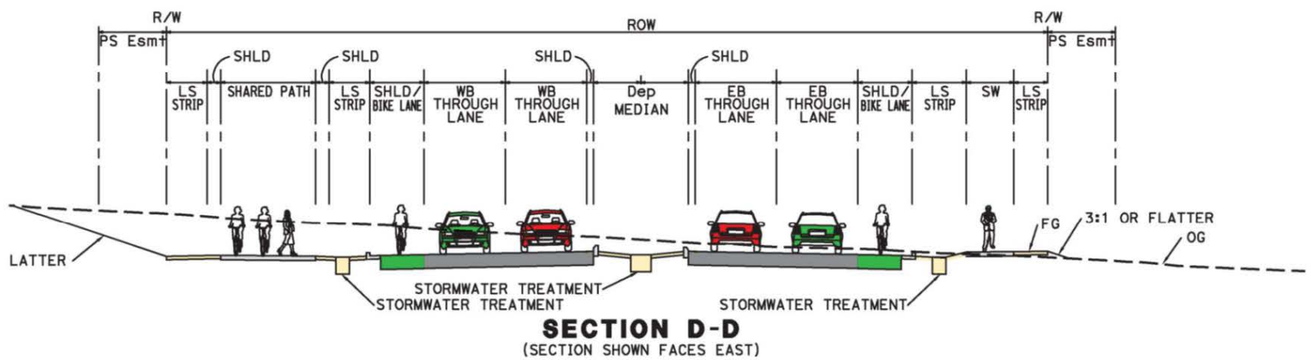
LS	LANDSCAPE
PS	PUBLIC SERVICE
NB	NORTHBOUND
EB	EASTBOUND
WB	WESTBOUND
SB	SOUTHBOUND
SW	SIDEWALK
Dep	DEPRESSED
L†	LEFT
R†	RIGHT
SHLD	SHOULDER
OG	ORIGINAL GROUND (EXISTING)
FG	FINISH GROUND (PROPOSED)
Esm†	EASEMENT
R/W	RIGHT OF WAY



SECTION F-F
(SECTION SHOWN FACES EAST)



SECTION E-E
(SECTION SHOWN FACES EAST)



SECTION D-D
(SECTION SHOWN FACES EAST)

N

Typical Sections Figure **3-10**

Source: BKF, 2019

This Page Intentionally Left Blank

Safety Lighting

The Project would include new street lighting to provide roadway visibility for drivers during nighttime hours. Lighting would be provided along the roadway extension through high-efficiency LED streetlights, similar to those used throughout Dublin and as required under Dublin's Climate Action Plan. Street lights would be selected to meet the photometric requirements for each jurisdiction. Street lights would be placed on both sides of the roadway extension at appropriate intervals and at all intersections. Typical light shielding or directional devices would be used as required under each jurisdiction's municipal code to reduce light pollution.

Utilities and Utility Easements

The following utility companies have known facilities adjacent to the Project site:

- Dublin/San Ramon Services District (DSRSD)
- Livermore Municipal Water
- Pacific Gas and Electric (PG&E)
- AT&T
- Verizon, Comcast/Cablecom

To provide electrical power and communications to Project traffic signals and streetlights, and easy access for connections to these services for future development projects in eastern Dublin, electrical and communications conduits would be extended underground from existing sources along the roadway in a joint trench system. Extending electrical and communication conduit would require trenching and/or horizontal directional drilling. Installation of pull boxes, controller cabinets, and service enclosures for electrical, communications and/or fiber optic conduits would also be required.

Additionally, new underground water mains (potable), recycled water mains, sewer mains, and storm drains would be provided along the roadway extension to provide utility access for future development. Water, recycled water, and wastewater utilities would be extended from existing DSRSD lines at Fallon Road in Dublin. The water line would be extended from the Dublin Boulevard/Fallon Road intersection eastward to the future Doolan Road/North Canyons Parkway intersection. Wastewater and recycled water lines would be extended only from the Dublin Boulevard/Fallon Road intersection to the eastern edge of Dublin. Aside from landscape irrigation, the Project would not include uses or new structures that would tie in to new water lines or utility lines. Permanent utility easements may be required on private properties. Although the exact location and area of utility easements has not yet been determined, for the purposes of this Draft EIR it is anticipated to coincide with the permanent right-of-way acquisitions identified in **Table 3-1**. Utilities installed as a part of the Project are anticipated to be within the Project site.

The Project would include the relocation of existing overhead electrical transmission lines that run diagonally from Fallon Road to Croak Road (**Figure 3-5a**). This would include the removal of telephone poles and undergrounding of the relocated electrical lines as part of the proposed utility

joint trenching for the Project. Alternatively, the electrical lines would be relocated to the roadway extension and telephone poles may be abandoned in place.

Landscaping

Ornamental landscaping would be installed along the roadway extension in accordance with policies and design guidelines outlined in Dublin's General Plan and the EDSP. Landscaping plans would be developed during final Project design. However, preliminary opportunities for landscaping have been identified along either side of the shared bicycle and pedestrian path along the north side of the Project, along either side of the sidewalk along the south side of the Project, and in center medians. Landscaping would likely coincide with biofiltration strips and biofiltration swales.

The EDSP requires the use of drought-resistant plants within public right-of-way, including medians, and prohibits the use of highly invasive plant species that could out-compete native species and threaten wildlife habitat. All new vegetation would be planted outside of the clear recovery zone or as required under current design standards.[12]

Signage

New roadway signs would be installed along the roadway extension, primarily at intersections. New roadway signs may include posted speed limits and other regulatory signage, directional signs, and other informational signage. New signs are anticipated to be consistent with other signs found along Dublin Boulevard, North Canyons Parkway and throughout the County.

Intelligent Transportation Systems (ITS)

The Project would include high-level Intelligent Transportation Systems (ITS) technology such as:

- Infrastructure to allow for the remote monitoring and active management of field devices
- Traffic signals which are interconnected and communicate information back to a central location, such as a traffic management center
- The inclusion of devices such as closed-circuit television cameras, adaptive signal timing controls, and/or transit signal priority controls which can be monitored and reacted to in real time from a central location
- Devices such as changeable message signs to actively inform drivers and influence traffic flow in real time from a central location
- Technologies which allow next-generation vehicles to communicate with roadway infrastructure in real time

All of the infrastructure, devices, and technologies listed above would be installed within the right-of-way acquired for the Project.

[12] A clear recover zone is an unobstructed, traversable roadside area that allows a driver to stop safely, or regain control of a vehicle that has left the roadway.

Right-of-Way Requirements

The Project would be constructed within generally undeveloped private property in Dublin and the County. Private property right-of-way acquisitions would not be required in Livermore. Right-of-way acquisitions would be needed from multiple private property owners, as shown in **Table 3-1** below. No displacement of any existing residences or businesses would be required.

Table 3-1 Permanent Right-of-Way Acquisitions

Assessor's Parcel Number	Jurisdiction	Right-of-Way Acquisition in square feet (sf)
985-0027-002	Dublin	470,000 sf
905-0001-006-03	Dublin	125,000 sf
905-0001-005-02	Dublin	100,000 sf
905-0001-004-04	Dublin	90,000 sf
905-0001-004-03	Dublin	20,000 sf
905-0001-003-02	County	160,000 sf
905-0001-001-02	County	250,000 sf

Source: BKF, 2018

CONSTRUCTION

The Project would be constructed along the alignment shown in **Figure 3-5a** and **Figure 3-5b**, through largely undeveloped areas of Dublin and the County. Construction is anticipated to occur over 1.5 years and would be generally completed during daytime hours. It is possible that nighttime work may occur at signalized intersections in Dublin and Livermore for safety and convenience reasons. Project construction at individual locations along the alignment would be shorter than the total 1.5 year duration, as construction moves along the alignment. To construct the Project, an area larger than the Project site would be used for temporary access, construction staging, and equipment laydown. Additionally, grading work would occur beyond the limits of the operational footprint. The construction footprint is estimated to be 84 acres in size and is shown in **Figure 3-11**.

Construction Methods

Construction activities would include but are not limited to: demolition; earthwork; paving; pile driving; concrete, rebar, and formwork; utility trenching; and roadway striping. Throughout the roadway extension, grading would be required to provide a safe roadbed with a vertical geometry that meets Dublin and the County's engineering and safety standards. Under existing conditions, the grade changes along the proposed alignment – small hills and valleys – are too steep to safely and

comfortably accommodate the roadway extension. Therefore, both cut and fill areas have been identified to create a generally more level area. Grades for cut and fill slopes would be 3:1 or less wherever feasible and would meet Dublin's engineering and safety standards in Dublin and the County's equivalent standards in unincorporated County areas.

Due to the topography of the Project site, Project construction would require cut (excavation) and grading northeast of the Dublin Boulevard/Fallon Road intersection. There is an uphill slope with an average grade of 5:1 at this location. As an alternative to excavation and grading in this and other portions of the project site, retaining walls may be used along the roadway extension and would result in a smaller construction footprint. The final determination on which areas would be graded only, and which areas would include retaining walls, would be made during final Project design.

Due to the grading work described above, Project construction is anticipated to generate approximately 100,000 cubic yards of soil and other demolition material that would be disposed of off-site. The Project would require fill material in some locations, and it's anticipated that soil excavated elsewhere along the roadway extension could be used as fill material, provided it meets minimum geotechnical requirements. This would reduce the amount of imported fill and total disposal amount to be hauled off-site. However, it's possible that engineered fill may need to be imported. Therefore, appropriate construction disposal and borrow sites would be required and would be determined as part of the final Project design.

The Project would require excavation ranging from 2 feet to 40 feet in depth. The installation of bridge piles for the crossing of Cottonwood Creek are anticipated to require depths exceeding 40 feet. The precise depth needed for bridge piles has not yet been determined, therefore, a conservative estimate of up to 100 feet has been used for the purposes of this Draft EIR. Construction activities anticipated for the Project and their corresponding construction depths are listed in **Table 3-2**.

Table 3-2 Anticipated Construction Activities and Depth of Excavation

Activity	Typical Depth feet (')
Roadway/Pavement construction, Tree planting, installation of Roadway Sign Posts	2'-5'
Cut/Fill for roadway	0'-20'
Traffic Signal	5'-13'
Utility Installation	2'-5'
Sewer (manholes and main lines)	5'-40'
Electrolier (Streetlight)	5'-10'
Bridge Piles	100'
Culverts and Stormdrain Inlets	3' to 40'
Grading of construction staging and laydown area	1'-2'

Source: BKF, 2018

Staging and Temporary Construction Easements

Construction staging and equipment laydown areas would be required. Possible options have been identified on private parcels at the eastern end of the Project site, south of the roadway extension and north of Collier Canyon Road (**Figure 3-11**).

Construction access would be provided primarily from the existing intersections of Dublin Boulevard/Fallon Road and North Canyons Parkway/Doolan Road, and possibly from the adjacent local roadways including Croak Road, Doolan Road, and Collier Canyon Road. Depending on construction timing and phasing, the Project could require a temporary closure or detour while construction occurs at the Dublin Boulevard/Fallon Road, Croak Road, and North Canyons Parkway/Doolan Road intersections. Temporary construction easements may be required on seven private properties, identified in **Table 3-3**.

Table 3-3 Temporary Construction Easements

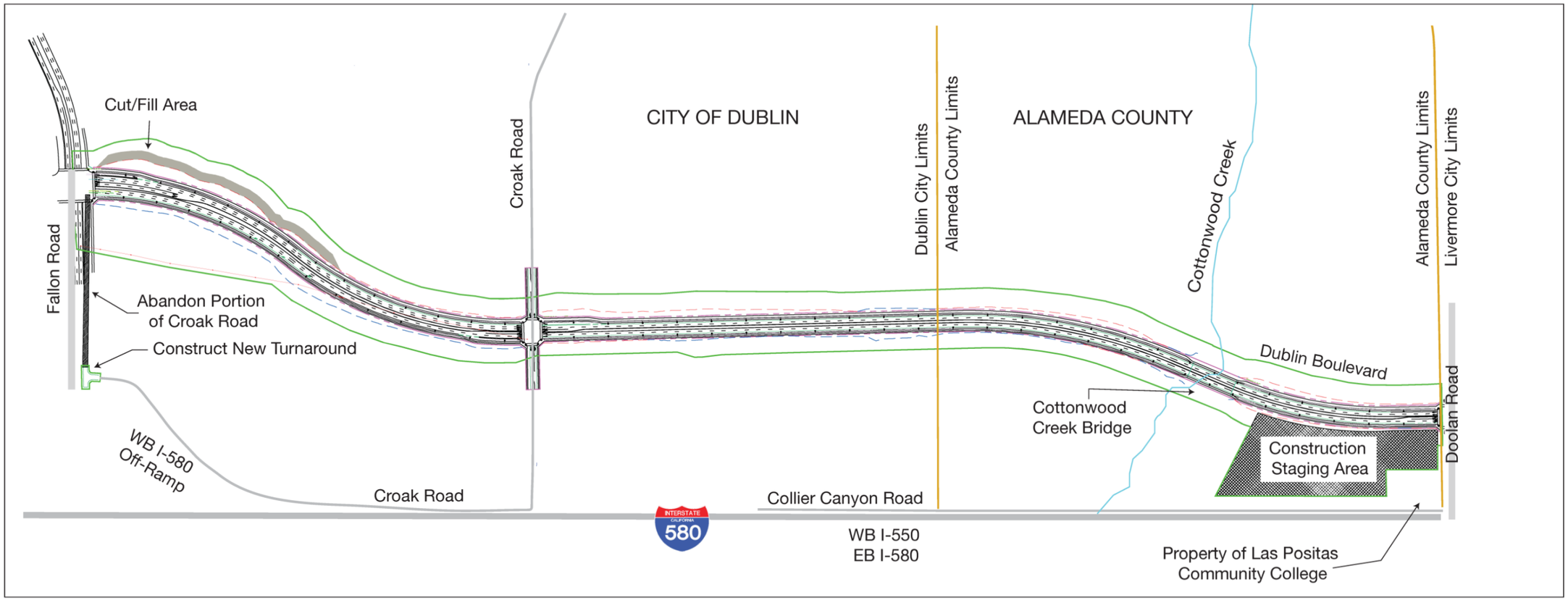
Assessor's Parcel Number	Temporary Construction Easement Area Square Feet (sf)
985-0027-002	65,000 sf
905-0001-006-03	25,000 sf
905-0001-005-02	16,000 sf
905-0001-004-04	15,000 sf
905-0001-004-03	5,000 sf
905-0001-003-02	25,000 sf
905-0001-001-02	500,000 sf (Including laydown/staging area)

Source: BKF, 2018

Construction Vehicles and Construction-Period Traffic

During construction, vehicles and equipment would need to travel to and from the Project site. This would include the movement of large trucks, concrete mixers, and heavy construction equipment. Both Dublin and Livermore have existing approved truck routes within their jurisdictions, and it is anticipated that construction vehicles would use these existing routes to travel to and from the Project site. Approved truck routes are shown in **Figure 3-12** and **Figure 3-13**.

This Page Intentionally Left Blank



Legend

- Existing Right of Way
- Proposed Right of Way
- Limits of Cut Grading
- Limits of Fill Grading
- Electric Overhead Utility
- City Limits
- Curb, Gutter, Median, & Sidewalk
- Lane Striping
- Interstate 580
- Local Roads
- Construction Limits
- Cottonwood Creek
- Abandon Roadway
- Construction Staging Area

N

0 50 100 200

FEET

Project Construction Footprint Figure **3-11**

Source: BKF, 2018

This Page Intentionally Left Blank

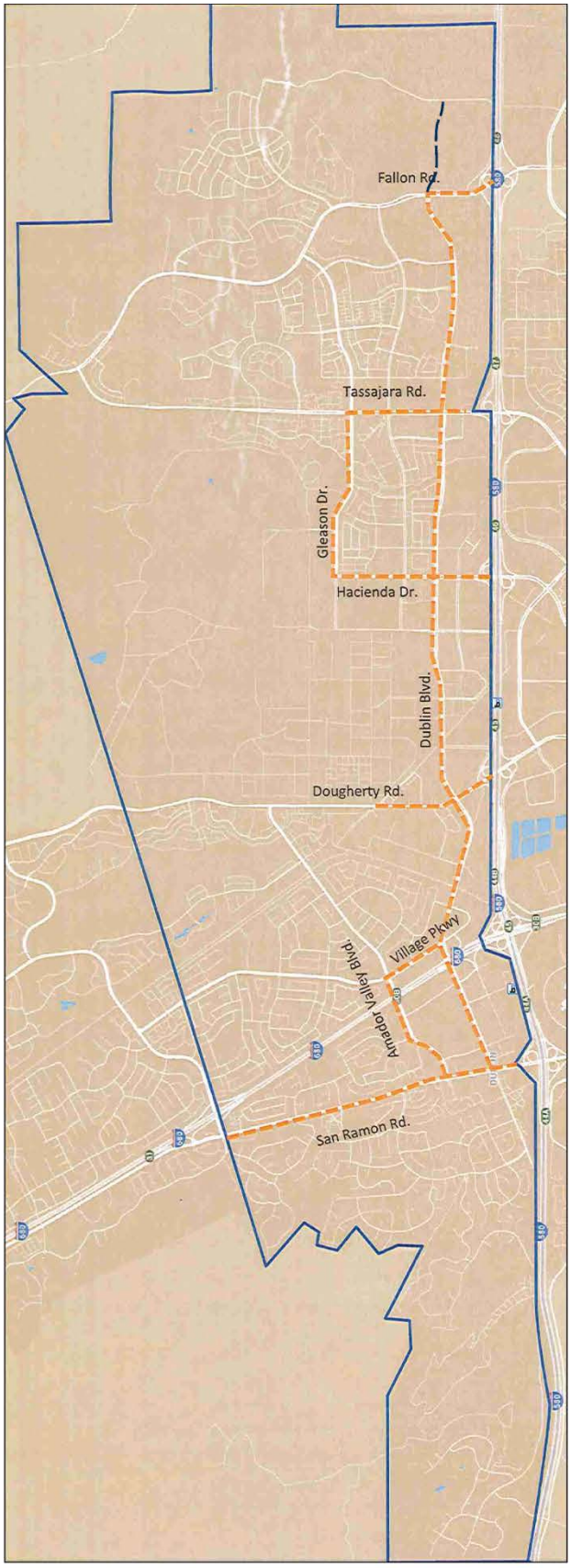


Figure 3-12

Dublin Truck Routes

Source: City of Dublin, 2014

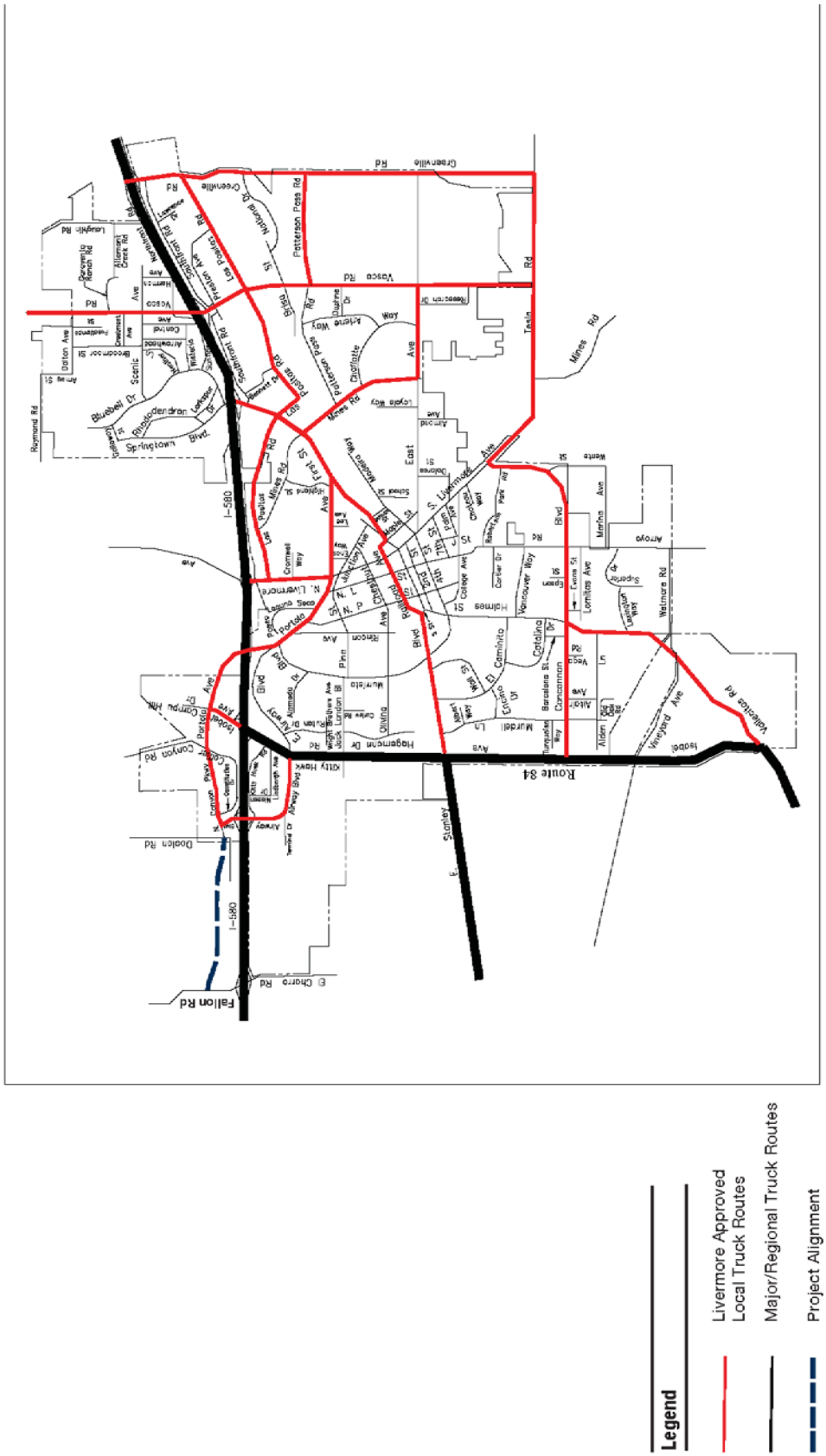


Figure 3-13

Livermore Truck Routes

Source: City of Livermore, 2014

3.6 PROJECT OBJECTIVES

The Project would improve east-west local roadway connectivity between Dublin, the County, and Livermore, and improve mobility, multimodal access, and efficiency for all roadway users. The Project would also support an integrated corridor management strategy.

Thus, the objectives for the Project are as follows:

- Eliminate a gap in local roadway network connectivity between the cities of Dublin and Livermore, and improve interconnectivity between Dublin and Livermore PDAs
- Establish transportation facilities and other public infrastructure to serve planned development in the Dublin and Livermore General Plans, EDSP, and Plan Bay Area
- Reduce demand on the local highway system by providing local access to existing and planned land uses, including residential, commercial, industrial, and business uses, and local destinations on an alternate local route that is complementary to I-580
- Reduce local trip lengths in Dublin and between Dublin and Livermore by diverting localized inter-city trips from I-580
- Provide complete streets and mutimodal access between Dublin and Livermore, particularly for key public facilities such as Las Positas College, consistent with the requirements of Senate Bill (SB) 375 and regional complete streets policies on multimodal roadways and sustainable transportation
- Indirectly relieve congestion on I-580 by providing a completed local route on the north side of I-580 between west of I-680 in Dublin to SR-84 in Livermore

This Page Intentionally Left Blank

4 INTRODUCTION TO ENVIRONMENTAL ANALYSIS

This chapter provides an introduction to the analysis provided in this Draft Environmental Impact Report (EIR). The environmental assessment methodology, effects found not to be significant, and cumulative approach to impact analysis are described in this chapter.

4.1 ENVIRONMENTAL ASSESSMENT METHODOLOGY

The environmental analysis provided in **Chapter 5.0, Environmental Impact Assessment,** describes the potential environmental impacts associated with construction and operation of the Project. The analysis considers public comments received during the scoping process (see **Appendix A** of this Draft EIR). In general, the analysis of each environmental topic consists of five sections: introduction, regulatory setting, existing conditions, impacts and mitigation measures (including cumulative impacts), and references. An overview of the information included in these sections is provided below.

INTRODUCTION

The introduction section outlines the topic being analyzed and the contents of the analysis. It provides the sources used to evaluate the potential impacts associated with the Project. Additionally, it lists issues and concerns identified by the public and agencies during the EIR scoping process.

REGULATORY SETTING

The overview of regulatory considerations for each resource topic is organized by agency, including applicable federal, state, regional, and local laws and policies. Local regulatory discussions include plans, policies, and regulatory documents from the City of Dublin (Dublin), Alameda County (County), and the City of Livermore (Livermore), as applicable.

EXISTING CONDITIONS

Existing conditions establishes the study area for the topic and describes the environmental setting in the study area. Study areas vary by topic, to ensure an appropriate geographic area is taken into consideration. Existing conditions provide a baseline for comparing "before the Project" and "after the Project" scenarios. According to Section 15125(a) of the California Environmental Quality Act (CEQA) Guidelines, the environmental setting is typically the on-the-ground condition at the time the Notice of Preparation (NOP) is published. The NOP for this Project was published in May 2017. Existing conditions in 2017 are used as the baseline for comparing existing conditions to conditions with implementation of the Project. Where specific changes to the existing environment have occurred since 2017, and those changes could affect the results of the impact analysis in this Draft EIR, the baseline conditions have been updated. This primarily applies to residential development which has been constructed north and west of the Project site, and the opening and subsequent closure of a school on North Canyons Parkway.

IMPACTS AND MITIGATION MEASURES

This section lists significance criteria that are used to evaluate impacts, followed by a discussion of the methodology used to evaluate impacts against the significance criteria. This section then discusses impacts that would result from implementation of the Project. Significance criteria are assigned a letter in each section, to make navigation in the impacts discussion more efficient for the reader. The impact discussion is organized as follows:

> "No Impact Summary": At the beginning of each impact analysis, a summary of significance criteria with a "no impact" determination is provided, and the significance criterion is not discussed further. If there were no "no impact" determinations for the topic, a statement to that effect can be found under this header.
>
> "Impacts of the Project": After the summary of "no impact" determinations, the remaining significance criteria are presented. For each significance criteria, potentially significant impacts are discussed first along with mitigation, followed by less-than-significant impacts.

Significance criteria define specific thresholds used to determine whether a Project impact would be significant under CEQA. The impact evaluation in this Draft EIR takes into account the whole action associated with the Project, including offsite and onsite, Project and cumulative, direct and indirect, and construction and operational impacts.

Classification of Impacts

Under CEQA, a variety of terms are used to describe adverse impacts. The definition of terms used in this Draft EIR is presented below.

Significant and Unavoidable Impact

A significant and unavoidable impact is an impact that exceeds the defined standards of significance and cannot be avoided or reduced to a less-than-significant level through implementation of reasonable and feasible mitigation measures.

Significant Impact

A significant impact is an impact that exceeds the defined standards of significance and can be avoided or reduced to a less-than-significant level through implementation of reasonable and feasible mitigation measures.

Less-Than-Significant Impact

A less-than-significant impact is an impact that is adverse but that does not exceed the specified standards of significance.

No Impact

A "no impact" determination is provided when there would not be an impact to the existing environment.

Mitigation

For potential significant impacts, mitigation measures are provided and identify the means by which impacts could be reduced or avoided. Standard existing regulations, requirements, permits, programs, and procedures that are applied to all similar projects are taken into account in the Project analysis prior to identifying additional Project-specific mitigation that may be needed to reduce significant impacts. Where reasonable and feasible mitigation would not be sufficient to reduce impacts to a less-than-significant level, a significant unavoidable impact is identified.

MITIGATION MONITORING

Public Resources Code Section 21081.6 establishes two distinct requirements for agencies involved in the CEQA process. Subdivisions (a) and (b) of the section relate to mitigation monitoring and reporting, and the obligation to mitigate significant effects where possible. Pursuant to subdivision (a), whenever a public agency completes an EIR and makes a finding pursuant to Section 21081(a) of the Public Resources Code taking responsibility for mitigation identified in the EIR, the agency must adopt a program of monitoring or reporting which will ensure that mitigation measures are complied with during implementation of the Project. After public circulation of the Draft EIR, public comments will be addressed and a Final EIR will be prepared. Based on the Final EIR, a mitigation monitoring and reporting program (MMRP) will be prepared and will identify responsible parties and timing for all mitigation measures.

4.2 EFFECTS FOUND NOT TO BE SIGNIFICANT

Pursuant to the CEQA Guidelines Section 15128, "An EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR." Based on the scope of the Project, comment letters in response to the NOP, site visits, and review of Project plans and technical reports, the following resource topics were found to not have impacts that would be considered potentially significant. Therefore, these topics are not discussed further in this Draft EIR.

AGRICULTURAL RESOURCES

Federal Regulations

The Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with state and local units of government and private programs and policies adopted to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years.

State Regulations

The California Land Conservation Act of 1965

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value.

Local Regulations

City of Dublin

Dublin has established an Urban Limit Line and is also part of a Development Elevation Cap as a long-term commitment by Dublin to manage growth and protect agricultural uses east of Dublin. Dublin's General Plan and the Eastern Dublin Specific Plan include development of urban uses in eastern Dublin, within the Urban Limit Line.

Alameda County

The County has established an Urban Growth Boundary for the purpose of concentrating development and preserving undeveloped land for open space and agricultural uses. The East County Area Plan includes policies that support the maintenance of the Urban Growth Boundary, specifically in relation to the permanent protection of the agricultural area between Dublin and Livermore.

City of Livermore

Livermore is completely surrounded by an Urban Growth Boundary. The boundary is intended to protect existing agricultural uses and natural resources outside Livermore from future urban development.

Existing Conditions

The Farmland Mapping and Monitoring Program (FMMP) designates the Project site as entirely grazing land, on which the existing vegetation is suited to the grazing of livestock. The Project site is defined in **Chapter 3.0, Project Description**, and shown on **Figure 3-7** and **Figure 3-11**. Site visits confirmed areas of the Project site are used for livestock grazing. The areas surrounding the Project site to the west of Fallon Road, south of Interstate I-580 (I-580), and east of Doolan Road are designated primarily as Urban and Built-Up land. No Prime or Unique farmlands, or farmlands of local or statewide importance, exist within or adjacent to the Project site. Mapping for agricultural land protected under Williamson Act contracts was also reviewed. The Project site and adjacent properties do not contain any agricultural land protected under the Williamson Act, and the Project site is entirely designated as "Non-Enrolled Land"; land not enrolled in a Williamson Act contract and not mapped by FMMP as Urban and Built-Up Land or Water. Additionally, there are no forest resources or Timber Production Zones within the Project site or on nearby parcels.

Project Impacts

No protected farmlands or timberlands exist within the Project site or vicinity. The Project would not include any change in land use, or any development of uses incompatible with existing land uses or the land use policies contained in each jurisdiction's General Plan. The Project would support implementation of the General Plans of each jurisdiction, which include the extension of Dublin Boulevard eastward to connect with North Canyons Parkway. The Project would not directly or indirectly introduce new, unplanned development in Dublin, County or Livermore, and would therefore not conflict with the urban growth limits established by those jurisdictions. Therefore, no impact would occur.

MINERAL RESOURCES

The Project site lies within Mineral Resource Zone 1 (MRZ-1), as mapped by the California Geological Survey (formerly the California Division of Mines and Geology). MRZ-1 zones are "areas where adequate information indicates that no significant mineral despots are present, or where it is judged that little likelihood exits for their presence". The northern extent of the Project's construction footprint may overlap with Mineral Resource Zone 4 (MRZ-4), which is defined as "areas where available information is inadequate for assignment to any other MRZ zone". The Project site is not a mineral resource recovery site. Therefore, no impacts to mineral resource recovery would occur.

Due to the high value of sand and gravel deposits in the vicinity of Livermore, the California Geological Survey has mapped and classified the aggregate resources of the Livermore-Amador Valley. Most of the valley floor south of I-580 is classified as an area of significant mineral resources. This portion of the valley floor includes areas classified as Mineral Resource Zone 2 (MRZ-2) and Mineral Resource Zone 3 (MRZ 3). An MRZ-2 is an area where adequate information indicates that significant mineral deposits are present. Areas classified as MRZ-3 are considered to contain mineral deposits, but the significance of the deposits cannot be determined on the basis of available information. The Project would not indirectly impede access to these sites, based on the distance between these resources and the Project site, and the project type. Therefore, the Project would not indirectly interfere with mineral resource recovery. No impact would occur.

4.3 CUMULATIVE IMPACTS

Under CEQA, cumulative impacts are defined as two or more individual effects, which when considered together, are considerable or that compound or increase other environmental impacts. A cumulative impact is the change in the environment that results from the incremental impact of a project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines Section 15355).

CUMULATIVE IMPACT ANALYSIS METHODOLOGY

Consistent with CEQA Guidelines, Section 15130(a), the discussion of cumulative impacts in this Draft EIR focuses on significant and potentially significant cumulative impacts and whether the Project would have a considerable contribution to those impacts. According to CEQA Guidelines, Section 15130(b), "the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great a detail as provided for the effects attributable to the Project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

A contribution to a cumulative impact may be considered less than significant if the project will include implementation of a plan or program designed to avoid the cumulative impact (CEQA Guidelines Section 15064[h]), or if the project will implement or fund its fair share of a mitigation measure designed to alleviate the cumulative impact (CEQA Guidelines Section 15130[a]).

The majority of the analysis presented in this Draft EIR uses the City of Dublin's General Plan and EIR, the County's East County Area Plan, and Livermore's General Plan to identify cumulative impacts and to determine whether the Project would make a considerable contribution to an identified cumulative impact. Additionally, this Draft EIR considers relevant development projects within the Project vicinity (within a 1,000 foot radius), as summarized in **Table 4-1**. This approach is used for all topics evaluated in this Draft EIR minus air quality, noise, and traffic. The cumulative impact approach for air quality, noise, and traffic uses traffic volumes based on forecasts from the Alameda County Transportation Commission Countywide traffic model. The most recent version of the countywide model is based on land use assumptions from the Association of Bay Area Governments' Projections 2013 (Plan Bay Area) with a base year of 2013, an interim year of 2025 and a long-range year of 2040. The interim year (2025) represents the anticipated opening year for the Project. The 2040 volumes are used for cumulative analysis. This model anticipates future land use changes within the region and future roadway improvements expected to occur by 2040.

Table 4-1 Present and Reasonably Foreseeable Projects

Project	Description	Status and Timing
Dublin		
Grand View Project	Mixed-use development on 122 acres, including residential, retail, dining, hotel, fitness, office, and private recreational uses.	Under Review
Alameda County		
None		
Livermore		
1000 Airway Boulevard	Demolish existing hotel and construct two new hotels, one containing 122 guest rooms and one containing 119 guest rooms	Approved
2000 Freisman Road	Up to 244,152 square feet of new retail, restaurant, hotel, and auto dealership uses	Under Construction
5200 Wolf House Drive (2000 Freisman Road)	New hotel with 122 guest rooms	Approved
5400 Wolf House Drive (2000 Freisman Road)	New hotel with 104 guest rooms	Approved

Source: City of Dublin, 2018; Alameda County, 2018; City of Livermore, 2018

4.4 REFERENCES

California Department of Conservation. 2018. *Farmland Mapping and Monitoring Program*. Available: http://www.conservation.ca.gov/dlrp/fmmp. Accessed: 11/27/18.

CA Department of Mines and Geology. 2018. *California Geological Survey*. Accessed at http://www.conservation.ca.gov/cgs. Accessed: 11/27/18.

This Page Intentionally Left Blank

5 ENVIRONMENTAL IMPACT ANALYSIS

Pursuant to Section 15125(a) of the California Environmental Quality Act (CEQA) Guidelines, an environmental impact report (EIR) must include a description of the physical environmental conditions in the vicinity of the project. This is referred to as the environmental setting, or existing conditions. The purpose of this requirement is to give the public and decision makers an accurate and understandable picture of a project's likely near-term and long-term impacts.

The environmental setting will normally constitute the baseline physical conditions that the Lead Agency will compare the impacts of the Project against, to determine whether a project impact would be significant. Generally, the Lead Agency should describe physical environmental conditions as they exist at the time the notice of preparation (NOP) is published. The NOP for the Project was published on May 18, 2017. For the purposes of this Draft EIR, the environmental setting is established as existing conditions on May 18, 2017. For some topics that require a broad review of information available from state and federal sources, such as the evaluation of greenhouse gas emissions or population trends, precise information on the environmental setting in May 2017 is not available. When this is the case, the most recently available data or information prior to May 2017 is used to represent the environmental setting.

This chapter presents an analysis of each resource topic that is likely to be affected by the Project. The list of topics examined in this Draft EIR was established through preliminary environmental analysis and the public scoping process. Each subsection of this chapter describes the environmental setting (titled "Existing Conditions") as it relates to the specific resource topic. The environmental setting discussion is followed by an evaluation of potential impacts, their significance, and mitigation measures that would avoid, reduce, or compensate for potentially significant and significant impacts. The following topics are addressed in this chapter:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Population and Housing
- Public Services
- Transportation and Traffic
- Utilities and Services Systems

For topics not included in the list above, please refer to **Chapter 4.0, Introduction to Environmental Analysis** for a summary of effects found not to be significant. These topics include agricultural resources and mineral resources.

This Page Intentionally Left Blank

5.1 AESTHETICS

INTRODUCTION

This section evaluates the Project's effect on aesthetics. Information in this section is primarily drawn from the *Visual Impact Assessment* (VIA) prepared for the Project, which identified visual resources on the Project site and included visual analysis as well as effect determinations. The VIA is available on file with the City of Dublin at 100 Civic Plaza, Dublin, California.

Scoping Issues Addressed

No public or agency comments related to aesthetics were received during the public scoping period for this Draft environmental impact report (EIR).

REGULATORY SETTING

Federal

There are no applicable federal regulations.

State

State Scenic Highway Program

The Caltrans Scenic Highway Program is intended to protect and enhance the natural scenic beauty of California's highways and adjacent corridors, through special conservation treatment. The program protects against encroachment of incompatible land uses, mitigates and minimizes development activities along scenic corridors, prohibits billboards, and regulates grading activity. Once a scenic highway designation is granted, a wide range of protections apply to the designated corridor, including a prohibition on off-premise advertising displays, colloquially known as billboards.

Classified Landscaped Freeways

Caltrans-classified "Landscaped Freeways" are landscaped freeways with plantings that meet the State Outdoor Advertising Regulations criteria. These regulations are used in the control and regulation of outdoor advertising displays, and are not an indication of an area that should be protected as a scenic corridor. Criteria for Landscaped Freeways include freeways with plantings on at least one side within the state right-of-way that are continuous (no gaps greater than 200 feet), ornamental, at least 1000 feet long, and require reasonable maintenance.

Local

City of Dublin

City of Dublin General Plan

Scenic resources are addressed in the Land Use Element and Scenic Highways Element of the City's General Plan. The following designated scenic resources and policies are relevant to the Project:

Policy 2.8.13.C	Development shall be subordinate to and blend harmoniously with the natural and open space qualities of the area where located, in order not to impair those qualities and to be as unobtrusive as possible. In all cases, appropriate landscaping, preservation of vegetation, screening, building materials, design, and limits on surface alternations shall be required by the City to reduce as much as practicable the visibility of development.
Policy 2.8.13.D	Exterior lighting, including roadway lighting, shall be designed and placed, to the maximum extent practicable, to confine direct rays to the parcel or roadway where the lighting is located and to protect the darkness of the night sky.
Guiding Policy 5.7.1A.1	Incorporate County-designated scenic routes, and the Fallon Road extension, in the General Plan as adopted City-designated scenic routes, and work to enhance a positive image of Dublin as seen by through travelers.
Implementing Policy 5.7.1.B.1	Exercise design review of all projects visible from a designated scenic route.
Implementing Policy 5.7.1.B.2	Implement the Eastern Dublin Scenic Corridors Policies and Standards for projects within the Eastern Extended Planning Area.

Eastern Dublin Specific Plan

The Eastern Dublin Specific Plan (EDSP) discusses several goals, policies, and programs dedicated to preserving visual resources within the City of Dublin (Dublin). Such resources include the open hills, creeks, major stands of vegetation and general open space. The following designated scenic resources and policies are relevant to the Project:

Policy 6-4	Preserve views of designated open space areas.

Policy 6-28 Preserve the natural open beauty of the hills and other important visual resources, such as creeks and major stands of vegetation.

Policy 6-31 High quality design and visual character will be required for all development visible from designated scenic corridors.

Policy 6-32 Visual impacts of extensive grading shall be reduced by sensitive engineering design, by using gradual transitions from graded areas to natural slopes and by revegetation.

Policy 6-33 Site grading and access roads shall maintain the natural appearance of the upper ridgelands or foreground hills within the viewshed of travelers along I-580, Tassajara Road, and the future extension of Fallon Road. Streets should be aligned to follow the natural contours of the hillsides. Straight, linear rows of streets across the face of hillsides shall be avoided.

Policy 6-34 Alterations of existing natural contours shall be minimized. Grading shall maintain the natural topographic contours as much as possible. Grading beyond actual development areas shall be for remedial purposes only.

Policy 6-35 Extensive areas of flat grading are not appropriate in hillside areas, and should be avoided. Building pads should be graded individually or stepped, wherever possible. Structures and roadways should be designed in response to the topographical and geotechnical conditions.

Policy 6-37 Graded slopes shall be re-contoured to resemble existing landforms in the immediate area. Cut and graded slopes shall be revegetated with native vegetation suitable to hillside environments.

Policy 6-38 The height of cut and fill slopes shall be minimized to the greatest degree possible. Grades for cut and fill slopes should be 3:1 or less whenever feasible.

Policy 6-39 Tassajara Creek and other stream corridors, as shown on Figure 4.1, are visual features that have special scenic value for the planning area. The visual character of these corridors should be protected from unnecessary alteration or disturbance, and adjoining development should be sited to maintain visual access to the stream corridors.

Alameda County

Alameda County General Plan

The Alameda County General Plan defines and discusses three types of scenic routes: scenic freeways and expressways, scenic thoroughfares, and scenic rural-recreation routes. Scenic resources are also discussed in the Scenic Route Element and East County Area Plan, both of which

are part of the larger Alameda County General Plan, and include Interstate 580 (I-580), the ridgelines above Doolan and Collier Canyon, and the resource management area separating eastern Dublin and northern Livermore. The following designated scenic route element objectives and policies are relevant to the Project:

- To establish a continuous system of routes, that will be convenient to all persons in Alameda County, and that will increase the enjoyment of, and opportunities for, recreational and cultural pursuits and tourism in Alameda County and adjacent counties by providing for scenic pleasure drives and scenic routes to all major recreation areas and cultural centers throughout the country and adjacent areas.
- To conserve, enhance, and protect scenic views observable from scenic routes.
- On downslope scenic corridors along routes with outstanding scenic views, no building structure of more than one story should project above the highest point of the paved road directly in front of the building structure, and no wall, fence, solid row of trees or other plants should project above the building structure or above the roadbed, whichever is higher. Where single story building structures are higher than the roadbed, there should be no wall, fence, or plant material that is not located directly between the main building structure and the roadbed that will obstruct the view from automobiles on the scenic route.

Alameda County General Plan, East County Area Plan

The East Alameda County Area Plan includes several policies and goals meant to preserve visual resources. Such policies discuss scenic ridgelines, open space, viewsheds, landscaping, utility lines, and grading techniques. The following policies are relevant to the Project:

Ridgelines

Policy 105 The County shall preserve the following major visually-sensitive ridgelines largely in open space use:

2. The ridgelines of Schafer, Shell, Skyline, Oak and Divide Ridges west of Dublin and the ridgelines above Doolan Canyon east of Dublin

3. The ridgelines above Collier Canyon and Vasco Road and the ridgelines surrounding Brushy Peak north of Livermore

Community Separators

Policy 109 The County shall preserve community separators largely in open space in the following locations:

1. The Resource Management area of approximately 7,400 acres separating East Dublin and North Livermore

Viewsheds

Policy 112 The County shall require development to maximize views of the following prominent visual features:

1. The major ridgelines listed in Policy 105;
2. Brushy Peak, Donlan Peak, and Mount Diablo; and
3. Cresta Blanca, near Arroyo Road South of Livermore.

Landscaping

Policy 114 The County shall require the use of landscaping in both rural and urban areas to enhance the scenic quality of the area and to screen undesirable views. Choice of plants should be based on compatibility with surrounding vegetation, drought-tolerance, and suitability to site conditions; and in rural areas, habitat value and fire retardance.

Policy 115 In all cases appropriate building materials, landscaping and screening shall be required to minimize the visual impact of development. Development shall blend with and be subordinate to the environment and character of the area where located, so as to be as unobtrusive as possible and not detract from the natural, open space or visual qualities of the area. To the maximum extent practicable, all exterior lighting must be located, designed and shielded so as to confine direct rays to the parcel where the lighting is located.

Alteration of Landforms

Policy 116 To the maximum extent possible, development shall be located and designed to conform with rather than change natural landforms. The alteration of natural topography, vegetation, and other characteristics by grading, excavating, filling or other development activity shall be minimized. To the extent feasible, access roads shall be consolidated and located where they are least visible from public view points.

Grading

Policy 117 The County shall require that where grading is necessary, the off-site visibility of cut and fill slopes and drainage improvements is minimized. Graded slopes shall be designed to simulate natural contours and support vegetation to blend with surrounding undisturbed slopes.

Policy 118 The County shall require that grading avoid areas containing large stands of mature, healthy vegetation, scenic natural formations, or natural watercourses.

Utilities

Policy 120 The County shall require that utility lines be placed underground whenever feasible. When located above ground, utility lines and supporting structures shall be sited to minimize their visual impact.

City of Livermore

City of Livermore General Plan

Although the majority of the Project activities and planned improvements would occur outside of The City of Livermore (Livermore)'s jurisdiction, scenic views from public areas of Livermore could be impacted. Livermore residents and visitors on the western edge of town looking toward the hills would see the roadway extension.

Scenic resources are addressed in the Community Character Element and the Land Use Element of Livermore's General Plan. Policies in the Land Use Element generally focus on the construction of new buildings, and therefore would not apply to the Project. The following policies are relevant to the Project:

CC-4.1.P1 Development shall not be allowed to obscure, detract from, or negatively affect the quality of the views from designated scenic routes.

CC-4.1.P2 The City shall maintain in open space that portion of the hills which is seen from the freeway and which is within the I-580 Scenic Corridor as shown in Figure 4-1. Any development within the I-580 Scenic Corridor is subject to the policies set forth under Goal CC-4 and the conditions set forth in Section C, I-580 Scenic Corridor Implementation.

CC-4.1.P3 The City shall permit no development to wholly obstruct or significantly detract from views of any scenic area as viewed from a scenic route.

CC-4.2.P3 The I-580 Scenic Corridor development shall include provision for cycling, hiking, and riding trails within or adjacent to street rights-of-way, where feasible.

CC-4.7.P2 New, relocated, or existing utility distribution lines should be placed underground.

CC-4.9.P1 Alteration of natural or artificial land contours should not be permitted without a grading permit as a means of preserving and enhancing the natural topography and vegetation in developable areas.

CC-4.9.P2 Mass grading should not be permitted in the I-580 Scenic Corridor.

CC-4.10.P1 As a means of preserving natural "ridge skylines," no major ridgeline shall be altered to the extent that an artificial ridgeline results. Minor grading below the skylines, ridgelines, or silhouettes may be authorized to accommodate development or activities otherwise consistent with these policies.

CC-4.10.P3 The I-580 Scenic Corridor is defined as the area which is within 3,500 feet on each side of the centerline of I-580, and visible from the I-580 roadway. Development in the I-580 Scenic Corridor must preserve, to the largest degree feasible, the view of the ridgelines as seen from the I-580 Scenic Corridor roadway. To that end, no development, structures or man-made objects except plantings erected for landscaping purposes may obscure any portion of the ridgeline as seen from the I-580 Scenic Corridor roadway, except as provided in Community Character Element Section IV.C (I-580 Scenic Corridor Implementation). Landscaping, including trees, shall be planted in a manner such that when mature, it does not create a wall-like effect that substantially obscures views of the ridgeline.

CC-4.16:P2 Development of lands adjacent to scenic routes should not obstruct views of scenic areas, and development should be visually compatible with the natural scenic qualities.

EXISTING CONDITIONS

This section presents information regarding the character and quality of existing views within the visual study area (VSA), shown in **Figure 5.1-1**. Establishment of the VSA is discussed in detail below, in the Methodology section. Key viewpoints within the VSA were selected, photographed, and assessed in order to determine the current condition of scenic resources. Viewpoint locations are shown on **Figure 5.1-2**.

Regional Land Use and Setting

City of Dublin

The VSA in Dublin includes undeveloped grazing ranchland; public roads; I-580; open space; and commercial, residential, and industrial land uses. Man-made development is primarily around the periphery of the VSA and includes two- to three-story mid-rise commercial development such as big box stores and shopping centers; parking lots; single family homes; low to medium-rise industrial development; and the I-580 corridor. To the west and northwest of the Project site, the VSA includes single-family residential and medium-density residential development. A large shopping center is directly across Fallon Road to the west of the Project site. Operating businesses include Target, Panera Bread, Guitar Center, and BJ's Restaurant & Brew House, among others. There are public views of the Project site from portions of Fallon Road, public roads associated with residences north of the Project site, the I-580 scenic corridor, and Croak Road. Residences to the north of the Project site have partially obstructed views of the Project site between the rolling hills. I-580 affords drivers views of the Project site to the north, and travelers along Croak Road have direct views of the Project site. Key viewpoints within Dublin are depicted in **Viewpoint 1** through **Viewpoint 5**.

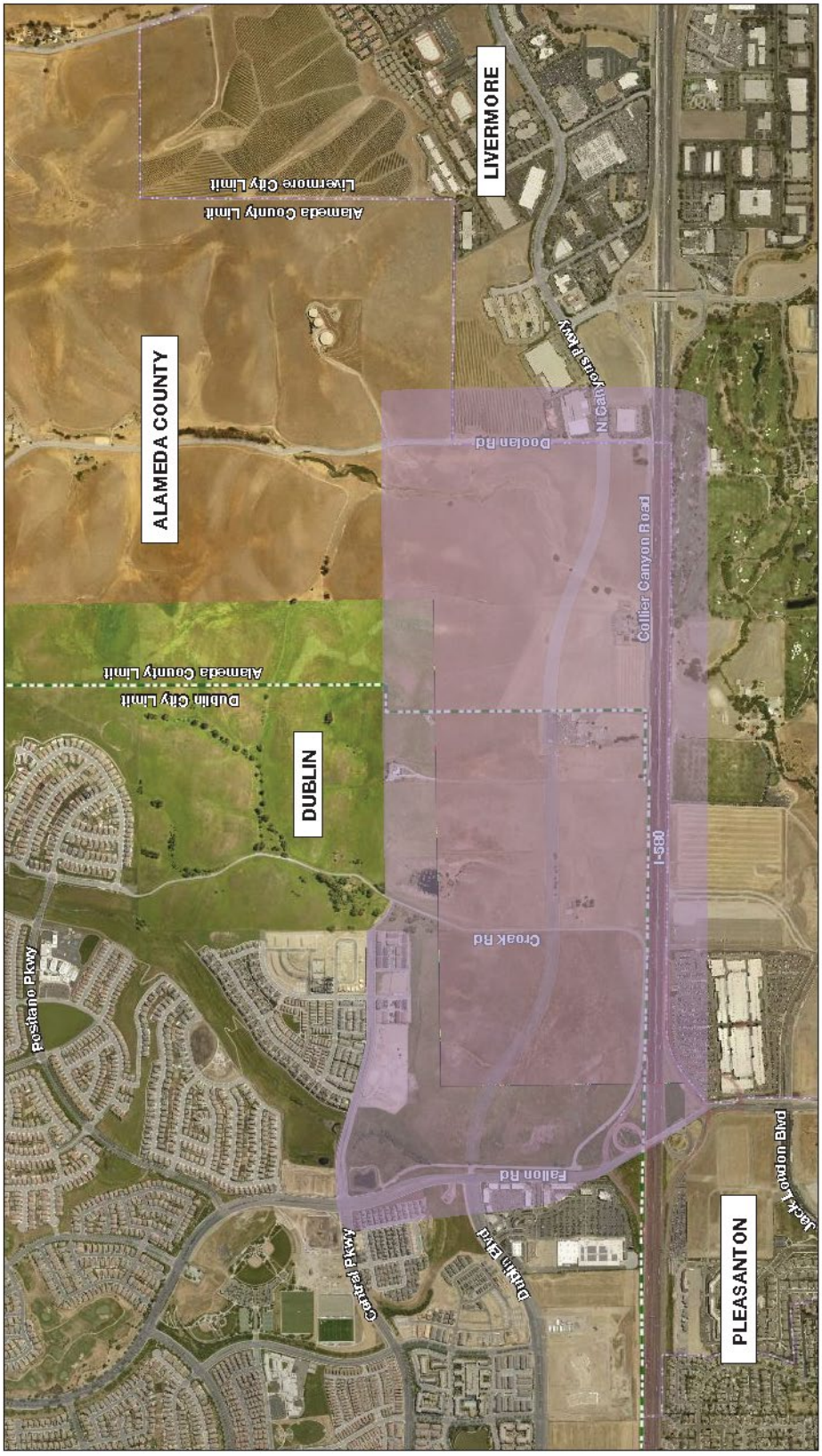


Figure 5.1-1

Visual Impact Study Area

Source: Circlepoint, 2018

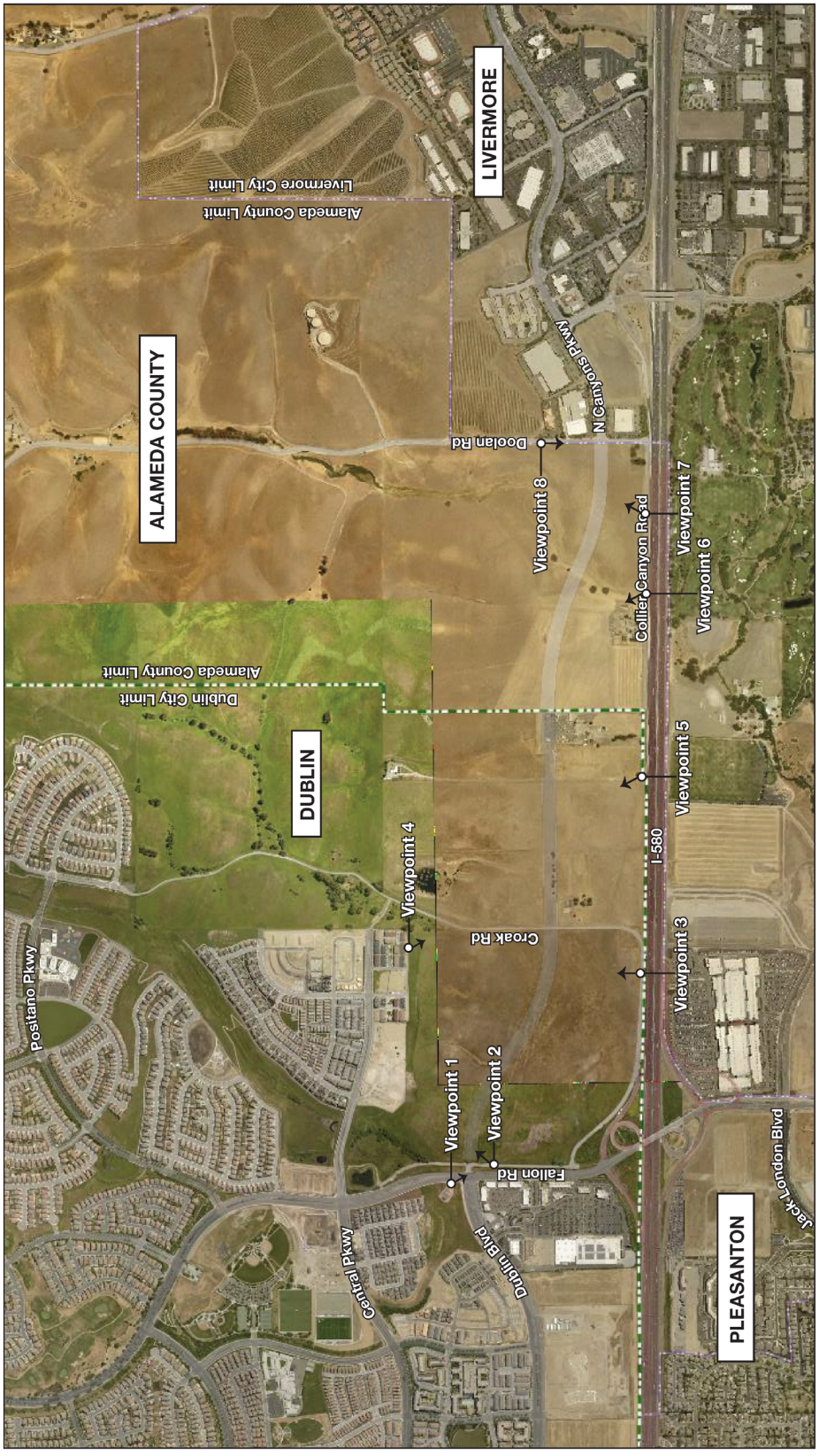


Figure 5.1-2

Key Viewpoints

Source: Circlepoint, 2018

Viewpoint 1: Fallon Road (Dublin)



Viewpoint 2: Fallon Road (Dublin)



Viewpoint 3: Croak Road (Dublin)



Viewpoint 4: Central Parkway (Dublin)



Viewpoint 5: Collier Canyon Road (Dublin)



Alameda County

The VSA in Alameda County (County) consists of primarily undeveloped grazing ranchland and open space, with intermittent residences and outbuildings. Land uses in this area consist of resource management and large parcel agricultural (**Viewpoint 6**).

There are public views of the Project site from portions of Collier Canyon Road to the south of the Project site (**Viewpoint 7**). Views of the Project site from Collier Canyon Road may be obstructed at some angles by scattered agricultural development and vegetation, particularly near Cottonwood Creek.

Viewpoint 6: Collier Canyon Road (Alameda County)



Viewpoint 7: Collier Canyon Road (Alameda County)



City of Livermore

The VSA in Livermore includes business commercial parks along North Canyons Parkway. Land dedicated to Hillside Conservation is located north of North Canyons Parkway. General commercial and commercial/campus office land uses are southeast of the Project site, adjacent to eastbound I-580.

There are public views of the Project site from the I-580 scenic corridor, Doolan Road, and the area immediately around the intersection of Doolan Road and North Canyons Parkway. I-580 offers drivers peripheral views of the Project site to the north. Doolan Road has generally unobstructed views of the Project site, with the exception of the southern portion of the roadway where views are obscured by trees and other vegetation (**Viewpoint 8**).

Viewpoint 8: Doolan Road (Livermore)



Project Site

The Project site is used primarily as undeveloped grazing ranchland and open space. The landscape in and around the Project site is characterized by a mix of grasslands surrounded by rolling hills and agricultural uses. Natural land cover in the Project site and VSAincludes trees, shrubs, and grassland vegetation. Trees are primarily willows and valley oaks (*Quercus lobata*) along Cottonwood Creek, which flows generally north to southwest across the Project site in the County.

Improvements to areas adjacent to the Project site generally consist of paved and unpaved roads used to access private property and scattered fences, barns, corrals, wells, water tanks, single-family homes and various outbuildings. Views through the Project site from public roads along the western, southern, and eastern edges of the VSA are generally unobstructed, and views of the Project site from the north are intermittent, broken up by the rolling hills.

Scenic Resources

The VSA encompasses several scenic resources, including man made routes and corridors as well as natural open space and scenic features. I-580 is an Eligible State Scenic Highway from the Alameda/San Joaquin County Line to Interstate 80 (I-80) in Alameda County (postmile (PM) 0.0/47.4). Within the VSA, I-580 is considered eligible for listing as a State Scenic Highway. For the purposes of California Environmental Quality Act (CEQA), formally eligible scenic highways are treated as State Scenic Highways. The I-580 scenic corridor is defined as the area which is both within 3,500 feet on each side of the centerline of I-580 and visible from I-580. Based on the forgoing, I-580 is considered a State Scenic Highway for the purposes of this Draft EIR. Additionally, I-580 is classified as a Landscaped Freeway (PM 14.97-15.63).[1] No other roadways within the VSA are considered scenic highways.

The Circulation and Scenic Highways Element of the Dublin General Plan identifies I-580 and Fallon Road as scenic routes within the VSA. The EDSP identifies several natural scenic resources within the VSA, such as the open hills, creeks, and general open space. The Alameda County General Plan also identifies I-580, the ridgelines above the Doolan and Collier Canyon, and the resource management area separating eastern Dublin and northern Livermore as scenic resources within the VSA. Similarly, the Livermore General Plan recognizes the open space and hills visible from I-580 scenic corridor as scenic resources within the VSA.

Light and Glare

There are no existing sources of light or glare on the Project site. Sources of light and glare within the VSA include streetlights on nearby roadways, and commercial and residential land uses which have both exterior lighting and windows which allow interior lighting to be seen in the VSA. There is also illuminated signage within the VSA in Dublin and Livermore.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for aesthetics were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of impacts related to the Project.

[1] Caltrans. 2016. Classified "Landscaped Freeways.". Available: http://www.dot.ca.gov/design/lap/livability/docs/class-ls-fwy-REVISED-12-14-2016.pdf. Accessed November 12, 2018

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria:

A. Cause a substantial adverse effect on a scenic vista

B. Substantially degrade the existing visual character or quality of the site and its surroundings

C. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings with a State scenic highway

D. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area

General Plan goals, policies, or designations that are designed to reduce aesthetic impacts are taken into consideration. Conflicts with such laws, ordinances, regulations, and standards can constitute evidence of a significant aesthetic impact. Lastly, a significant aesthetic impact could occur if the Project's incremental aesthetic impact would be cumulatively considerable.

Methodology

To determine potential impacts, the impact significance criteria identified above were applied to construction and operation of the Project.

The VSA, also known as the viewshed, refers to an area including the Project site, but extending beyond the Project site to include surrounding areas that could be affected by the Project (**Figure 5.1-1**). A VSA was established for the Project to scope this analysis and clearly identify the areas which could experience a change in the visual environment as a result of the Project. The VSA is determined by topography, vegetation, and viewing distance, and includes areas visible from the Project site and public viewpoints that offer views of the Project site. This encompasses portions of Fallon Road, Central Parkway, Croak Road, I-580, Collier Canyon Road, Doolan Road, and North Canyons Parkway.

The approach used to evaluate the existing aesthetics conditions consisted of the following:

- Reviewing the Project plans and elevations
- Establishing several representative key viewpoints and photographing the Project site from those viewpoints
- Conducting visual analysis of the VSA from the representative key viewpoints, including visual simulations
- Utilizing visual similarities from the key viewpoints to help characterize the level of impact

Key viewpoints were selected to be representative of the most critical locations from which the Project would be seen. They were selected based on their usefulness in evaluating existing landscapes and potential impacts on aesthetics from various vantage points. When analyzing existing aesthetic conditions and visual impacts, the elements of visual quality, viewer concerns, visibility, number of viewers, and duration of view are considered.

Impact Analysis

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. Cause a substantial adverse effect on a scenic vista

And

B. Substantially degrade the existing visual character or quality of the site and its surroundings

Implementation of the Project would result in temporary and permanent changes to the existing visual environment and would alter views of scenic resources located in the VSA. Construction and operational impacts are discussed below.

Construction

Impact AES-1: Implementation of the Project may result in degradation of the visual quality of the scenic hills to the north. **(Less than Significant with Mitigation)**

Construction would require grading north of the Project site, which may extend to the foot of the rolling hills to the north. Grading work and the restoration of graded areas would be required to adhere to polices for protection of scenic hillsides, described under Regulatory Setting above. However, the Project may still result in a degradation of the visual quality of the hillside if not properly designed. This impact would be reduced to a less-than-significant level with implementation of **Mitigation Measure AES-1**, which requires Project construction access and staging areas be returned to pre-Project conditions, avoiding permanent visual changes, and that permanent areas of grading on the hillside are designed to be as natural-looking as possible.

Mitigation for Impact AES-1

> **Mitigation Measure AES-1:** Construction areas disturbed for equipment access and staging will be returned to their pre-Project condition. This may include minor regrading or sweeping and revegetation. Graded areas to the north of the Project site will be vegetated with an erosion control seed mix to minimize the visual change to the hillside and ensure that the graded areas blend with the surrounding natural hillside environment to the extent feasible.

Operation

Permanent (operational) Project components would alter existing views and scenic resources through:

- Introduction of a new, linear roadway and roadway embankment (change to existing views)
- Introduction of new vertical elements including street trees and street lights (change to existing views)
- Construction of retaining walls along the roadway, to minimize grading (change to existing views)
- Grading to the north and south of the Project site, including at the foot of the hills to the north (change to existing views and change to a scenic resource)

As shown in **Figure 5.1-3** and **Figure 5.1-4**, the addition of vertical elements (trees and street lights) would be the most visually prominent changes.

Impact AES-2: Retaining walls implemented as a part of the Project may disrupt the visual setting, thereby degrading visual quality. **(Less than Significant with Mitigation)**

The Project may include retaining walls placed along the roadway to reduce the need for large areas of grading. The addition of retaining walls would have the potential to disrupt the visual setting and thereby result in long-term visual impacts. Retaining walls would generally range from 3 to 10 feet in height and could alter views of scenic resources and the overall quality of the natural landscape. As discussed above, the roadway design would be required to conform to policies and guidelines provided in Dublin and the County's planning documents. These documents have anticipated implementation of the Project, and the related alteration of the natural landscape. However, Project-specific impacts could result in unanticipated changes to the visual environment. **Mitigation Measure AES-2** would require retaining walls to incorporate a variety of aesthetic treatments and measures to allow the structures to better blend with the natural setting. With implementation of **Mitigation Measure AES-2**, this impact would be less than significant.

Mitigation for Impact AES-2

Mitigation Measure AES-2: In coordination with Dublin, the County, and Livermore, retaining walls will be designed to include the following components:

- To reduce the visual impact of new retaining walls, aesthetic treatments consisting of color, texture and/or patterning will be applied to reduce visual impacts. The aesthetic treatment shall be context sensitive to the location. If concrete drainage ditches are required along the top of and behind the retaining walls, the ditch shall be stained to match the overall color of the wall. Aesthetic treatments will also reduce glare and deter graffiti, and shall be developed during the final design.

- Where required, retaining wall cable safety railing should have black or brown vinyl cladding to make them less visually obtrusive and help them blend with the setting.
- Concrete safety-shaped barriers should be sand blasted to a medium finish to minimize glare and deter graffiti. Barriers at the bottom of retaining walls are required to be stained or are required to match the overall wall color through techniques such as staining.

Less than Significant Impacts

Construction

Construction activities would entail earthwork, paving, pile driving for the bridge structure, concrete pouring, utility trenching, and roadway striping. Accordingly, construction work would introduce temporary visual disturbances to the continuous open space, such as the appearance of construction equipment and stock piles of building materials. Given that the Project site and immediate areas are largely undeveloped, the main views of construction equipment would be from I-580, Fallon Road, Doolan Road, and Collier Canyon Road. These impacts would be temporary and would be eliminated when construction ends and construction equipment is removed. Therefore, construction equipment would not substantially degrade visual quality or scenic resources. This impact would be **less than significant**.

Operation

The addition of the Project would alter the dominance of the rolling hills in views to the north. As depicted in the visual simulations presented in **Figure 5.1-3** and **Figure 5.1-4**, views from the south, and to a lesser extent from the west and east, would include the new line of both the roadway and street trees in the middle ground, changing the continuity of existing views of the hills. However, the dominance and continuity of these views is already interrupted by residential development visible in Dublin, including views from I-580. Project design and implementation would be required to adhere to policies and guidelines contained in the EDSP, Dublin's Streetscape Master Plan, Dublin's General Plan, the County's General Plan, and the East County Area Plan for the design of roadways, street trees, and roadway plantings. These include guidelines and policies for visual compatibility. Through coordination with Livermore, the Project design would also be consistent with Livermore's General Plan policies regarding scenic resources. This would ensure the roadway is visually compatible with the surrounding landscape, as planned for in the documents mentioned above. This impact would be **less than significant**.



Figure 5.1-3

Visual Simulations

Source: Field of Vision, 2018



Figure 5.1-4

Visual Simulations

Source: Field of Vision, 2018

C. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway

Impact AES-3: The Project would include trees along the roadway, introducing new vertical elements that could compromise the eligibility of I-580 as a State Scenic Highway. **(Less than Significant with Mitigation)**

From the I-580 corridor, new trees and landscaping would be visible and noticeable to passing motorists, as shown on **Figure 5.1-3**. The addition of new vertical elements (trees) may result in minor disruption of views from I-580 across the landscape. Due to the distance between I-580 and the Project's road alignment, it's not reasonably anticipated that daytime views of streetlights would be substantially noticeable. Changes to night time views (light and glare) are discussed separately below. With implementation of **Mitigation Measure AES-1**, **Mitigation Measure AES-2** and **Mitigation Measure AES-3**, impacts to the eligibility of I-580 as a State Scenic Highway would be less than significant. **Mitigation Measure AES-1** and **Mitigation Measure AES-2** would ensure visual changes from Project construction activities, grading, and retaining walls are minimal and blend in to the natural setting. **Mitigation Measure AES-3** would require new plantings to be coordinated with Caltrans and selected to avoid incompatibility with the natural setting and scenic views.

Mitigation for Impact AES-3

> **Mitigation Measure AES-3:** All landscaping and new plantings along the Dublin Boulevard Extension must be selected and implemented to maintain the eligibility of I-580 as a State Scenic Highway. The final selection of plantings must ensure that new planting would not substantially impede views of the landscape. Landscaping plans will be coordinated with Caltrans to ensure compatibility.

Less than Significant Impacts

The Project would not include damage to scenic resources such as trees, rock outcroppings, or historic buildings. There are no rock outcroppings in the VSA, and no historic structures within the Project site. Indirect effects to historic structures are discussed in **Section 5.4, Cultural and Tribal Cultural Resources**. The Project would not involve the removal of any trees which are protected or considered scenic. Trees on the Project site are discussed in detail in **Section 5.3, Biological Resources**. No other scenic resources within the State Scenic Highway area would be directly impacted by the Project. This impact would be **less than significant**.

D. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

Impact AES-4: Project construction would include new sources of temporary night time lighting and glare, which could affect drivers traveling adjacent to the Project construction area. **(Less than Significant with Mitigation)**

During construction, temporary lighting may be needed in work areas and staging areas during evening hours, particularly if construction activities take place during the winter months when there are fewer hours of daylight. Construction lighting is often quite bright in comparison to other exterior lighting. This could result in a new, temporary source of light and glare which could affect drivers on adjacent roadways. **Mitigation Measure AES-4** would reduce impacts associated with construction-period light pollution and glare. With implementation of **Mitigation Measure AES-4**, this impact would be less than significant.

Mitigation for Impact AES-4

> **Mitigation Measure AES-4:** Appropriate light and glare screening measures, including the use of downward cast lighting, will be used in construction, staging, and laydown areas.

Less than Significant Impacts

The Project would not include any structures or surfaces that could be a potential new source of glare. Vehicles traveling along the roadway near the intersections of Dublin Boulevard/Fallon Road, Dublin Boulevard/Croak Road, and Doolan Road/North Canyons Parkway could result in a new, indirect source of glare that could be perceived by existing motorists. Glare could occur from the reflection of vehicle headlights and streetlights. However, glare from vehicles would be typical of nearby roadways with street lighting, and would not be substantial. Once operational, the Project would include new streetlights and therefore a new source of night time lighting. The Project would be required to utilize light shielding or directional devices, consistent with policies and regulations in Dublin, the County, and Livermore (listed above under Regulatory Setting), to reduce potential light pollution and night-time glare within the VSA. Indirectly, the Project would result in new night time sources of light from vehicle headlights. Light from vehicle headlights would be similar to other roadways in the area, and would not be substantial. This impact would be **less than significant**.

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and planned residential, commercial, and infrastructure development projects that could adversely affect visual setting (see **Chapter 4.0, Introduction to Environmental Analysis**). Future development activities in Dublin, Livermore, and elsewhere around the VSA would impact the same visual resources that would be affected by the Project. Therefore, the Project, in combination with other past, present, and foreseeable future projects, could cumulatively impact designated scenic resources in the area. Additionally, the Project, in combination with additional projects within the region could cumulatively result in impacts associated with light pollution.

However, as discussed in this section, the Project would include implementation of mitigation measures to reduce impacts on scenic resources as well as impacts associated with light pollution. Future projects in the area that would impact resources similar to those impacted by the Project would be subject to CEQA regulations, requirements, and regulatory permits for impacts to

aesthetics and visual resources. Individual projects would be required to complete independent environmental analysis under CEQA. It is expected that such projects will mitigate their impacts on visual resources through the incorporation of mitigation measures and compliance with permit conditions. Furthermore, impacts resulting from future projects in eastern Dublin shall be required to implement mitigation measures from prior environmental documents such as the General Plan EIR, EDSP EIR, and Fallon Village Supplemental EIR. Thus, no cumulative impact would occur. The Project would not have a cumulatively considerable contribution to any cumulative impact on aesthetics and visual resources.

REFERENCES

California Department of Transportation (Caltrans). 2015. State Scenic Highway Program. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/faq.htm. Accessed: November 12, 2018.

California Department of Transportation (Caltrans). 2018. California Scenic Highway Mapping System. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed: November 12, 2018.

5.2 AIR QUALITY

INTRODUCTION

This section discusses the Project's air quality impacts during construction and operation. Information in this section is primarily drawn from the *Air Quality Assessment* prepared for the Project (see **Appendix C** of this Draft Environmental Impact Report (EIR)).Greenhouse gas impacts are covered in **Section 5.6, Greenhouse Gas Emissions.**

Scoping Issues Addressed

No comments regarding air quality were raised during the public comment scoping period for the Project.

REGULATORY SETTING

The Federal Clean Air Act (FCAA) and California Clean Air Act (CCAA) have empowered federal and state governments to regulate the emission of airborne pollutants and have established ambient air quality standards for the protection of public health. The US Environmental Protection Agency (EPA) is the federal agency designated to administer air quality regulation, while the California Air Resources Board (CARB) is the state equivalent in California. Local air quality management is provided by CARB through county-level or regional (multi-county) air pollution control districts. CARB is responsible for establishing air quality standards and the control of mobile emission sources, while the local districts are responsible for enforcing standards and regulating stationary sources. CARB has established 14 air basins statewide. Federal and state air quality standards are presented in **Table 5.2-1**.

Federal

Federal Clean Air Act

The US Environmental Protection Agency (EPA) is charged with implementing national air quality programs. The US EPA's air quality mandates are drawn primarily from the FCAA. Originally passed in 1963, the FCAA has been amended several times. In 1977 Congress added several provisions, including non-attainment requirements for areas not meeting National Ambient Air Quality Standards (NAAQS) and the Prevention of Significant Deterioration program. The FCAA allows states to adopt more stringent standards or to include other pollution types.

National Ambient Air Quality Standards

The FCAA requires the US EPA to establish primary and secondary NAAQS for a number of criteria air pollutants. The air pollutants for which standards have been established are considered the most prevalent air pollutants that are known to be hazardous to human health. NAAQS have been established for the following pollutants: ozone, carbon monoxide (CO), sulfur dioxide (SO_2), respirable particulate matter with a diameter of 10 micrometers or less (PM_{10}), fine particulate

matter with a diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. PM_{10} are particles that are small enough to be inhaled, while $PM_{2.5}$ are not readily filtered by the respiratory system and are therefore of particular health concern.

Title III of the Federal Clean Air Act

Hazardous air pollutants (HAPs) are the air contaminants identified by the US EPA as known or suspected to cause cancer other serious illnesses, birth defects, or death. The FCAA requires the US EPA to set standards for these pollutants and reduce emissions of controlled chemicals. Specifically, Title III of the FCAA requires the US EPA to disseminate National Emissions Standards for certain categories of sources that emit one or more pollutants that are identified as HAPs. The FCAA also requires the US EPA to set standards to control emissions of HAPs through mobile source control programs. These include programs for lower-emission gasoline, national low emission vehicle standards, gasoline sulfur control requirements, and heavy-duty engine standards.

HAPs tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods of time. Many HAPs originate from human activities, such as fuel combustion and solvent use. Mobile source air toxics (MSATs) are a subset of HAPs, and some MSATs have been identified as priority HAPs due to their known effects on human health. While vehicle miles traveled in the United States are expected to increase by 45 percent over the period 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.[1]

State

California Clean Air Act

The CCAA, signed into law in 1988, requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS). CARB is the agency responsible for implementing the requirements of the CCAA and for coordination and oversight of state and local air pollution control programs in California. CARB overseas local district compliance with California and federal laws, approves local air quality plans, and submits the State Implementation Plans (SIPs) to the US EPA. CARB also monitors air quality, determines and updates area designations and maps, and sets emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

California Ambient Air Quality Standards

CAAQS have been established by CARB for the following pollutants: ozone, CO, nitrogen dioxide (NO_2), SO_2, PM_{10}, $PM_{2.5}$, lead, vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. In most cases, the CAAQS are a more stringent standard than the NAAQS. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide air pollutant emission sources and provides districts with the authority to regulate indirect air pollutant sources.

[1] Federal Highway Administration. 2016. Updated. Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents.

Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

Toxic air contaminants (TACs)[2] in California are primarily regulated through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, also known as the Hot Spots Act). TACs are a broad class of compounds known to cause illness or death (primarily from cancer risk). TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g. dry cleaners). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level.

AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are necessary before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has also adopted the US EPA's list of HAPs as TACs. In 1998, diesel particulate matter (DPM) was added to CARB's list of TACs.

Once a TAC is identified, CARB adopts an Airborne Toxic Control Measure for sources that emit that particular TAC. If a safe threshold exists at which no toxic effect occurs from a substance, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate Best Available Control Technology to minimize emissions.

The Hot Spots Act requires existing facilities that emit TACs above the threshold level to prepare a toxic emissions inventory. If the inventory determines the emissions may cause a significant health risk, a risk assessment must be prepared, and the facility operator must notify the public of significant risk levels and implement risk reduction measures.

Diesel Exhaust and Diesel Particulate Matter

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs in California, based on the statewide average. According to CARB, diesel exhaust is a complex mixture of gases, vapors, and fine particles. This mixture makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by CARB, and are listed as cancer-causing substances either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium- and heavy-duty diesel trucks that generate the bulk of DPM emissions along California's highways. Regulations require affected vehicles to meet specific performance requirements between 2011 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or the equivalent by 2023. With implementation of these requirements, DPM concentrations are expected to be reduced by 85 percent in 2020 from the estimated 2000 levels.[3] As emissions are reduced, risks associated with exposure to emissions also are expected to be reduced.

[2] TACs are referred to as HAPs under the FCAA.

[3] CARB, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. https://www.arb.ca.gov/diesel/documents/rrpFinal.pdf

Table 5.2-1 Federal and State Air Quality Standards

Pollutant	Averaging Time	California Standard	Federal Primary Standard
Ozone (0_3)	1-hour	0.090 ppm	--
	8-hour	0.070 ppm	0.070 ppm
Respirable Particulate Matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3
	Annual	20 µg/m^3	--
Fine Particulate Matter ($PM_{2.5}$)	24-hour	--	35 µg/m^3
	Annual	12 µg/m^3	12 µg/m^3
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9 ppm	9 ppm
Nitrogen Dioxide (NO_2)	1-hour	0.18 ppm	100 ppb
	Annual	0.030 ppm	0.053 ppm
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	75 ppb
	24-hour	0.04 ppm	0.14 ppm (for certain areas)
	Annual	--	0.030 ppm (for certain areas)
Lead	30-day	1.5 µg/m^3	--
	Calendar quarter	--	1.5 µg/m^3 (for certain areas)
	3-month	--	0.15 µg/m^3

Ppm = parts per million; ppb = parts per billion
Source: California Air Resources Board, 2016

Regional

The Bay Area Air Quality Management District (BAAQMD) regulates air quality in the San Francisco Bay Area Air Basin. BAAQMD is responsible for developing and enforcing air quality rules in the air district, and is responsible for planning for the attainment of the state's ambient air quality standards. BAAQMD inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law. It also reviews air quality analyses prepared for projects under the California Environmental Quality Act (CEQA) and has published the CEQA Air Quality Guidelines (BAAQMD Guidelines), which are commonly used in the evaluation of air quality impacts.

Bay Area Air Quality Management District Air Quality Management Plan

BAAQMD is responsible for developing a Clean Air Plan, which guides the region's air quality planning efforts to attain the CAAQS. BAAQMD adopted the 2017 Clean Air Plan in April 2017. The 2017 Clean Air Plan updates the 2010 Clean Air Plan in accordance with the requirements of the

California Clean Air Act to implement "all feasible measures" to reduce ozone; provide a control strategy to reduce ozone, particulate matter, TACs, and greenhouse gases in a single, integrated plan; review progress in improving air quality in recent years; and establish emission control measures to be adopted or implemented in both the short term and through 2050. Accordingly, the 2017 Clean Air Plan contains district-wide control measures to reduce the ozone precursor emissions, reactive organic gases (ROG), oxides of nitrogen (NO_x), particulate matter, TACs, and greenhouse gas emissions.

Community Air Risk Evaluation Program

Initiated in 2004, the Community Air Risk Evaluation (CARE) program evaluates and reduces health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources, and on- and off-road mobile sources with an emphasis on diesel exhaust. The CARE program is ongoing and encourages community involvement and input. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and a high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area.

A health risk assessment is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances, to provide a quantitative estimate of health risks. As part of ongoing efforts to identify and assess potential health risks to the public, BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area.

Bay Area Air Quality Management District CEQA Air Quality Guidelines

The BAAQMD 2017 Guidelines were prepared to assist in the evaluation of air quality impacts within the Bay Area. [4] The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements. The guidelines include recommended methodologies for evaluation, thresholds of significance, example mitigation measures, and background air quality information.

In May 2017, BAAQMD published updated BAAQMD Guidelines responding to the 2015 California Supreme Court Decision in California Building Industry Association v. Bay Area Air Quality Management District. This decision included the determination by the court that CEQA does not generally require an agency to consider the effects of existing environmental conditions on a project's future users or residents, such as the effects of TACs and fine particulate matter from existing sources on future residents of a project. Nevertheless, the court stated that lead agencies must still evaluate existing environmental conditions to assess whether a project could exacerbate hazards that are already present. The court did not apply a holding to reach a conclusion on the

[4] BAAQMD. 2017. CEQA Air Quality Guidelines.

validity of BAAQMD's receptor thresholds. Instead, the Supreme Court remanded the case to the Court of Appeal to decide the question in light of the Court's opinion. As of the date of this document, BAAQMD has not formally re-instated the thresholds.

State Implementation Plan Conformity

Federal clean air laws require areas with unhealthy levels of air pollutants to develop plans, known as State Implementation Plans (SIPs). SIPs are comprehensive plans that describe how an area will attain NAAQS. The 1990 amendments to the FCAA set deadlines for attainment based on the severity of an area's air pollution problem.

Transportation projects are typically evaluated for their effects on regional air quality as a whole, in response to federal requirements. The FCAA outlines requirements for ensuring that federal transportation plans, programs, and projects are consistent with the purpose of the SIP to reduce transportation-related emissions for non-attainment or maintenance air pollutants. The Metropolitan Transportation Commission (MTC) is the transportation agency for the nine-county San Francisco Bay Area, and releases a Transportation Improvement Plan (TIP) that lists near-term transportation projects that involve federal funds or agencies, and regionally significant state- and locally-funded projects. The TIP is evaluated for conformity with the SIP; a conformity finding demonstrates that the total emissions projected for the TIP are within the emissions budgets established by the SIP. Conformity with the SIP means that a transportation project will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS.

The conformity analysis for the 2019 TIP addresses the pollutants ozone, CO, and $PM_{2.5}$. The Federal Highway Administration and Federal Transit Administration approved the 2019 TIP in December 2018. The Project is listed in the 2019 TIP (Project TIP ID ALA150003).[5]

Local

City of Dublin

City of Dublin General Plan

The Dublin General Plan contains the following policies relating to air quality:

Implementing Policy 7.5.1.A.1:	Request that the Bay Area Air Quality Management District establish an air quality monitoring station in Dublin.
Implementing Policy 7.5.1.A.2:	Require an air quality analysis for new development projects that could generate significant air emissions on a project and cumulative level. Air quality analyses shall include specific feasible measures to reduce anticipated air quality emissions to a less than significant California Environmental Quality Act (CEQA) level.

[5] Metropolitan Transportation Commission and Association of Bay Area Governments. 2016. Plan Bay Area 2040. Amended March 2018.

Alameda County

Alameda County General Plan, East County Area Plan

The Alameda County (County) General Plan, East County Area Plan contains the following goals and policies relating to air quality:

Air Quality Goal	To ensure that air pollution levels do not threaten public health and safety, economic development, or future growth.
Policy 291	The County shall strive to meet federal and state air quality standards for local air pollutants of concern. In the event that standards are exceeded, the County shall require appropriate mitigation measures on new development.
Policy 292	The County shall coordinate subregional air quality planning and mitigation among East County cities using the results of the biennial monitoring report.
Policy 293	The County shall support the Bay Area Air Quality Management District (BAAWMD) in monitoring air pollutants of concern on a continuous basis.
Policy 294	The County shall require new development projects to include traffic and air pollutant reduction measures to help attain air quality standards. For non-residential projects, these measures could include Transportation Demand Management programs such as ridesharing and transit promotion.
Policy 296	The County shall review the cumulative impacts of proposed project for their potential effect on air quality conditions.
Policy 297	The County shall coordinate air quality planning efforts with their local, regional and state agencies.
Policy 298	The County shall address air quality as a factor in its Regional Element to assist cities in their environmental review procedures.
Policy 300	The County shall review proposed projects for their potential to generate hazardous air pollutants.
Policy 303	The County shall incorporate the provisions of the Association of Bay Area Government's (ABAG) Bay Air Quality Plan and BAAQMD's Air Quality and Urban Development Guidelines into project review procedures.
Policy 304	The County shall notify cities and the BAAQMD of proposed projects which may significant affect air quality.
Policy 305	The County shall cooperate with the BAAWMD and CARB in their enforcement of the provisions of the Clean Air Act, state and regional policies, and established standards for air quality.

City of Livermore

City of Livermore General Plan

The Livermore General Plan contains the following goals, objectives, and policies relating to air quality:

Goal OSC-6	Protect and improve the city's air quality.
Objective OSC-6.1	Minimize air pollution emissions.
Policy OSC-6.1-P1.	The City shall require project developers to develop and implement a construction-period air pollution control plan, consistent with dust and emission-abatement actions outlined in the CEQA handbook of the Bay Area Air Quality Management District.
Policy OSC-6.1-P3.	The City shall work with local and regional municipalities and agencies to reduce automobile-related vehicle emissions.
Policy OSC-6.1-P5.	The City shall attempt to increase the employment-to-population ratio to reduce commuting rates and associated vehicle-related pollution emissions.
Policy OSC-6.1-P6.	The City shall monitor air quality and shall consider implementing a population cap if air quality declines.
Policy OSC-6.1-P7.	The City shall support programs to encourage the development and maximum use of regional and local mass transit systems. To this end, the City shall actively support: (a) the funding and construction of a BART or light/commuter rail extension to Livermore; (b) the designation of special lanes on I-580 for the exclusive use of commuter buses during peak traffic periods; and (c) close coordination in the operations of local and regional transit systems in order to minimize the travel time between communities and major generating areas served by the regional system.

EXISTING CONDITIONS

The Project is located within Dublin, Livermore, and the County, within the San Francisco Bay Air Basin. Air quality regulation in the San Francisco Air Basin is administered by BAAQMD. These boundaries make up the air quality study area for regional impacts. The study area for localized air quality impacts includes the Project site plus a 1,000-foot buffer and nearby intersections evaluated in the *Transportation Impact Assessment* (TIA) prepared by Kittelson & Associates in August 2018 (see **Appendix D** of this Draft EIR).

Climate and Topography

The Project site is within the Livermore Valley, which is about 30 miles (48 km) east of the first coastal range of foothills that surround the San Francisco Bay Area. The Livermore Valley has an east-west orientation with mountain passes on the west and east connecting the Bay Area and the Central Valley. The passes are used by railroads and highways to connect the two regions. Livermore Valley is about 15 miles (24 km) long (east to west), 10 miles (16 km) wide (north to south), and surrounded by California coastal range mountains and foothills.

The Livermore Valley has a Mediterranean climate, although it is close to a semi-arid climate because of its relatively low annual precipitation. It features warm-to-hot dry summers and mild-to-cool wet winters. Daytime temperatures between June and October average between 75 and 85°F, but can reach 100°F and occasionally approach 110°F. Summer nights, however, are normally much cooler with lows from 50 to 60°F. The valley's passes direct the normal west to east flow of air through the valley. There are often strong evening winds in the summer that bring cool air off the Pacific Ocean into the Livermore Valley as it heads towards the much hotter Central Valley. The period from June to September is extremely dry and is characterized by clear skies, but in late summer, subtropical moisture occasionally surges into the Livermore Valley, bringing high humidity, monsoon clouds, and, much less commonly, thunderstorms. Nearly all the 14.6 inches of annual rainfall comes between September and May, but about 50 percent of the days are sunny during this period with no appreciable cloud cover. The peak rainy months are December to March.

Air quality in the region is controlled by meteorological conditions and the rate of pollutant emissions. Meteorological conditions such as wind speed, atmospheric stability, and mixing height may all affect the atmosphere's ability to mix and disperse pollutants. Long-term variations in air quality typically result from changes in air pollutant emissions, while frequent, short-term variations result from changes in atmospheric conditions.

Air quality standards for ozone are traditionally exceeded when relatively stagnant air conditions occur for periods of several days during the warmer months of the year. Key components of ground-level ozone formation are sunlight and heat. Therefore, significant ozone formation only occurs during the months from late spring through early fall. Prevailing winds during the summer and fall can transport and trap ozone precursors from the more urbanized portions of the Bay Area in the Livermore Valley. Meteorological factors make air pollution potential in the study area relatively high during summer and fall months.

Air Pollutants

As discussed in **Regulatory Setting**, there are six air pollutants of primary concern. Federal and state air pollutant standards are shown in **Table 5.2-1**.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NO_X. The main sources of ROG and NO_X, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines)

and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, shortness of breath, and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide

CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. CO disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthy levels that adversely affect local sensitive receptors (discussed further below). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce chest pain in persons with serious heart disease. Very high levels of CO can be fatal.

Nitrogen Dioxide

NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide

SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to SO_2 levels in the region. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are larger than 2.5 microns but smaller than 10 microns (PM_{10}). $PM_{2.5}$ refers to fine suspended particulate matter 2.5 microns or less that is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM_{10} and $PM_{2.5}$. These small particles can be directly emitted into the atmosphere as by-products of fuel combustion, through abrasion, such as tire or brake lining wear, or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces and can enter the human body through the lungs.

Lead

Lead is a metal found naturally in the natural environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the US EPA established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The US EPA banned the use of leaded gasoline in highway vehicles in 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically. Metal processing is currently the primary source of lead emissions, with the highest levels of lead in the air generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufactures.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, TACs are another group of pollutants of concern. TACs are injurious in small quantities and are regulated by the US EPA and the CARB. High volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) pose the highest risk to adjacent sensitive receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers, or schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Sensitive Receptors

Some groups of people are more affected by air pollution than others, and are known as sensitive receptors. The state has identified the following groups of people who are most likely to be affected by air pollution: children under 16, the elderly over 65, people conducting athletic activities, and people with cardiovascular and chronic respiratory diseases. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, outdoor athletic fields, and elementary schools. Air quality studies evaluate health impacts to sensitive receptors that are within 1,000 feet of a project, as receptors beyond 1,000 feet would generally not be close enough to experience any effects from project air pollutant emissions. Sensitive receptors for this Project include residences and Cottonwood Creek Elementary School located north and northwest of the Project, approximately 619 to 864 feet from the nearest edge of the Project site, shown on **Figure 5.2-1**. There is a private school along North Canyons Parkway, east of the Project site, which is currently unoccupied. This analysis considered the vacant school as a sensitive receptor since the infrastructure for a school remains and it could reasonably be anticipated to reopen in the future. There are no other existing sensitive uses, such as hospitals, within 1,000 feet of the Project site.

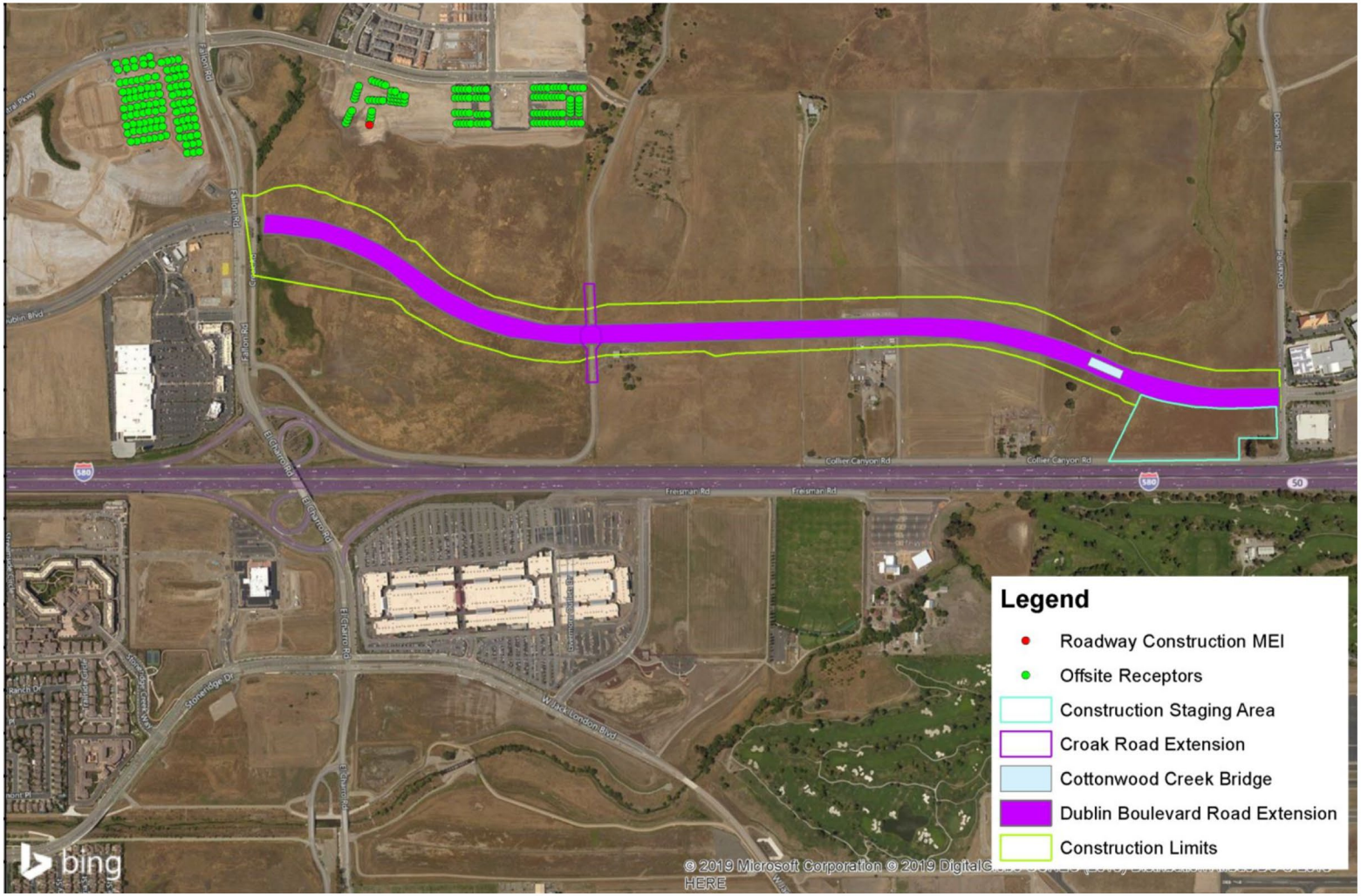
Regional Air Quality Attainment Status

BAAQMD monitors criteria pollutants and air quality conditions throughout the San Francisco Air Basin. Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The San Francisco Air Basin is not in attainment of state and federal standards with respect to ozone and $PM_{2.5,}$ and is not in attainment of state standards for PM_{10}, as shown in **Table 5.2-2**.

Table 5.2-2 Bay Area Air Basin Attainment Status

Pollutant	California Attainment Status	Federal Attainment Status
Ozone (0_3)	Non-attainment	Non-attainment (Moderate)
Respirable Particulate Matter (PM_{10})	Non-attainment	Attainment – Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Non-attainment	Non-attainment
Carbon Monoxide (CO)	Attainment	Attainment – Unclassified
Nitrogen Dioxide (NO_2)	Attainment	Attainment – Unclassified
Sulfur Dioxide (SO_2)	Attainment	Attainment – Unclassified
Lead	Attainment	Attainment – Unclassified

Source: BAAQMD, 2018



Sensitive Receptor Locations Figure **5.2-1**

Source: Illingworth & Rodkin, 2019

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for air quality were derived from the Environmental Checklist in the State CEQA Guidelines Appendix G. The Project would have a significant impact if it:

A. Conflicts with or obstructs implementation of the BAAQMD 2017 Clean Air Plan

B. Violates any air quality standard or contributes substantially to an existing or projected air quality violation

C. Exposes sensitive receptors to substantial pollutant concentrations, including those that increase health risks such as cancer

D. Creates objectionable odors affecting a substantial number of people

E. Cumulative impact of any criteria pollutant

Significance thresholds established in the BAAQMD CEQA Guidelines, updated in 2017 and summarized in **Table 5.2-3**, were used to evaluate the air quality impacts of the Project. The BAAQMD Guidelines are intended to be applied to land-use type projects but provide an informative comparison in determining the magnitude of emissions from roadway projects. The significance thresholds are as follows:

- The operational threshold of significance for ROG and NO_x is 54 pounds per day and 10 tons per year.
- The operational threshold of significance for PM_{10} is 82 pounds per day or 15 tons per year, considering only exhaust emissions.
- The operational threshold of significance for $PM_{2.5}$ is 54 pounds per day or 10 tons per year considering only exhaust emissions.
- The thresholds of significance for construction are equivalent to the operational thresholds and are based on averaged daily emissions.
- Thresholds of significance for health hazards are based on single sources and combined (cumulative) sources, and address both health and cancer risk.

Table 5.2-3 BAAQMD Air Quality Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	**For Single Sources Within 1,000-foot Zone of Influence:**	**For Combined Sources (Cumulative from all sources within 1,000-foot zone of influence):**	
Excess Cancer Risk	>10.0 per one million	>100.0 per one million	
Hazard Index	>1.0	>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3	>0.8 µg/m^3	

Source: Illingworth & Rodkin, 2019

Methodology

Emissions of air pollutants that could affect both regional and local air quality were addressed by modeling emissions and comparing them to BAAQMD significance thresholds identified in **Table 5.2-3**. This included emissions for both Project construction and operation. Operational air pollutant emissions from the Project would be generated by changes in traffic patterns and traffic conditions, so predicted traffic conditions along with vehicle emission rates were combined to predict the daily change in traffic emissions. A dispersion model was used to predict the off-site air pollutant concentrations resulting from Project construction so that increased cancer risk and health risk could be predicted. The existing conditions environmental baseline for the Project is 2017, the opening year is anticipated to be 2025, and the cumulative year is 2040. See **Chapter 4, Introduction to Environmental Analysis**, for full details on Project baseline and operational years.

Construction Period Emissions

Average daily construction exhaust emissions were predicted using the Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model (RoadMod), version 8.1.0. BAAQMD recommends the use of RoadMod to analyze construction emissions for transportation projects. The model predicts emissions of ozone precursor pollutants (ROG and NO_x) and particulate matter (PM_{10} and $PM_{2.5}$). The Project schedule and equipment usage assumptions are

that the Project would be built out over a period of approximately 18 months beginning in 2020, or an estimated 396 construction workdays (based on an average of 22 workdays per month). Average daily emissions were computed by dividing the total construction emissions by the number of construction days. **Appendix C** includes the construction schedule and equipment assumptions and RoadMod model output for construction emissions.

Operational Period Emissions

Regional Conformity

For transportation projects, air quality impacts are evaluated at a regional level by considering the entire transportation sector of emissions. This is done through the SIP conformity process, where transportation projects are evaluated at the regional level. The SIP is intended to attain and maintain national ambient air quality standards. Most public transportation projects are included in the Transportation Improvement Program (TIP). The TIP is evaluated for conformance with the SIP through an emissions analysis conducted by MTC and approved by the U.S. Department of Transportation's Federal Highway Administration. The purpose of this "conformity determination" is to ensure that transportation emissions associated with the transportation network do not exceed the emissions budget established by the region to obtain and maintain ambient quality standards. It can be concluded that a change in emissions caused by the operation of a project programmed in the TIP are less than significant at a regional level, as the project emissions were anticipated in the conformity analysis.

Traffic Modeling

The *Transportation Impact Analysis* (TIA) prepared for the Project used the Alameda County Transportation Commission's countywide travel demand model (TDM) with Plan Bay Area Projections (BART Livermore Extension Version – No BART Scenario) and updated land uses from local general plans to predict the Project's effects on traffic conditions.[6] The TIA can be found in **Appendix D** of this Draft EIR. The TDM accounts for background traffic growth between existing conditions and 2040 and approved but not yet constructed changes to land use in the area, and models potential traffic changes as a result of the Project. The TDM presented in the TIA predicted daily vehicle miles travelled, vehicle hours travelled, and computed travel speed for roadways in the study area without and with the Project.

Emissions Modeling

The Caltrans Emission Factor 2014 (CT-EMFAC2014) Version 6.0 model was used to predict vehicle emission rates. CT-EMFAC2014 models on-road vehicle emissions for criteria pollutants, mobile source air toxics, and CO_2. The tool's underlying data is based on CARB's EMFAC2014 on-road emissions model and mobile source air toxins speciation factors supplied by CARB and the US EPA. Emission processes modeled include running exhaust for all pollutants, running losses for organic

[6] Kittelson & Associates, Inc. 2018. Dublin Boulevard-North Canyons Parkway Extension Transportation Impact Analysis.

compounds (such as ROG), and tire and brake wear for PM_{10} and $PM_{2.5}$. The predicted daily traffic conditions were combined with CT-EMFAC2014 emissions factors to predict emissions in pounds per day.

Health Risk and Cancer Risk from Project Operation

The Project would be constructed within 1,000 feet of existing sensitive receptors including residences to the north and northwest along Central Parkway and Cottonwood Creek Elementary School. Substantial sources of air pollution, such as roadways, can adversely affect nearby sensitive receptors. For local roadways, BAAQMD has provided the Roadway Screening Analysis Calculator to assess whether roadways with traffic volumes of over 10,000 vehicles per day may have a potentially significant effect on sensitive receptors. This community risk assessment models concentrations of diesel particulate matter and $PM_{2.5}$, which are then used to evaluate potential cancer risk, non-cancer health hazards, and annual concentrations of $PM_{2.5}$.[7] Two adjustments were made to the cancer risk predictions made by this calculator: (1) adjustment for latest vehicle emissions rates and (2) adjustment of cancer risk to reflect new Office of Environmental Health Hazard Assessment guidance.

Traffic for the Project was based on the traffic data found in the TIA. The predicted number of average daily trips along the Project ranges from 11,525 vehicles in the 2025 Plus Project Scenario and 19,145 vehicles for 2040 Plus Project Scenario. This analysis conservatively used the highest 2040 conditions. To determine the distance from the Project to the nearest sensitive receptor, the proposed edge of the roadway was entered into the model. The roadway orientation, distance and direction, and traffic volume were also entered.

Impact Analysis

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. Conflicts with or obstructs implementation of the BAAQMD 2017 Clean Air Plan

As described above, the Project is included in the current TIP, which was determined to be in conformity with the SIP with respect to air pollutant emissions. Thus the Project is part of a plan that conforms to the region's air quality planning efforts. Based on SIP conformity, the Project would not interfere with the control measures described in the 2017 Clean Air Plan. Furthermore, the Project would not conflict with the latest Clean Air Plan because the Project would have emissions below the BAAQMD criteria pollutant thresholds (see **Table 5.2-4** and **Table 5.2-5** below and associated discussion).

[7] Diesel particulate matter is identified by California as a TAC due to the potential to cause cancer

Additionally, the Project would provide transportation benefits that reduce pollutant emissions. This would include improving traffic operational efficiency and encouraging multi-modal travel through the provision of bicycle and pedestrian facilities in the short-term, and through long-term support of Dublin and Livermore's plans for transit access along Dublin Boulevard between the two municipalities. Finally, the Project is included as part of the adopted the Dublin General Plan roadway network and the Livermore General Plan planned roadway network. Therefore, the Project would not conflict with or obstruct implementation of the Clean Air Plan and this is a **less-than-significant** impact.

B. Violates any air quality standard or contributes substantially to an existing or projected air quality violation

As discussed above under Existing Conditions, the Bay Area Air Basin is considered a non-attainment area for ground-level ozone and $PM_{2.5}$ under both federal and state standards, and non-attainment for PM_{10} under state standards. As part of an effort to attain and maintain ambient air quality standards for ozone and particulate matter, BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NO_x), PM_{10}, and $PM_{2.5}$ and apply to both construction and operational period impacts.

Impact AIR-1: Construction of the Project would result in temporary air quality impacts related to fugitive dust. **(Less than Significant with Mitigation)**

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils within the construction footprint and trucks carrying uncovered loads of soils across the construction footprint and on local roadways. Unless properly controlled, vehicles leaving the Project site may deposit mud on local streets, which could be an additional source of airborne dust after the mud dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less than significant if best management practices are implemented to reduce these emissions. **Mitigation Measure AQ-1** would implement BAAQMD-recommended best management practices. With implementation of this mitigation measure, fugitive dust from project construction would be greatly minimized, and would no longer have the potential to result in dust to an extent that it would result in an impact to localized air quality. With **Mitigation Measure AQ-1**, this impact would be less than significant.

Mitigation for Impact AIR-1

> **Mitigation Measure AQ-1:** Implement the most current BAAQMD best management practices at the time of construction to control dust and exhaust. Best management practices issued by BAAQMD change over time, and may include but are not limited to:
>
> During any construction period ground disturbance, implement the following best management practices to control dust and exhaust:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations CCR). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Less than Significant Impacts

Construction Equipment Emissions

As shown in **Table 5.2-4**, results from the modeling described in Methodology predict Project emissions would not exceed BAAQMD significance thresholds which are established to prevent temporary, localized impacts to air quality, and thus, this impact would be **less than significant**. However, based on the level of projected NOx emissions which are approaching the threshold, and the possibility that final construction work may vary from current assumptions, Dublin has elected to include **Mitigation Measure AQ-2**. This mitigation measure will further reduce construction-period emissions, further minimizing this to less-than-significant impact. **Appendix C** includes the construction assumptions (schedule and equipment) and RoadMod model output for construction emissions.

> **Mitigation Measure AQ-2**: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet United States Environmental Protection Agency Tier 4 interim off-road emissions standards to the extent feasible.

Table 5.2-4 Construction Period Emissions

Scenario	ROG	NO_x	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction emissions (tons)	0.90 tons	9.36 tons	0.48 tons	0.42 tons
Average daily emissions (pounds)[1]	4.63 lbs	47.3 lbs	2.44 lbs	2.1 lbs
BAAQMD Thresholds (pounds per day)	*54* lbs	*54* lbs	*82* lbs	*54* lbs
Exceed Threshold?	**No**	**No**	**No**	**No**

[1]Assumes 264 working days
Source: Illingworth & Rodkin, 2019

Operational Emissions

Operational air pollutant emissions from the Project would be generated by changes in traffic patterns and traffic conditions (e.g., speed). **Table 5.2-5** shows the predicted air pollutant emissions in terms of average daily emissions for both the No Project and Project scenarios for the three analysis years (i.e., 2017, 2025, and 2040). **Appendix C** includes the traffic and CT-EMFAC model output files for the proposed Project emission factors and modeling calculations.

Table 5.2-5 Daily Project Operational Emissions

Scenario	ROG (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	PM_{10} Total (lbs/day)	$PM_{2.5}$ Total (lbs/day)
2017 Project	4.8	20.8	48.8	1.6	0.9
BAAQMD Thresholds	*54*	*54*	*n/a*	*82*	*54*
Exceed Threshold?	**No**	**No**	**n/a**	**No**	**No**
2025 No Project	2.8	8.0	26.3	1.9	0.8
2025 Plus Project	6.2	17.4	57.5	4.1	1.7
BAAQMD Thresholds	*54*	*54*	*n/a*	*82*	*54*
Exceed Threshold?	**No**	**No**	**n/a**	**No**	**No**
2040 No Project	3.8	11.3	35.3	4.0	1.6
2040 Plus Project	5.3	15.6	48.6	5.5	2.3
BAAQMD Thresholds	*54*	*54*	*n/a*	*82*	*54*
Exceed Threshold?	**No**	**No**	**n/a**	**No**	**No**

Source: Illingworth & Rodkin, 2019

Project emissions would be less than the BAAQMD thresholds for ozone (i.e., ozone precursors) and particulate matter. These thresholds have been established to meet CAAQS and NAAQS. Therefore, the Project would not contribute substantially to existing or projected violations of those standards.

CO emissions from traffic generated by the Project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to

cause high, localized concentrations of CO. Air pollutant monitoring data indicate that CO levels have been below state and federal standards in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. The highest measured level over any 8-hour averaging period during the last three years in the Bay Area is less than 3.0 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. Intersections affected by the Project would have traffic volumes less than the BAAQMD screening criteria for CO hot spots and therefore the Project would not cause a violation of this ambient air quality standard.[8]

In addition to BAAQMD thresholds, which provide a basis for quantitatively determining whether the Project would contribute to air quality violations, transportation air quality impacts are assessed for the entire transportation sector, as described in detail above. This is done through the SIP conformity process**,** in which transportation projects are evaluated at the regional level. The Project is included in the 2019 TIP that has been determined to conform to the SIP. Based on the Project's SIP conformity and that the Project's operational emissions would be well below the emission thresholds recommended by BAAQMD, this impact would be **less than significant**.

C. Exposes sensitive receptors to substantial pollutant concentrations, including those that increase health risks such as cancer

The potential for the Project to result in increased community health or cancer risk would occur primarily from the Project being a new source of operational TACs in the vicinity of sensitive receptors. BAAQMD recommends a 1,000-foot screening radius around a project site to identify health and cancer risks. BAAQMD thresholds address both the impact of single and cumulative TAC sources on sensitive receptors (see **Table 5.2-2**). In addition to operational TACs, Project construction activities would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors.

Health Risk and Cancer Risk from Construction Activities

A community health risk assessment of Project construction activities was conducted to evaluate potential health effects on sensitive receptors. This analysis focuses on DPM and $PM_{2.5}$. Sensitive receptors potentially affected by Project construction include residences within 1,000 feet of the construction area (north and northwest along North Canyons Parkway) and portions of the existing roadway network affected by construction traffic from the Project. As shown in **Table 5.2-6**, the maximum increased residential risk would be below the BAAQMD significance threshold of a cancer risk of 10 in one million or greater. The maximum annual $PM_{2.5}$ concentration and computed hazard index (HI) are also below the significance threshold. These thresholds have been established to ensure that unacceptable risks to human health, including cancer, are avoided. Therefore, this impact would be **less than significant**.

[8] For a land-use project type, the BAAQMD CEQA Air Quality Guidelines state that a proposed project would result in a less than significant impact to localized CO concentrations if the project would not increase traffic at affected intersections with more than 44,000 vehicles per hour.

Table 5.2-6 Maximum Community Risk from Construction Activities

Location and Exposure Type	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)[a]	Chronic Hazard Index
Maximum Residential			
Infant/Child	1.1	0.03	<0.01
Adult	0.02	--	--
BAAQMD Significance Threshold	*>10.0*	*>0.3*	*>1.0*
Exceed Threshold	**No**	**No**	**No**

Source: Illingworth & Rodkin, 2019
[a]The annual PM2.5 concentration is the sum of the DPM and fugitive PM2.5 concentrations.

Health Risk and Cancer Risk from Project Operation

Based on the BAAQMD screening calculator results, potential excess cancer risk from Project operation would range from one in one million to four in one million at existing sensitive receptors. This is below the BAAQMD significance threshold of 10 in one million. Annual $PM_{2.5}$ concentrations from Project operation would be 0.12 $\mu g/m^3$, which would not exceed the BAAQMD significance threshold of 0.3$\mu g/m^3$. The maximum community risks from Project operation are summarized in **Table 2.5-7**. These results are based on a calculation that assumes current (2017) vehicle emission rates. However, vehicle emission rates are anticipated to decrease over time as required by state and federal standards. A refined modeling scenario that considers lower emissions rates for the years 2025 and 2040 would likely predict lower impacts.

Project operation would not result in health risk or cancer risk that exceeds BAAQMD thresholds, even when higher vehicle pollutant emissions rates are used. This impact would be **less than significant**.

Table 5.2-7 Maximum Community Risk from Project Operations

Scenario	Fallon Road. & Dublin Blvd.		Croak Rd. & Dublin Blvd. Extension	Doolan Rd. & N. Canyons Parkway
	ADT west	ADT east	ADT east	ADT east
Existing 2017	7,565	0	0	895
No Build 2025	9,705	0	0	985
2025 Plus Project	16,480	11,525	9,850	10,770
2025 ADT Increase	6,775	11,525	9,850	9,785
No Build 2040	11,835	0	0	895
2040 Plus Project	18,555	19,145	15,780	16,460
2040 ADT Increase	6,720	19,145	15,780	15,565
Closest Sensitive Receptor	40 ft North	>700 ft North	>700 ft South	>15 ft North
Cancer Risk	3.56	1.30	0.66	<4.15[3]

Scenario	Fallon Road. & Dublin Blvd.		Croak Rd. & Dublin Blvd. Extension	Doolan Rd. & N. Canyons Parkway
	ADT west	ADT east	ADT east	ADT east
$PM_{2.5}$	0.10	0.04	0.02	0.12
BAAQMD Significance Threshold	Cancer Risk (per million)		Annual $PM_{2.5}$ ($\mu g/m^3$)[1]	
	Less than 10.0 ppm		Less than 0.3 ppm	
Exceed Threshold	**No**		**No**	

Source: Illingworth & Rodkin, 2019
ADT = Average daily trips
[1]The annual $PM_{2.5}$ concentration is the sum of the diesel particulate matter and fugitive $PM_{2.5}$ concentrations.
[2] Roadway Screening Calculator does not consider roadways to be sources of substantial HI.
[3] Note screening cancer risk prediction based on residential exposure (i.e., infant, child and adult exposure over 30 years), where nearest receptor is a school and with less exposure duration (i.e., child exposure over 9 years).

D. Creates objectionable odors affecting a substantial number of people

BAAQMD lists types of land uses typically associated with odor complaints including but not limited to wastewater treatment plants, landfills, confined animal facilities, composting stations, and food manufacturing plants. Neither construction nor operation of the Project is expected to produce objectionable odors. Project implementation would not include the addition or expansion of any of the land use types or activities known to cause objectionable odors. Therefore, this impact would be **less than significant**.

E. Cumulative impact of any criteria pollutant

The Project would not result in a cumulative impact of any criteria air pollutant, as shown in **Table 5.2-5**. See discussion under significance criteria "B" above.

CUMULATIVE IMPACTS

As explained in the discussion above, air quality impacts for transportation projects are assessed across the transportation corridor in order to evaluate impacts at both local and regional levels. The qualitative and quantitative analysis above takes into consideration cumulative conditions (2040), through incorporation of land use changes anticipated in 2040 as reflected in the TIA. Because the Project would not exceed thresholds for the Bay Area Air Basin set by BAAQMD, and is included in the 2019 TIP that was found to conform with the SIP, the Project would not contribute to any cumulative impact. Future development listed in Chapter 4, Introduction to Environmental Analysis, would be required to complete independent air quality analysis under CEQA, and would also be required to implement applicable mitigation measures established in prior environmental documents such as the Dublin General Plan EIR, Eastern Dublin Specific Plan EIR, and the Fallon Village SEIR. Therefore, a cumulative impact would not occur. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact.

REFERENCES

Bay Area Air Quality Management District. 2017. California Environmental Quality Act Air Quality Guidelines.

Bay Area Air Quality Management District. 2017. Air Quality Standards and Attainment Status. Available: http://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status. Accessed November 26, 2018.

California Air Pollution Control Officer's Association. 2009. Health Risk Assessments for Proposed Land Use Projects.

California Air Resources Board. 2016. Ambient Air Quality Standards. Available: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf?_ga=2.83536662.1487978857.1543344208-1001763494.1486447561. Accessed November 26, 2018.

California Air Resources Board. 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Available: https://www.arb.ca.gov/diesel/documents/rrpFinal.pdf. Accessed: November 26, 2018.

City of Dublin. 1985. General Plan. Community Development Department. Dublin, CA. Amended November, 2017.

City of Livermore. 2004. City of Livermore General Plan 2003-2025. Amended December 2014.

Federal Highway Administration. 2016. Updated. Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents.

Illingworth & Rodkin, Inc.2018. Air Quality Technical Report.

Metropolitan Transportation Commission and Association of Bay Area Governments. 2016. Plan Bay Area 2040. Amended March 2018.

Kittelson & Associates, Inc. 2018. Dublin Boulevard-North Canyons Parkway Extension Transportation Impact Analysis.

5.3 BIOLOGICAL RESOURCES

INTRODUCTION

This section evaluates impacts to biological and aquatic resources that would occur as a result of the Project. Types of resources affected include habitat, aquatic resources, and special-status species. Unless otherwise noted, information in this section is drawn from the *Biological Resources Report* prepared by H. T. Harvey & Associates (see **Appendix E** of this Draft EIR), which included desktop reviews and field surveys to identify biological resources on the Project site and within the larger biological study area (BSA).

Scoping Issues Addressed

The following organizations submitted comments regarding biological and aquatic resources on the Project site during the public scoping period: United States Fish and Wildlife Service (USFWS), California Native Plant Society (CNPS) East Bay Chapter, East Bay Regional Park District, Alameda County, and Save Mount Diablo. These comments generally related to the following:

- Potential impacts on protected plant species, plant communities, wildlife species, habitat, and wetlands resulting from Project construction, long-term operation, and growth inducement, including associated avoidance, minimization, and mitigation measures
- Survey methodology for assessing existing biological conditions
- Wildlife corridors
- Potential wetlands and vernal pools in the Project site, and direct or indirect impacts to the broader watershed that support protected species and habitats
- Consistency with the East Alameda County Conservation Strategy (EACCS), including application of relevant mitigation and minimization measures
- Impacts to federally protected species and their habitat, including calliope silverspot butterfly (*Speyeria callippe callippe*), California red-legged frog (*Rana draytonii)*, California tiger salamander (*Ambystoma californiense*), Congdon's tarplant (*Centromadia parryi ssp. congdonit*), and San Joaquin spearscale (*Extriplex joaquinana*)

USFWS expressed concerns that future development along the proposed road extension would degrade listed species habitat. Because this habitat quality loss is an indirect effect of the roadway construction, the City of Dublin (Dublin) will mitigate accordingly for this indirect effect, as discussed below under Impacts and Mitigation Measures.

REGULATORY SETTING

Federal

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects listed wildlife species from harm or "take" which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that directly results in death or injury to a listed wildlife species. An activity can be defined as "take" even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under FESA if they occur on federal lands or if the project requires a federal action, such as a Clean Water Act (CWA) Section 404 fill permit from the United States Army Corps of Engineers (USACE).

The USFWS and the National Marine Fisheries Service (NMFS) have jurisdiction over federally listed, threatened and endangered species under the FESA. These agencies also maintain lists of proposed and candidate species. Species on these lists are not legally protected under the FESA, but may become listed in the near future and are often included in agency review of a project.

Clean Water Act

Under Section 404 of the CWA, the USACE regulates the discharge of fill material into Waters of the U.S, including wetlands and other waters. The USACE define wetlands in 33 Code of Federal Regulations (CFR) Part 323.2 as "an area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The boundaries of wetlands that fall under USACE jurisdiction are delineated using an approach that relies on identification of three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology indicators.

In aquatic habitat, the USACE jurisdiction extends to the ordinary high water mark (OHWM), which is defined in 33 CFR Part 328.3 as "the line on the shore established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation or the presence of litter and debris."

Federal Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (MBTA), 16 United States Code (U.S.C.) § 703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Most native bird species are covered by this Act. In addition, Title 50 CFR Part 10 protects nesting birds.

Executive Order 11990 – Protection of Wetlands

Executive Order 11990, dated May 24, 1977, "Protection of Wetlands", establishes a national policy to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands by (1) acquiring, managing, and disposing of federal lands and facilities, (2) providing federally undertaken, financed, or assisted construction and improvements, and (3) conducting federal activities and programs impacting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

State

California Endangered Species Act

The California Endangered Species Act (CESA), California Fish and Game Code, Chapter 1.5, Section 2050-2116, prohibits the take of any plant proposed for listing as rare and any plant or animal listed as rare, threatened, or endangered. In accordance with the CESA, the California Department of Fish and Wildlife (CDFW) has jurisdiction over state-listed species (Fish and Game Code Section 2070). The CDFW regulates activities that may result in 'take'[1] of individuals listed under the CESA. Although habitat degradation or modification is not expressly included in the definition of 'take' under the Fish and Game Code, the CDFW has interpreted take to include the killing of a member of a species which is the proximate result of habitat modification.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Porter Cologne Act), the State Water Resources Control Board has the ultimate authority over state water rights and water quality policy. The Porter-Cologne Act broadly defines Waters of the State as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Porter-Cologne Act also establishes nine Regional Water Quality Control Boards (RWQCBs) to oversee water quality on a day-to-day basis. Pursuant to Section 401 of the Federal CWA, projects that are regulated by the USACE must obtain water quality certification from the RWQCB. This certification ensures that a project would uphold state water quality standards.

The RWQCB may impose mitigation requirements even if the USACE does not, and it should be noted that California's jurisdiction to regulate its water resources is much broader than that of the federal government. The State Water Board works in coordination with RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and have the authority to approve, with or without conditions, or deny projects that could impact waters of the State under the CWA Section 401 and Porter-Cologne.

California Fish and Game Code

Pursuant to Fish and Game Code, Section 1603, CDFW regulates any project that will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river,

[1] In this context, 'take' is defined as hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.

stream, or lake designated by the department, or use any material from the streambeds." Section 1602 of the Fish and Game Code requires CDFW notification for proposed activities that may modify a river, stream, or lake. If CDFW determines that proposed activities may substantially adversely impact fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) must be prepared, which sets reasonable conditions necessary to protect fish and wildlife, and must comply with CEQA. CDFW reviews the proposed actions and, if necessary, prepares a LSAA that includes measures to protect affected fish and wildlife resources.

The LSAA notification requirement applies to any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. The CDFW typically considers a river, stream, or lake to include its riparian vegetation, but it may also extend to its floodplain. Riparian is defined as vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself.

The California Fish and Game Code provides regulations pertaining to protection of certain wildlife species. It protects native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. Raptors (i.e., eagles, hawks, and owls) and their nests are specifically protected, as are bats and other non-game mammals are protected by Fish and Game Code, Section 4150, which states that all non-game mammals. Activities resulting in the death of non-game mammals, such as the disturbance of a maternity colony of bats resulting in the death of young may be considered "take" by the CDFW.

State NPDES Requirements

Projects in California must comply with state requirements to control the discharge of stormwater pollutants under the National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit[2], the Statewide Construction General Permit[3], and the San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit.[4] These permit conditions under both of these permits requires that the applicant utilize various measures to control construction-phase and post-construction water quality impacts. Refer to **Section 5.8, Hydrology and Water Quality**, for a discussion of the NPDES requirements.

Local

City of Dublin

City of Dublin Heritage Tree Ordinance

Dublin defines heritage trees as any oak, bay, cypress, maple, redwood, buckeye and sycamore tree having a trunk or main stem of 24 inches or more in diameter measured at 4 feet 6 inches above natural grade. Additionally, any tree preserved as part of an approved development plan, zoning permit, use permit, site development review, or subdivision map is protected as a heritage tree as is

[2] State Water Board Order No. 2014-0077-DWQ
[3] State Water Board Order No. 2009-0009-DWQ
[4] State Water Board Order No. R2-2009-0074

any tree planted as a replacement for an unlawfully removed tree. Heritage trees may not be removed unless a tree removal permit is granted or the removal is approved as part of other approved development permits. If a development site contains heritage trees that are to be preserved under approved development plan, these trees must be protected during site development. A tree protection plan must be approved prior to commencement of work unless Dublin's Community Development Director has specifically waived this requirement.

Alameda County

East Alameda County Conservation Strategy

The EACCS serves as a coordinated approach to conservation in the eastern portion of Alameda County (County), including the cities of Dublin and Livermore.[5] The City of Dublin adopted the EACCS as guidance for public infrastructure and capital improvement projects and uses the document to provide input on managing biological resources and conservation priorities during public project-level planning and environmental permitting. The Project site is located within Conservation Zone 4[6] of the EACCS study area, and includes suitable habitat for several EACCS focal land cover types, plant species, and wildlife species (**Table 5.3-1**). Impacts to these species must be avoided, minimized, and mitigated through implementation of measures listed in the EACCS.

Table 5.3-1 EACCS Focal Habitat and Species Applicable to the Project

Land Cover Types	Plant Species	Wildlife Species
Seasonal Wetlands	Livermore Tarplant	California Red-Legged Frog
California Annual Grasslands	Congdon's Tarplant	California Tiger Salamander
Mixed Riparian Woodland	San Joaquin Spearscale	San Joaquin Kit Fox
	Palmate-Bracted	Tricolored Blackbird
		Western Burrowing Owl
		Golden Eagle
		American Badger

Source: H. T. Harvey & Associates, 2018

Alameda County Tree Ordinance

The County protects trees within the County right-of-way that are at least 10 feet tall and 2-inches diameter at breast height (DBH)[7] on the main stem. Removal of such trees requires an encroachment permit from the County. Typically, such a permit requires replacement of the ordinance tree, if feasible.

[5] East Alameda County Conservation Strategy Steering Committee. 2010. *East Alameda County Conservation Strategy.* Available: http://www.eastalco-conservation.org/documents.html. Accessed: November 5, 2018.
[6] EACCS 'Zone 4' areas provide spatially explicit data on where natural communities occur, how many acres are currently protected, and how many should be protected for the natural community to persist.
[7] Diameter at breast height is the standard for measuring trees, and refers to the tree diameter measured at 4.5 feet above the ground.

City of Livermore

City of Livermore Tree Preservation Ordinance

Livermore's Tree Preservation Ordinance establishes the policies, regulations, and standards for the protection of trees on any parcel of land within Livermore. It is Livermore's policy to require the preservation of protected trees, unless a reasonable and conforming use of a property justifies the removal, relocation, and/or encroachment into the protected zone of such tree. In accordance with the Tree Preservation Ordinance, no person shall remove or encroach into the protected zone of any protected tree or trees upon a property within Livermore unless a tree permit has been issued pursuant to the Section 12.20 of the Livermore Municipal Code.

EXISTING CONDITIONS

The 141.4-acre BSA consists of primarily undeveloped grazing ranchland and open space, with intermittent residences and outbuildings. The Project site is surrounded by generally urban uses to the east, south, and west, while the north is relatively undeveloped. I-580 is located immediately south of the BSA, while Fallon Road and Doolan Road represent the western and eastern BSA boundaries. Land uses in the immediate BSA vicinity include residential, industrial, open space, and commercial uses in Dublin, undeveloped land and agricultural uses in the County; and business and commercial uses in Livermore. The BSA is shown on **Figure 5.3-1**.

Improvements to the agricultural lands generally consist of private paved and unpaved roads used to access private property, fences, barns, corrals, wells, water tanks, single-family homes and various outbuildings. The topography of the BSA ranges from relatively flat in the southern portion near I-580, to gently rolling hills to the north. The topography slopes slightly northward, and Cottonwood Creek drains from north to west across the eastern half of the BSA.

Although existing land uses in the BSA are largely agricultural or rural-residential, the City of Dublin General Plan[8] and the EDSP[9] anticipate the development of residential, industrial, office, and commercial land uses in the BSA. The County's General Plan, East County Planning Area component, includes the Project as a roadway extension connecting eastern Dublin with Livermore across County land. Refer to **Chapter 3.0, Project Description**, for a discussion of these planning efforts.

Biologic Habitats within BSA

The BSA contains eight biotic habitats described below and shown on Figure 5.3-1: California annual grassland, seasonal wetland, perennial stream, ephemeral stream, perennial marsh, mixed riparian woodland, riparian grassland, and developed/landscaped habitat. Refer to **Appendix E** for a complete discussion of these biotic habitats.

[8] City of Dublin. 1985. General Plan. Community Development Department. Dublin, CA. Amended November, 2017.
[9] City of Dublin. 1994. East Dublin Specific. Community Development Department. Dublin, CA. Updated September 2016.

California Annual Grassland

The majority of the BSA consists of California annual grassland habitat. Much of this grassland is currently grazed by cattle and is dominated by a suite of non-native grasses and common weedy and non-native forbs.[10] While the majority of the grasslands in the BSA are composed of non-native, ruderal vegetation, some portions exhibit higher species diversity and frequency of native wildflowers, such as common gumplant (*Grindelia camporum*), Itherial's spear (*Triteleia laxa*), annual lupine (*Lupinus bicolor*), blue eyed grass (*Sisyrinchium bellum*), blow wives (*Achyrachaena mollis*), shining peppergrass (*Lepidium nitidum*), and small flowered fiddleneck (*Amsinkia menziesii*).

Seasonal Wetlands

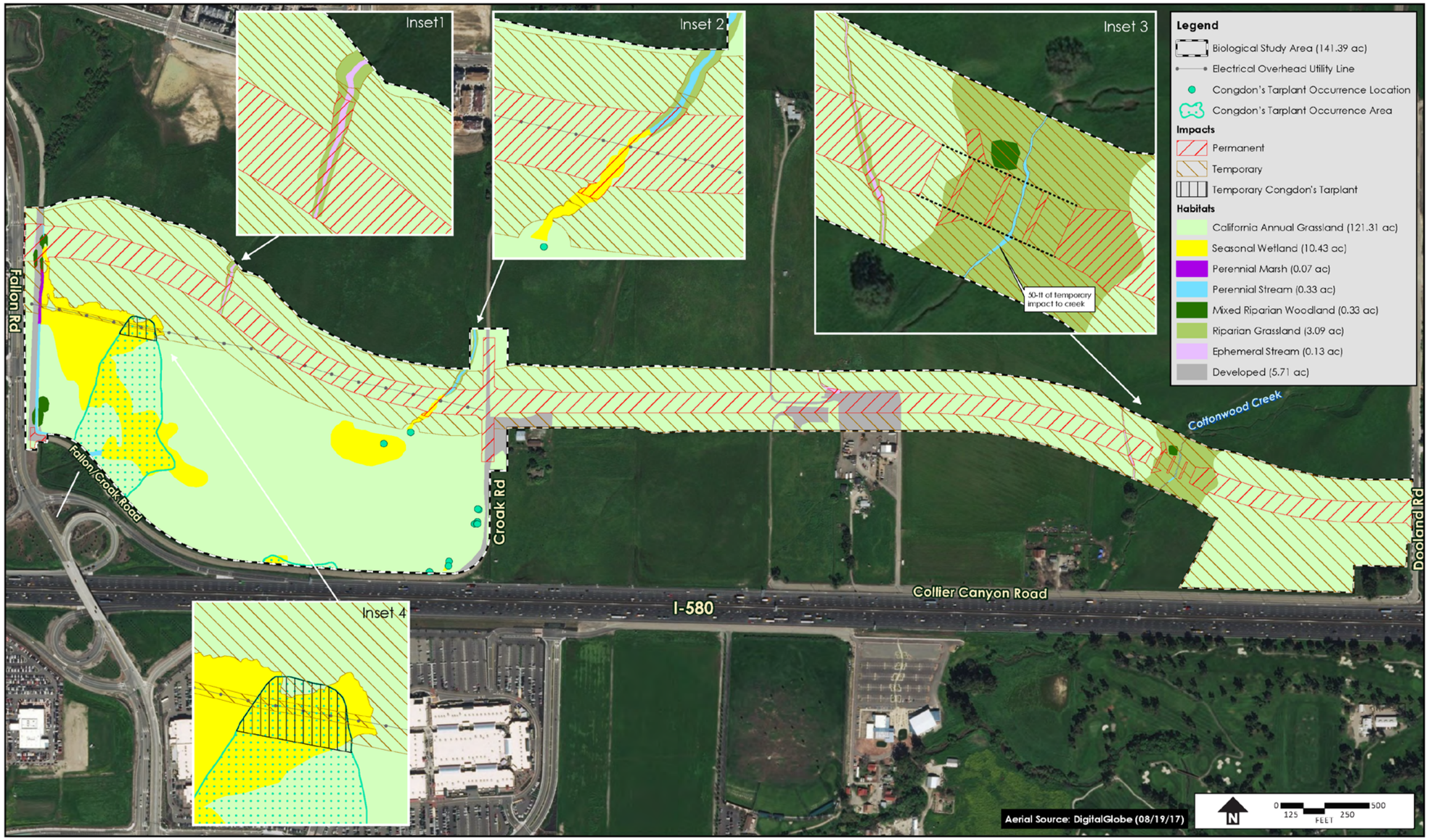
Large wetland patches scattered in the western portion of the BSA comprise the seasonal wetland complex. The seasonal wetlands occur in low-lying areas and the largest patch is directly connected to the perennial marsh habitat that runs parallel to Fallon Road (**Figure 5.3-1**). Native forbs and grasses dominate the seasonal wetland vegetation. Several species of non-native grasses are common in the more limited seasonal wetlands scattered along ephemeral drainages across the BSA. Seasonal wetlands can provide habitat for a unique array of special-status and common wildlife species that rely specifically on the particular features they provide. However, because the seasonal wetlands in the BSA are regularly disturbed by grazing cattle that compress soils and inhibit use by wetland-associated invertebrate and amphibian species that might take refuge in the moist soils, the habitat provided by these features is functionally similar to the adjacent grasslands and perennial marsh from the perspective of wildlife use.

Perennial Streams

The Project site includes Cottonwood Creek and three unnamed streams, which are all perennial streams and comprise the perennial stream habitat in the BSA. These four perennial streams are in the western portion of the BSA and shown on **Figure 5.3-1**. They generally convey water year-round, and either do not contain vegetation due to ponding and flows or contain vegetation that is consistent with the adjacent perennial marsh areas (described below). Although perennial streams in the County can provide habitat for a variety of fish and wildlife species, perennial stream habitat in the BSA provides limited habitat for fish and aquatic wildlife species for the reasons discussed below.

[10] Forbs are herbaceous flowering plants.

This Page Intentionally Left Blank



Habitat within the Biological Study Area

Figure 5.3-1

Source: H.T. Harvey and Associates, 2018

This Page Intentionally Left Blank

Cottonwood Creek

Cottonwood Creek is a perennial stream with a connection to groundwater and flows overland through the eastern portion of the BSA. The portion of Cottonwood Creek through the BSA is shallow, steeply incised, unshaded, and contains little to no in-stream vegetation, which limits its value for fish and aquatic wildlife. Numerous erosional features were apparent during surveys. No fish were observed within Cottonwood Creek during reconnaissance surveys, and the creek's shallow waters and lack of large pools make it unsuitable for most fish species. Small fish adapted to warm waters, such as the native California roach (*Hesperoleucus symmetricus*) and non-native mosquitofish (*Gambusia affinis*), may occur in limited numbers within the creek.

Unnamed Tributaries

The Project site also contains three unnamed tributaries:

- A small perennial stream located along the western portion of Croak Road. A portion of this stream has been culverted and capped with concrete for roughly 350 linear feet. Substantial flows of water emanated from a culvert outlet in both 2017 and 2018 where the stream daylights, and a portion of this stream spills into the northern portion of the wetland complex immediately east of Fallon Road. This aboveground, wetted streambed supports perennial marsh vegetation (described below) and flows southward, parallel to western Croak Road.
- To the west of the eastern portion of Croak Road, a small perennial stream emerges from the hills and flows into a seasonal wetland swale as the topography becomes less steep.
- The southwest corner of the BSA includes a perennial stream that drains into the southern portion of the large wetland complex. The stream crosses to the west under Fallon Road and runs outside the BSA parallel to I-580 before discharging to a culvert under the highway and entering a flood control channel. This channel then drains to Arroyo Las Positas to the south.

The unnamed tributaries in the western portions of the Project site along Fallon/Croak Road are shallow, generally holding no more than a few inches water. Nevertheless, in-stream vegetation along this tributary provides habitat for common amphibians and reptiles, as well as small numbers of non-native mosquitofish. Aquatic reptiles, such as the common garter snake (*Thamnophis sirtalis*) and western pond turtle (*Actinemys marmorata*), may forage and disperse along this stream. Common amphibians such as the native Sierran chorus frog (*Pseudacris sierrae*), as well as the non-native bullfrog (*Lithobates catesbeianus*), were observed in shallow pools and may utilize these streams for breeding and dispersal.

Ephemeral Streams

Three ephemeral streams occur in the BSA. These streams convey water during and immediately following rain events and dry out during the summer months. The majority of ephemeral stream banks found on the Project site are vegetated with plants found in the surrounding California

annual grasslands. The ephemeral nature of these drainages precludes the presence of fish. Similarly, aquatic wildlife species are not expected to occur regularly within these drainages, but may utilize this habitat for dispersal when water is present. Wildlife using adjacent habitats is expected to forage and take shelter in the vegetation within the drainage. However, due to the limited extent of this habitat type within the BSA, it is not expected to support wildlife species not found in the adjacent, more extensive, habitat types (i.e., California annual grassland and seasonal wetland).

Perennial Marsh

The perennial marsh habitat in the BSA is confined to a narrow roadside channel within the OHWM of the perennial stream along Fallon/Croak Road. The marsh supports strongly hydrophytic[11], emergent[12] plants. The marsh contains surface water, which was evident during all survey dates, and is vegetated with native rushes, including Mexican rush (*Juncus mexicanus*), iris-leaved rush (*Juncus xiphioides*), and hard-stemmed bulrush (*Schoenoplectus acutus*). Along the fence line, dominant vegetation included hard-stemmed bulrush along with other California natives (alkali bulrush [*Bolboschoenus maritimus*], water parsnip [*Berula erecta*]), and non-natives (creeping buttercup [*Ranunculus repens*], water speedwell [V*eronica anagallis-aquatica*]). None of these species are rare or otherwise special-status.

As the perennial marsh habitat is confined to a narrow roadside channel, many wildlife species that inhabit more extensive marshes, such as the Virginia rail (*Rallus limicola*), are not expected to be present. Nevertheless, the presence of water in the marsh and existing vegetation support a diverse and abundant invertebrate fauna, which provides ample foraging opportunities for insectivores. Aerial insectivores such as the cliff swallow (*Petrochelidon pyrrhonota*), violet-green swallow (*Tachycineta thalassina*), and free-tailed bat (*Tadarida brasiliensis*) frequently forage over marsh habitats.

Mixed Riparian Woodland

Mixed riparian woodlands in the BSA are composed of stands of mature trees rooted in the banks of perennial streams. Tree species include red willow (*Salix laevigata*) and valley oak (*Quercus lobata*). Valley oaks in and near the BSA that occur along Cottonwood Creek are very large (up to 4.8 feet diameter at breast height). Riparian habitat is typically of high value to wildlife and birds, with water and streamside vegetation supporting a diverse and abundant fauna. However, the extremely limited extent of riparian woodland within the BSA greatly limits its value for wildlife.

Riparian Grassland

Riparian grasslands occur within the top of the bank of Cottonwood Creek and the unnamed perennial stream to the west of Croak Road, totaling about 3 acres. The understory of mixed riparian woodlands integrates with the surrounding habitats, and the areas of riparian grassland

[11] Hydrophytic plans grow wholly or partly submerged in water
[12] Emergent plants are rooted in the lake bottom, but their leaves and stems extend out of the water

lacking tree cover support similar species to the surrounding California annual grassland, with species such as soft chess (*Bromus hordeaceus*) and Italian ryegrass (*Lolium multiflorum*).

Developed/Landscaped

Developed/landscaped habitat is present in the BSA as hardscaped areas along Fallon Road and Croak Road in the western portion of the Project site. Additional hardscaped areas such as parking, storage, and sheds and landscaped areas occur around buildings, fences, parking areas, and a landscaping company in the remaining eastern portion of the Project site.

Small patches of non-native horticultural plant species are scattered around the buildings in the developed/landscaped parts of the BSA. Several patches of ornamental trees, primarily eucalyptus (*Eucalyptus sp.*), occur near fence lines and buildings. Wildlife that occurs in developed/landscaped portions of the site includes species that are typically accustomed to urban environments and high levels of disturbance from human activities.

Special-Status Plants

The *Biological Resources Report* identified 81 special-status plant species previously known to occur within the Project region, and eliminated 59 plant species as unlikely to occur within the BSA based on the following criteria:

- Absence of suitable habitat types
- Lack of specific habitat or soil requirements
- Elevational range of the species being outside of the elevation range in the BSA, which is approximately 380 feet to 410 feet above sea level
- The species is presumed to be extirpated from the Project vicinity, which includes a 5-mile radius around the BSA.

Of these 22 special-status plant species with some potential to occur in the BSA, three species could be present in the BSA because prior surveys in the vicinity confirmed their presence. These three species - Congdon's tarplant (*Centromadia parryi ssp. congdonii*), San Joaquin spearscale (*Extriplex joaquiniana*), and prostrate vernal pool navarretia (*Navarretia prostrata*) – are discussed in **Table 5.3-2**. The remaining 19 species are eliminated from consideration due to a lack of suitable habitat within the BSA or negative survey results following surveys in 2002, 2017, and 2018. Refer to **Appendix E** of this Draft Environmental Impact Report (EIR) for a complete discussion of plant species considered absent from the BSA.

Special-Status Wildlife

A number of special-status animal species are known to occur in eastern Alameda County but considered absent from the BSA because of a lack of suitable habitat or because the site is outside of the known range of the species. **Table 5.3-2** includes the listed and proposed species, natural

communities, and critical habitat of wildlife considered present in the BSA. Refer to **Appendix E** of this Draft EIR for a complete discussion of wildlife species known to occur in eastern Alameda County but considered absent from the BSA.

Wildlife Corridors

This section draws from Section 2.4.4 of the EACCS (Habitat Connectivity and Wildlife Linkages), which explains the importance of habitat connectivity and wildlife linkages and summarizes potential wildlife linkages that may exist in eastern Alameda County.

Urban sprawl, roads, conversion of wildlands, and other anthropogenic influences are fragmenting habitat throughout California. Habitat fragmentation is one of the greatest threats to biodiversity because it impedes or prevents the exchange of individuals and genetic material among populations of wildlife and plants, thereby reducing genetic diversity. Genetic diversity is important in a population because it increases the chances that individuals can survive catastrophic events such as fire, disease, drought, or invasion by nonnative species. Moreover, entire populations may disappear by chance or from a catastrophic event. Habitat fragmentation may prevent suitable habitat from being recolonized from healthy populations after such an event. For larger species of mammals, long-distance movement and dispersal is an important aspect of their basic biology and is critical for their long-term survival. Habitat connectivity and wildlife linkages are particularly important in the current setting of climate change; species need to disperse to find suitable habitat they can tolerate, which is fluctuating due to shifting climate patterns. Maintaining and preserving wildlife corridors is critical to the persistence and survival of many species.

Wildlife linkages are defined as habitat areas that may allow for the long-distance movement of wildlife from one area to another. Linkages can be anything from narrow strips of habitat that function as a tunnel or conduit (i.e., only permit movement but not breeding or foraging) to a large area of intact habitat that is used for movement or dispersal and other life functions. Some species require linkages for periodic migrations among different habitat types used for breeding, birthing, feeding, or roosting. Wildlife movement from one important habitat area to another may vary from daily to seasonal migration depending on the species. The second need for a linkage is the permanent immigration or emigration of individuals among habitat patches, allowing for gene flow[13] and recolonization after local extinction.

[13] Gene flow refers to the movement of individuals, and/or the genetic material they carry, from one population to another.

Table 5.3-2 Special-status Plants and Wildlife Considered Present in the BSA

Wildlife Species	Status[1]	General Habitat Description	Habitat within BSA
Special-status Plants			
Prostrate vernal pool navarretia (*Navarretia prostrata*)	CNPS Rank 1B.1	Coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools; 5 – 3,970 feet above mean sea level (AMSL)	The California Natural Diversity Database (CNDDB) recorded a small population of prostrate vernal pool navarretia within a roughly bounded area within the western portion of the BSA. This area is non-specific, but appears to be centered on the central or southern portions of the seasonal wetland complex in the western portion of the BSA, which also represents the area of suitable habitat for the species. It was observed multiple times in 2001, 2008, and 2010, but was not detected in 2017 or 2018 possibly due to changing hydrologic conditions after 2010. The statewide population is composed of approximately 51 extant occurrences. Although not observed during the March 2017 and May 2018 surveys, it was observed on the site in several recent years and therefore it is assumed to be potentially present in the central and southern portions of the seasonal wetland complex as seedbank.[14]
Congdon's Tarplant (*Centromadia parryi ssp. congdonii*)	CNPS Rank 1B.1	Valley and foothill Grassland in depressions, swales floodplains with alkaline soils; usually disturbed areas; 0 – 755 feet AMSL	The species was observed during the 2018 focused plant surveys of the BSA. The statewide population includes 91 occurrences, and of these, approximately one occurs within the southwestern portion of the BSA and 19 occur within the immediate vicinity. The CNDDB has recorded up to 114,000 individuals of Congdon's tarplant in the southwestern portion of the BSA between Fallon Road and Croak Road, and 77,000 individuals were estimated in 2018. Determined to be present.
San Joaquin spearscale (*Extriplex Joaquinana*)	CNPS Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland in alkaline soils; 0 – 2,740 feet AMSL	Suitable habitat and suitable alkaline soils occur on site. Although not observed during the 2017 and 2018 site surveys, it was observed in the BSA in 2002. It produces a long-lived seed bank, which germinates in response to soil disturbances and can exist in weedy grasslands dominated by exotic species. The statewide population is composed of approximately111 extant occurrences; of these, 11 are or were within the immediate vicinity of the BSA. The CNDDB has recorded several occurrences near the BSA, some of which have likely been extirpated by recent development. Assumed to be potentially present as seedbank within the alkaline-affected seasonal wetlands in the southwestern portion of the BSA.

[14] In this context, a seed bank is the natural storage of seeds, often dormant, within the on-site soils.

Wildlife Species	Status[1]	General Habitat Description	Habitat within BSA
Special-status Wildlife			
California tiger salamander (*Ambystoma californiense*)	FT, SE	Vernal or temporary pools in annual grasslands or open woodlands.	Based on prior surveys of the BSA and on CNDDB records, this species is known to occur within the immediate vicinity of the BSA. A site assessment and focused surveys for breeding tiger salamanders, conducted from 2001 through 2003, detected several adult tiger salamanders immediately north of to the BSA. Numerous additional records of tiger salamanders occur within ponds, intermittent streams and their tributaries in the vicinity of the BSA, including breeding records in ponds in close proximity to the site. While suitable breeding ponds are absent from the BSA, perennial and ephemeral stream, perennial marsh, and seasonal wetland habitats on-site may provide suitable dispersal and foraging habitat for the species, while California annual grasslands in the BSA support California ground squirrel and pocket gopher colonies whose burrows can provide suitable refugia for California tiger salamander. The species is therefore determined to be present.
California red-legged frog (*Rana draytonii)*	FT, CSSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation.	A site assessment and a focused survey for breeding California red-legged frogs, conducted in 2001 in the western portion of the Project site, failed to detect any California red-legged frogs, although the quarry pond to the north of the BSA was considered to provide suitable breeding habitat. Additional surveys conducted in 2003 detected an adult California red-legged frog at the head of an unnamed drainage within the immediate vicinity of the BSA. Suitable breeding habitat for red-legged frogs is absent from the BSA. However, perennial and ephemeral stream, perennial marsh, seasonal wetland, and California annual grassland habitats on site provide suitable foraging, dispersal and refugial habitat for red-legged frogs. Thus, the species is determined to be present. The northern portion of the BSA has been designated as critical habitat by the USFWS.
Tricolored blackbird (*Agelaius tricolor)*	ST	Nests in extensive emergent vegetation and fields.	Foraging habitat for this species occurs in the perennial marsh, seasonal wetlands, and California annual grassland habitats on the eastern portion of the Project site. Dense stands of emergent vegetation and mustard (*Brassica* sp.) between Fallon/Croak Road and the I-580 off ramp provide marginally suitable habitat for a nesting colony of tricolored blackbirds. Furthermore, the species has been recorded in the BSA and was known to breed in the vicinity. Thus, there is some potential, albeit low, for a breeding colony of tricolored blackbirds to become established in perennial marsh habitat in the southwestern portion of the Project site.

Wildlife Species	Status[1]	General Habitat Description	Habitat within BSA
San Joaquin kit fox (*Vulpes macrotis mutica)*	FE, ST	Extensive open grasslands or grasslands with scattered shrubby vegetation.	EACCS habitat modeling places the BSA within the extreme northwestern edge of the current range of the species. Extensive surveys of the BSA in the 1990s and early 2000s failed to detect any kit fox or evidence of their presence and all available data indicate that the current range of the San Joaquin kit fox does not extend as far south/west as the Dublin Boulevard area. Only a single kit fox has been recorded in the area, approximately 5 miles northeast of the BSA along Morgan Territory Road. Because California annual grasslands in the BSA offer ostensibly suitable foraging and denning habitat for kit foxes, and because an individual has been detected to the northeast, we cannot rule out the possibility that individual kit foxes may occur on-site. If the species were to be present, it would likely occur only as a rare and irregular transient. Given the existing high levels of human disturbance and lack of recent records anywhere in the vicinity, in spite of the presence of ostensibly suitable habitat, this species is considered absent from the site.
Western pond turtle (*Emys marmorata)*	CSSC	Occurs in and around a wide variety of perennial or nearly perennial aquatic habitats including canals, stock ponds, lakes, streams, and rivers. Nests in uplands, typically in close proximity to aquatic habitat.	Aquatic habitat for the western pond turtle occurs within the reaches of Cottonwood Creek, in the unnamed tributary along Fallon/Croak Road, and in ponded water at culverts along Croak Road. Although western pond turtles have been observed within Cottonwood Creek north of the BSA, this area of the creek provides only marginally suitable foraging habitat for the species. Within the BSA, Cottonwood Creek is shallow, steep banked, and lacks suitable basking sites and food resources; thus western pond turtles are not expected to occur regularly in the reaches within the BSA. Similarly, the shallow waters of the unnamed tributaries along Fallon/Croak Road provide only marginally suitable foraging habitat for the species. Nevertheless, the pond turtles may utilize perennial and ephemeral stream habitats in the BSA for dispersal or to move between suitable aquatic, foraging, and upland[15] breeding habitats. Annual grasslands throughout the BSA, but in particular near Cottonwood Creek and the other perennial streams, provide suitable nesting habitat for the species. Thus western pond turtles may occur within the BSA, primarily as transients in aquatic and marsh habitat, but potentially as breeders in upland habitat.

[15] Upland areas refer to ground elevated above the lowlands along rivers or between hills.

Wildlife Species	Status[1]	General Habitat Description	Habitat within BSA
Burrowing owl (*Athene cunicularia)*	CSSC	Grasslands and ruderal habitats where ground squirrel or other burrows are present.	Burrowing owls and evidence of their presence (i.e., whitewash and/or pellets) were within the immediate vicinity of the BSA during focused surveys conducted in 2002. Burrowing owls have also been observed in grasslands within 2 miles of the BSA, primarily located on properties to the north. Burrows of California ground squirrels and active ground squirrel colonies were observed during the 2002 habitat assessment of the sites, and were also observed during the 2017 and 2018 surveys. Because suitable breeding and foraging habitat for burrowing owls is present throughout the BSA, particularly in the upland grasslands, burrowing owls may utilize California annual grasslands and portions of abandoned developed/landscaped habitats within the BSA.
Loggerhead shrike (*Lanius ludovicianus)*	CSSC	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats.	Suitable foraging habitat for loggerhead shrikes is available throughout the grassland habitat on site, and a loggerhead shrike was observed in the BSA during surveys in 2017 and 2018. Suitable nesting habitat is available within the BSA in isolated shrubs or trees, and up to two pairs of this species may nest in the BSA.
Yellow warbler (*Lanius ludovicianus)*	CSSC	Nests in riparian woodlands, especially dominated by cottonwood (*Populus* spp.), willow (*Salix* spp.), and alder (*Alnus* spp.).	No suitable riparian habitat occurs within the BSA. As migrants, yellow warblers may occur as occasional foragers on the BSA, but are not expected to nest on or adjacent to the BSA.
Grasshopper sparrow (*Ammodramus savannarum)*	CSSC	Breeds and forages in meadows, fallow fields, and pastures.	Suitable nesting and foraging habitat is present throughout grasslands in the BSA.
Pallid bat (*Antrozous pallidus)*	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees.	Suitable roosting and breeding habitat for individuals or a moderate number of pallid bats may be present in larger trees if cavities are present or abandoned buildings in the BSA. Abandoned buildings within the Project site could provide habitat for a medium sized roosting or maternity colony, although no evidence of large numbers of bats was observed during reconnaissance surveys in 2017.

Wildlife Species	Status[1]	General Habitat Description	Habitat within BSA
Townsend's big-eared bat (*Corynorhinus townsendii)*	CSSC	Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats.	Suitable roosting and breeding habitat for individuals or a moderate number of pallid bats may be present in larger trees if cavities are present or abandoned buildings in the BSA. Abandoned buildings within the Project site may provide habitat for individual roosting or breeding Townsend's big-eared bats. Therefore, they may occur in the BSA as occasional foragers.
American badger (*Taxidea taxus)*	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas.	Badgers are not known to occur within the BSA and none were observed during reconnaissance level surveys in 2017. However, badgers have been recorded in the surrounding vicinity. Suitable denning and foraging habitat for badgers is present in the grassland habitats, although badgers are unlikely to den on-site due to the surrounding high levels of human disturbance. Should badgers occur in the BSA, they would most likely represent dispersing or foraging individuals. Nevertheless, there is some potential for badgers to den in the BSA, albeit low.
White-tailed kite (*Elanus leucurus)*	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	White-tailed kites are known to occur in the BSA and were observed during reconnaissance level surveys in 2017. Grassland habitat provides suitable foraging habitat for kites, and isolated trees on site may provide suitable nesting habitat for up to one pair of nesting white-tailed kites.
Golden eagle (*Aquila chrysaetos)*	SP	Breeds on cliffs or in large trees (rarely on electrical towers), forages in open areas.	No golden eagle nests are known from the BSA or vicinity and suitably large trees or structures that could support an eagle nest are largely absent from the BSA and surrounding area. In addition, the EACCS models the BSA as potential foraging habitat for the species, but does not model any potential nesting habitat in the vicinity. Thus, golden eagles may occur as occasional foragers on the BSA, but are not expected to nest on or adjacent to the BSA.

Source: H. T. Harvey & Associates, 2018

[1] Status: Federally Endangered (FE); Federally Threatened (FT); State Endangered (SE); State Threatened (ST); California Fully Protected Species (SP); California Species of Special Concern (CSSC).

All of the EACCS focal species (discussed above under Regulatory Setting), to some degree, rely on habitat linkages to maintain populations and their genetic integrity. Linkage requirements differ greatly from species to species. Specific characteristics of linkages, such as dimensions, location, and quality of habitat, can influence wildlife use. The EACCS identifies three wildlife linkage categories based on an assessment of the movement needs of the focal species:

- Grassland corridors
- Aquatic-upland connectivity
- Riparian/stream connectivity

Grassland Corridors

Grassland Corridors have several land cover types, such as California annual grasslands, which make up this corridor. Several wildlife species, such as the San Joaquin fox, American badger; and perhaps, in some instances, California red-legged frog; along with several other generalist wildlife species, use grassland corridors as linkages to their grassland habitats. The primary kit fox range in Alameda and Contra Costa Counties is in the Diablo Range along the eastern portion of the two counties. Alameda County also supports a relatively large population of nesting golden eagles, which use annual grasslands as their primary foraging habitat. They are sensitive to fragmentation of this habitat, and smaller patch sizes may lead to declines in prey populations.

Aquatic-upland Connectivity

Several special-status reptiles and amphibians rely on both aquatic and upland habitats to complete their life cycle. These species use ponds, streams, and other aquatic habitats that are interspersed within the annual grassland/oak woodland/chaparral complex in eastern Alameda County. Connectivity between ponds and streams is important for species such as the California tiger salamander and California red-legged frog that can move between aquatic features. Parts of the EACCS study area, with a higher density of aquatic features, that are "connected" have a higher probability that individual red-legged frogs or tiger salamanders could interact with other members of the local populations. The exception to that rule occurs along the I- 580 corridor where the distance between aquatic resources is enough to provide reasonable connectivity to species, but the barrier that I-580 precludes that connectivity in most cases.

Riparian/stream Connectivity

At a landscape level, stream and riparian habitats connect the BSA and serve and the primary source of nutrient movement through natural systems. At the species level, the primary functions of stream and riparian habitats are for movement and cover. As discussed above and depicted in **Figure 5.3-1**, the Project site contains several perennial streams, perennial streams, and other riparian areas.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for biological resources were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of impacts related to the Project.

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria:

A. Have an adverse effect, either directly or through habitat modifications, on any species listed as endangered, threatened, or proposed or critical habitat for these species

B. Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS

C. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS

D. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marshes, vernal pools, etc.) through direct removal, filling, hydrological interruption, or other means

E. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites

F. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances

G. Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP

Methodology

As part of the *Biological Resources Report* preparation, qualified biologists established the BSA for the Project. The BSA encompasses all areas and features that may be temporarily or permanently impacted by the Project, as well as surrounding areas that may be indirectly impacted, or where important biological resources occur. Qualified biologists surveyed the BSA to describe biotic habitats within the construction and operational footprints. The survey also identified plants and animals found or likely to be found within the BSA, and included reconnaissance-level surveys in March 207 for wildlife species and their habitats. In May and June 2018, focused rare plant surveys were conducted on several different dates chosen to coincide with the blooming periods of rare plant species with some

potential to occur in the BSA. All surveys included inspections of the Cottonwood Creek channel, perennial and ephemeral drainages, as well as the Project site and surrounding areas as appropriate.

Qualified biologists mapped all biotic habitats within the BSA onto an aerial photograph of the Project site. Habitat acreages were calculated for all habitat types within the BSA using geographical information systems, on-site mapping, and interpretation of aerial photographs. Habitats may be considered sensitive if they are limited in distribution, are regulated, or provide habitat for a sensitive species in this region. Reconnaissance-level surveys, including a by-stem tree survey, were deemed adequate to assess the effects of the Project on biological resources for the purposes of this analysis.

Impact Analysis

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. Have an adverse effect, either directly or through habitat modifications, on any species listed as endangered, threatened, or proposed or critical habitat for these species

And

B. Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS

The 141.4-acre BSA provides habitat that supports numerous special-status plant and wildlife species. Within this BSA, the construction footprint would encompass 81 acres for installation of the Project, including temporary grading and staging areas that would be restored after construction. Of the 81-acre construction footprint, 29 acres would be permanently converted to Project facilities, including the roadway, sidewalks, intersections, and land acquired for right-of-way. The habitat impact acreages calculated in this section are not additive between each species because, in many instances, several species utilize the same habitat area within the construction footprint. For example, although habitat impacts for the California red-legged frog and California tiger salamander are separated by species, both species utilize identical habitat areas on the Project site.

Special-Status Plants (Congdon's Tarplant, San Joaquin Spearscale, and Prostrate Vernal Pool Navarretia)

Impact BIO-1.1: Project construction would result in 0.45 acres of direct and indirect temporary impacts to Congdon's tarplant and its seedbanks, and seed banks of San Joaquin spearscale or prostrate vernal pool navarretia, if these are present within the construction footprint. **(Less than Significant with Mitigation)**

The *Biological Resources Report* determined three special-status plant species occur or have potential to occur in the BSA: Congdon's Tarplant, San Joaquin Spearscale, and Prostrate Vernal Pool Navarretia.

Focused rare plant surveys completed on June 29, 2018 confirmed the presence of Congdon's tarplant in the BSA. The survey observed approximately 77,000 plants distributed over 8.2 acres in the seasonal wetlands along the southern edge of the BSA. Smaller numbers occurred in scattered areas to the west of the main population. Focused surveys in 2017 and 2018 did not observe San Joaquin spearscale nor prostrate vernal pool navarretia, however, both species have a long-lived seed bank. Therefore, this analysis assumes both species may still be present within the BSA as seed banks.

Because San Joaquin spearscale and prostrate vernal pool navarretia are adapted to alkaline wetlands, it is very likely the seed banks do not extend into the construction footprint, as alkalinity lessens to the north. The maximum extent of the anticipated seed bank distribution of either species, based on habitat suitability, would be the northernmost extent of the Congdon's tarplant that was mapped on the site.

Project construction would result in 0.45 acres of direct and indirect temporary impacts to Congdon's tarplant and its seed banks (and seed banks of San Joaquin spearscale or prostrate vernal pool navarretia, if these occur in the construction footprint). Impacts would result from construction access needed to remove utility line and poles, which would then be located elsewhere outside of the Congdon's tarplant population. This could directly affect up to approximately 400 Congdon's tarplant individuals and indirectly affect up to 2,000 plants within 50 feet of the direct impact area, though it should be noted that annual plant populations fluctuate over time in response to climate and other factors, and the 77,000 plants estimated to occur on the site in 2018 was on the higher end of recorded population numbers for this occurrence. No permanent impacts are anticipated to occur to this species or to the seed banks of San Joaquin spearscale or prostrate vernal pool navarretia from the Project.

The Project could result in direct temporary impacts such as trampling or crushing of individual plants, or indirect impacts resulting from alteration of hydrology, dust coverage to foliage from nearby work activities, or a decrease in water quality within wetland areas supporting these species downslope of the Project site. The Project would implement General Construction Permit conditions for dust control, such as watering and control of stormwater/dust-control water on the site during construction. Following construction, water quality would be protected in downslope habitats through implementation of stormwater treatment features such as bioswales or other C.3-

approved measures allowed by the NPDES. However, the Project could still result in direct or indirect impacts to special-status plants. This represents a potentially significant impact, reduced to a less-than-significant impact through application of **Mitigation Measure BIO-1** through **BIO-3**. These measures include construction-period controls to avoid and minimize disturbance or damage to the species, including those in the EACCS, along with post-construction monitoring to evaluate species recovery.

Mitigation for Impact BIO-1.1

Mitigation Measure BIO-1: The following measures shall be implemented to avoid and minimize impacts to special-status plant species and to the other special-status plants that have seed banks that may overlap the construction footprint:

- To the extent feasible, Project construction will avoid all occupied habitat for Congdon's tarplant (which is also potential seed bank area for San Joaquin spearscale or prostrate vernal pool navarretia) plus a 50-foot buffer.
- The mapped areas of Congdon's tarplant will be clearly shown on all construction plans.
- To avoid special-status plants, a buffer of at least 50 feet will be clearly delineated from the active work areas through installation of environmental sensitive area fencing to prevent inadvertent access. The work area for utility line removal will be bound by environmental sensitive area fencing. A qualified plant ecologist shall oversee fencing placement.
- Work to remove the existing utility line for relocation within the Project site will proceed using the least impactful equipment necessary to minimize crushing, soil compaction, and erosion.

Mitigation Measure BIO-2: The general avoidance and minimization measures detailed in the EACCS and the associated Programmatic Biological Opinion (PBO) shall be implemented. Implementation of the General Minimization Measures listed in the PBO for the EACCS will further avoid impacts and are required for all EACCS-compliant projects. These avoidance and minimization measures include general measures that apply to all work, activity-specific measures designed to address anticipated effects of certain work activities or particular types of resources, and standard best management practices. Specifically, the Project would implement EACCS Measure GEN-1 through GEN-17, and PBO General Minimization Measure 1 through 19. These measures are listed in **Table 5.3-3**.

Table 5.3-3 EACCS Avoidance and Minimization Measures and General Measures

Applicable EACCS Avoidance and Minimization Measures	
EACCS Measure GEN-01	Employees and contractors performing construction activities will receive environmental sensitivity training. Training will include review of environmental laws and AMMs that must be followed by all personnel to reduce or avoid effects on covered species during construction activities.
EACCS Measure GEN-02	Environmental tailboard trainings will take place on an as-needed basis in the field. The environmental tailboard trainings will include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects on these species during construction activities. Directors, Managers, Superintendents, and the crew foremen and forewomen will be responsible for ensuring that crewmembers comply with the guidelines.
EACCS Measure GEN-03	Contracts with contractors, construction management firms, and subcontractors will obligate all contractors to comply with these AMMs.
EACCS Measure GEN-04	The following will not be allowed at or near work sites for covered activities: trash dumping, firearms, open fires (such as barbecues) not required by the activity, hunting, and pets (except for safety in remote locations).
EACCS Measure GEN-05	Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
EACCS Measure GEN-06	Off-road vehicle travel will be minimized.
EACCS Measure GEN-07	Vehicles will not exceed a speed limit of 15 mi per hour on unpaved roads within natural land-cover types, or during off-road travel.
EACCS Measure GEN-08	Vehicles or equipment will not be refueled within 100 ft of a wetland, stream, or other waterway unless a bermed and lined refueling area is constructed.
EACCS Measure GEN-09	Vehicles shall be washed only at approved areas. No washing of vehicles shall occur at job sites.
EACCS Measure GEN-10	To discourage the introduction and establishment of invasive plant species, seed mixtures/straw used within natural vegetation will be either rice straw or weed-free straw.
EACCS Measure GEN-11	Pipes, culverts, and similar materials greater than 4 inches in diameter will be stored so as to prevent covered wildlife species from using these as temporary refuges, and these materials will be inspected each morning for the presence of animals prior to being moved.

Applicable EACCS Avoidance and Minimization Measures	
EACCS Measure GEN-12	Erosion control measures will be implemented to reduce sedimentation in wetland habitat occupied by covered animal and plant species when activities are the source of potential erosion problems. Plastic monofilament netting (erosion control matting) or similar material containing netting shall not be used at the Project. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
EACCS Measure GEN-13	Stockpiling of material will occur such that direct effects on covered species are avoided. Stockpiling of material in riparian areas will occur outside of the top of bank, and preferably outside of the outer riparian dripline and will not exceed 30 days.
EACCS Measure GEN-14	Grading will be restricted to the minimum area necessary.
EACCS Measure GEN-15	Prior to ground disturbing activities in sensitive habitats, Project construction boundaries and access areas will be flagged and temporarily fenced during construction to reduce the potential for vehicles and equipment to stray into adjacent habitats.
EACCS Measure GEN-16	Significant earth-moving activities will not be conducted in riparian areas within 24 hours of predicted storms or after major storms (defined as 1 inch of rain or more).
EACCS Measure GEN-17	Trenches will be backfilled as soon as possible. Open trenches will be searched each day prior to construction to ensure no covered species are trapped. Earthen escape ramps will be installed at intervals prescribed by a qualified biologist.
Applicable PBO General Minimization Measures	
PBO General Minimization Measure 1	At least 15 days prior to any ground disturbing activities, the applicant will submit to the USFWS for review and approval the qualifications of the proposed biological monitor(s). A qualified biological monitor means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the listed species.
PBO General Minimization Measure 2	A USFWS-approved biological monitor will remain on-site during all construction activities in or adjacent to habitat for listed species. The USFWS-approved biological monitor(s) will be given the authority to stop any work that may result in the take of listed species. If the USFWS-approved biological monitor(s) exercises this authority, the USFWS will be notified by telephone and electronic mail within one working day. The USFWS-approved biological monitor will be the contact for any employee or contractor who might inadvertently kill or injure a listed species or anyone who finds a dead, injured, or entrapped individual. The USFWS-approved biological monitor will possess a working wireless/mobile phone whose number will be provided to the USFWS.

Applicable EACCS Avoidance and Minimization Measures	
PBO General Minimization Measure 3	Prior to construction, a construction employee education program will be conducted in reference to potential listed species on site. At minimum, the program will consist of a brief presentation by persons knowledgeable in endangered species biology and legislative protection (USFWS-approved biologist) to explain concerns to contractors, their employees, and agency personnel involved in the project. The program will include: a description of the species and their habitat needs; any reports of occurrences in the Project area; an explanation of the status of each listed species and their protection under the Act; and a list of measures being taken to reduce effects on the species during construction and implementation. Fact sheets conveying this information and an educational brochure containing color photographs of all listed species in the work area(s) will be prepared for distribution to the above-mentioned people and anyone else who may enter the project area. A list of employees who attend the training sessions will be maintained by the applicant to be made available for review by the USFWS upon request. Contractor training will be incorporated into construction contracts and will be a component of weekly project meetings.
PBO General Minimization Measure 4	Pre-construction surveys for listed species will be performed immediately prior to groundbreaking activities. Surveys will be conducted by USFWS-approved biologists. If at any point, construction activities cease for more than five consecutive days, additional pre-construction surveys will be conducted prior to the resumption of these actions.
PBO General Minimization Measure 5	To prevent the accidental entrapment of listed species during construction, all excavated holes or trenches deeper than 6 inches will be covered at the end of each work day with plywood or similar materials. Foundation trenches or larger excavations that cannot easily be covered will be ramped at the end of the work day to allow trapped animals an escape method. Prior to the filling of such holes, these areas will be thoroughly inspected for listed species by USFWS-approved biologists. In the event of a trapped animal is observed, construction will cease until the individual has been relocated to an appropriate location.
PBO General Minimization Measure 6	Translocation will be approved on a project specific basis. The applicant will prepare a listed species translocation plan for the Project to be reviewed and approved by the USFWS prior to Project implementation. The plan will include trapping and translocation methods, translocation site, and post translocation monitoring.
PBO General Minimization Measure 7	Only USFWS-approved biologists will conduct surveys and move listed species.
PBO General Minimization Measure 8	All trash and debris within the work area will be placed in containers with secure lids before the end of each workday in order to reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left on-site. Containers will be emptied as necessary to prevent trash overflow onto the site and all rubbish will be disposed of at an appropriate off-site location.
PBO General Minimization Measure 9	All vegetation which obscures the observation of wildlife movement within the affected areas containing or immediately adjacent to aquatic habitats will be completely removed by hand just prior to the initiation of grading to remove cover that might be used by listed species. The USFWS-approved biologist will survey these areas immediately prior to vegetation removal to find, capture, and relocate any observed listed species, as approved by the USFWS

Applicable EACCS Avoidance and Minimization Measures	
PBO General Minimization Measure 10	All construction activities must cease one half hour before sunset and should not begin prior to one half hour after sunrise. There will be no nighttime construction.
PBO General Minimization Measure 11	Grading and construction will be limited to the dry season, typically May-October.
PBO General Minimization Measure 12	BMPs will be used to minimize erosion and effects on water quality and effects on aquatic habitat. If necessary, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared.
PBO General Minimization Measure 13	The applicant will ensure a readily available copy of this PBO is maintained by the construction foreman/manager on the Project site whenever earthmoving and/or construction is taking place. The name and telephone number of the construction foreman/manager will be provided to the USFWS prior to groundbreaking.
PBO General Minimization Measure 14	The construction area shall be delineated with high visibility temporary fencing at least 4 ft in height, flagging, or other barrier to prevent encroachment of construction personnel and equipment outside of the construction area. Such fencing shall be inspected and maintained daily until completion of the Project. The fencing will be removed only when all construction equipment is removed from the site.
PBO General Minimization Measure 15	Silt fencing or wildlife exclusion fencing will be used to prevent listed species from entering the project area. Exclusion fencing will be at least 3 ft high and the lower 6 inches of the fence will be buried in the ground to prevent animals from crawling under. The remaining 2.5 ft will be left above ground to serve as a barrier for animals moving on the ground surface. The fence will be pulled taut at each support to prevent folds or snags. Fencing shall be installed and maintained in good condition during all construction activities. Such fencing shall be inspected and maintained daily until completion of the Project. The fencing will be removed only when all construction equipment is removed from the site.
PBO General Minimization Measure 16	A USFWS-approved biologist shall ensure that the spread or introduction of invasive exotic plant species shall be avoided to the maximum extent possible. When practicable, invasive exotic plants in the Project areas shall be removed.
PBO General Minimization Measure 17	Project sites shall be revegetated with an appropriate assemblage of native riparian wetland and upland vegetation suitable for the area. A species list and restoration and monitoring plan shall be included with the Project proposal for review and approval by the USFWS and the USACE. Such a plan must include, but not be limited to, location of the restoration, species to be used, restoration techniques, time of year the work will be done, identifiable success criteria for completion, and remedial actions if the success criteria are not achieved.

Applicable EACCS Avoidance and Minimization Measures	
PBO General Minimization Measure 18	If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 5 millimeters. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.
PBO General Minimization Measure 19	A USFWS-approved biologist shall permanently remove, from within the project area, any individuals of exotic species, such as bullfrogs [Lithobates catesbeianus], crayfish [Pacifastacus leniusculus and Procambarus clarkii], and centrarchid fishes, to the maximum extent possible. The applicant shall have the responsibility to ensure that their activities are in compliance with the California Fish and Game Code.

Mitigation Measure BIO-3: To track recovery of temporarily impacted special-status plant populations, the actual area of impacts will be mapped and monitored for at least three years by a qualified plant ecologist. Prior to Project construction, an area to the south, outside the construction footprint and of a similar size and similar density of Congdon's tarplant to the area to be impacted, will be identified and used as a reference area. Objectives during the monitoring will include removing any weed populations that may have become introduced due to disturbance, and to encourage grazing that benefits Congdon's tarplant. By year three, if the Congdon's tarplant density within the impacted area is not at least 50 percent of the reference area, or if there is more than 5 percent cover of Cal-Invasive Plant Council (IPC) high or moderate ecological impact invasive plants within the recovery area (not including non-native grasses), the portion of the population impacted by the Project will be considered permanently impacted and the Project will then be required to mitigate for the impacts as per the EACCS, which would require preservation in perpetuity and management per EACCS guidelines of a similar-sized area and number of plants at a 5:1 ratio (number of new plant individuals:number of impacted plant individuals).

California Red-legged Frog

Impact BIO-1.2: The Project could result in the direct loss and indirect disturbance of California red-legged frogs and their habitat. **(Less than Significant with Mitigation)**

Construction: Temporary Direct Impacts

Construction access and staging areas could temporarily impact 37.12 acres of potential California red-legged frog habitat, including 22.52 acres of California red-legged frog critical habitat. These areas could be subject to grading but would not be paved or otherwise permanently altered, and could provide habitat of similar quality to existing conditions shortly (i.e., in less than one year) after the completion of construction.

The Project could impact individual California red-legged frogs as a result of:

- Direct mortality during construction as a result of trampling by construction personnel or equipment
- Increased mortality due to roadkill caused by the construction and vehicular use in and around the vicinity of the Project
- Direct mortality from the collapse of underground burrows, resulting from soil compaction
- Direct mortality or loss of suitable habitat resulting from the loss of dispersal habitat and refugia.

No known or potential California red-legged frog breeding habitat would be directly or indirectly impacted by Project construction, as no breeding habitat is present in or downslope from the BSA. Nevertheless, in the event that California red-legged frog individuals were to attempt breeding in pools in the BSA, construction could also potentially impact these species through mortality of eggs or larvae if dewatering of pools was not avoided.

Operation: Permanent Direct Impacts

Approximately 22.70 acres of potential California red-legged frog foraging, dispersal and upland refugial habitat would be permanently lost due to the construction of pavement and other hardscape in areas that currently provide natural habitat that may be used by the California red-legged frog. Of this permanent impact area, approximately 11.44 acres is considered California red-legged frog critical habitat.

Operation: Permanent Indirect Impacts

Up to 133.47 acres of potential California red-legged frog foraging, dispersal, and upland refugial habitat south of the Project may be indirectly but permanently impacted as a result of being disconnected from existing breeding sites north of the Project. Although the habitat in these areas would continue to be ostensibly suitable for use by California red-legged frogs following Project implementation, individual frogs associated with breeding habitat north of the Project site would no longer be able to use the habitat between the Project site and I-580. This represents an effective loss of habitat. In the unincorporated County portion of the Project, the use of a free-span bridge over Cottonwood Creek would allow California red-legged frogs to continue to move back and forth under the new road from their aquatic habitat to the north.

Given the above, the Project could impact California red-legged frog. However, implementation of **Mitigation Measures BIO-2**, **BIO-4**, **BIO-5**, and **BIO-6** would reduce impacts to a less-than-significant level. These measures would avoid and minimize impacts to the species through pre-construction survey, an on-site monitor at critical points during construction to ensure the species is not present or harmed, and other construction safety measures to avoid harm. Additionally, the mitigation measures provide compensatory mitigation for habitat loss, consistent with the EACCS, to ensure suitable habitat continues to be available for this species.

Mitigation for Impact BIO-1.2

Mitigation Measure BIO-4: The Project will incorporate the following species-specific avoidance and minimization prescribed by the EACCS Measure AMPH-2:

- A qualified biologist will conduct pre-construction surveys prior to activities. If individuals are found, work will not begin until they are moved out of the construction zone to a USFWS/CDFW approved relocation site.
- A USFWS/CDFW-approved biologist shall be present for initial ground disturbing activities.

- If the work site is within the typical dispersal distance of potential breeding habitat, barrier fencing will be constructed around the worksite to prevent amphibians from entering the work area. Contact USFWS/CDFW for latest research on this distance for species of interest. Barrier fencing will be removed within 72 hours of completion of work. The Project site is known to be within dispersal distance of potential breeding habitat for California red-legged frog and California tiger salamander, and therefore barrier fencing consisting of silt fence and orange construction zone fencing will be installed on the northern and southern boundaries of the Project site where construction activities border grassland habitat. The barrier fencing will be at least 3 feet high and the lower 6 inches of the fence will be buried in the ground to prevent animals from crawling under. The remaining 2.5 feet will be left above ground to serve as a barrier for animals moving on the ground surface.
- No monofilament plastic will be used for erosion control.
- Construction personnel will inspect open trenches in the morning and evening for trapped amphibians.
- A qualified biologist possessing a valid FESA Section 10(a)(1)(A) permit or USFWS-approved under an active biological opinion, will be contracted to trap and to move amphibians to nearby suitable habitat if amphibians are found inside a fenced area. No trapping, such as the use of upland traplines for California red-legged frogs or California tiger salamanders, is proposed for this Project. However, a biologist approved by the USFWS under the Project's Biological Opinion and by the CDFW under the Project's Incidental Take Permit will survey for and relocate any individuals found within the impact area. The applicant will prepare a relocation plan for the Project to be reviewed and approved by the USFWS and CDFW prior to the onset of construction.
- Work within suitable habitat will be avoided from 15 October (or the first measurable fall rain of 1 inch or greater) to 1 May.

Mitigation Measure BIO-5: Compensatory mitigation for the permanent direct and indirect loss of California red-legged frog and California tiger salamander habitat would be required in accordance with the measures outlined in Tables 3-7 and 3-8 of the EACCS. Mitigation will take the form of purchase of mitigation credits from a mitigation bank or Project-specific mitigation, or other mitigation plan as approved by the USFWS and CDFW in the Project's permits. The ratio of mitigation to impact varies with the location of the proposed mitigation, and would be 2.5:1 at minimum, but may be as high as 4:1 (acreage of new habitat:acreage of impacted habitat).

California Tiger Salamander

Impact BIO-1.3: Project construction could result in the direct loss and indirect disturbance of California tiger salamanders and their habitat. **(Less than Significant with Mitigation)**

Potential impacts to California tiger salamander are identical to those described above under Impact BIO-1.2 for California red-legged frog. The habitat areas identified under Impact BIO-1.2 are also suitable habitat for California tiger salamander, and therefore the temporary direct impacts, permanent direct impacts, and permanent indirect impacts are equivalent for both species.

Given the above, the Project could impact California tiger salamander. However, **Mitigation Measures BIO-2**, **BIO-4**, and **BIO-5** (discussed above) would reduce impacts to a less-than-significant level. These measures would avoid and minimize impacts to the species through pre-construction survey, an on-site monitor at critical points during construction to ensure the species is not present or harmed, and other construction safety measures to avoid harm. Additionally, the mitigation measures provide compensatory mitigation for habitat loss, consistent with the EACCS, to ensure suitable habitat continues to be available for this species.

Mitigation for Impact BIO-1.3

Mitigation Measures BIO-2, BIO-4, and **BIO-5** (discussed above)

Tricolored Blackbird

Impact BIO-1.4: The Project would result in permanent and temporary impacts to foraging habitat for tricolored blackbird. **(Less than Significant with Mitigation)**

The Project would result in the permanent loss of 22.70 acres of potential tricolored blackbird foraging habitat due to the construction of pavement and other hardscape. The Project would also result in temporary impacts to 54.25 acres of potential tricolored blackbird foraging habitat that would be used for construction access, staging areas, and grading activities. Although the Project would result in permanent and temporary impacts to foraging habitat for this species, such foraging habitat is regionally abundant and does not limit tricolored blackbird distribution or populations. Therefore, no compensatory mitigation for habitat impacts is necessary.

Tricolored blackbird is not expected to nest in the BSA under current conditions. However, because the hydrology on site appears to have undergone several changes in recent years, there is some potential for dense stands of cattails to regenerate within the construction footprint. If nesting habitat were to improve prior to Project initiation, there is some potential for the loss of suitable tricolored blackbird nesting habitat, loss of active nests, and/or disturbance of active nests, possibly causing the abandonment of eggs or young, as a result of construction activity. This represents a potentially significant impact, reduced to a less-than-significant level through the implementation of **Mitigation Measure BIO-5** and **BIO-6**. These measures ensure adequate compensatory mitigation for habitat loss or degradation, along with pre-construction surveys and seasonal construction protocols to minimize disturbance and harm.

Mitigation for Impact BIO-1.4

Mitigation Measure BIO-6: If dense stands of cattails regenerate within the proposed construction footprint prior to Project construction, the Project shall implement the following measures to avoid impacts to tricolored blackbird nesting colonies:

- If work is initiated within the nesting season (i.e., February 1 to August 31), then a preconstruction survey for an active nesting colony of tricolored blackbirds shall be conducted within all perennial marsh and seasonal wetland habitats on and within 250 feet of the construction footprint.
- (EACCS Measure BIRD-3): If an active nest colony is identified within 250 feet of the construction footprint, work within 250 feet of the colony will be conducted outside of the nesting season (March 15 to September 1).

Western Pond Turtle

Impact BIO-1.5: Project construction may result in mortality to individual western pond turtles and their eggs. **(Less than Significant with Mitigation)**

The Project has a low probability to impact individual western pond turtles. If western pond turtles are present within the construction footprint when construction occurs, there is some potential for turtles or eggs to be crushed by personnel or equipment. However, **Mitigation Measures BIO-2** and **BIO-4** and compliance with standard NPDES and CDFW permit conditions would reduce impacts to a less-than-significant level. These measures would avoid and minimize impacts to the species through pre-construction survey, an on-site monitor at critical points during construction to ensure the species is not present or harmed, and other construction safety measures to avoid harm.

Mitigation for Impact BIO-1.5

Mitigation Measures BIO-2 and **BIO-4** (discussed above)

San Joaquin Kit Fox

Impact BIO-1.6: Project construction may result in mortality to individual San Joaquin kit foxes, should they be present within the construction footprint. **(Less than Significant with Mitigation)**

Because California annual grasslands in the BSA offer ostensibly suitable San Joaquin kit fox foraging habitat, and because there is a recorded occurrence of San Joaquin kit fox near the Project site, individual kit foxes could appear within the construction footprint. If present, San Joaquin kit foxes would likely occur only as rare and irregular transients, and are not expected to den on-site due to existing high levels of human disturbance. If an individual San Joaquin kit fox were to be present in the site when construction occurs, there is some potential for mortality from a vehicle or equipment strike. This represents a potentially significant impact, reduced to a less-than-significant

level through implementation of **Mitigation Measures BIO-2** and **BIO-7**. These measures require implementation of EACCS measures and BMPs, along with a pre-construction survey, construction exclusion zones, and evaluation of potential dens by a qualified biologist to ensure the species is not harmed.

Mitigation for Impact BIO-1.6

Mitigation Measure BIO-7: A qualified biologist shall conduct a preconstruction survey for San Joaquin kit fox and their dens prior to the start of construction activities. In the event that the species is detected during the preconstruction survey, avoidance of impacts to occupied kit fox dens will be implemented per the *Standardized Recommendations for Protection of The San Joaquin Kit Fox Prior To Or During Ground Disturbance* (USFWS 1999) and EACCS Measure MAMM-1 (outlined below):

- If potential dens are present, their disturbance and destruction will be avoided.
- If potential dens are located within the construction footprint and cannot be avoided during construction, a qualified biologist will determine if the dens are occupied or were recently occupied using methodology coordinated with the USFWS and CDFW. If unoccupied, the qualified biologist will collapse these dens by hand in accordance with USFWS procedures (USFWS 1999).
- Exclusion zones will be implemented following USFWS procedures (USFWS 1999) or the latest USFWS procedures available at the time. The radius of these zones will follow current standards or the following standards listed in the PBO for the EACCS:
    - Potential Den – A total of 4-5 flagged stakes will be placed 50 feet from the den entrance to identify the den location;
    - Known Den – Orange construction barrier fencing will be installed between the construction work area and the known den site at a minimum distance of 100 feet from the den. The fencing will be maintained until all construction-related disturbances have been terminated. At that time, all fencing will be removed to avoid attracting subsequent attention to the den;
    - Natal or Pupping Den – The USFWS will be contacted immediately if a natal or pupping den is discovered at or within 200 feet from the boundary of the construction area.
- Pipes will be capped and trenches will contain exit ramps to avoid direct mortality while construction areas are active.

Burrowing Owl

Impact BIO-1.7: Project construction could result in the direct loss and indirect disturbance of burrowing owls and their habitat. **(Less than Significant with Mitigation)**

The BSA contains suitable burrowing owl breeding and foraging habitat, particularly in the upland areas, California annual grasslands, and portions of abandoned developed/landscaped habitats. The Project could permanently impact 22.70 acres of potential burrowing owl habitat due to the installation of pavement and other hardscape. Project construction could temporarily impact 54.25 acres of potential burrowing owl habitat due to construction vehicles accessing the area, construction staging, and grading. Areas used for construction access and staging during construction would be subject to grading but would not be paved or otherwise permanently altered. These areas are expected to provide habitat of similar quality to existing conditions shortly (i.e., in less than one year) after the completion of construction. Although there are no recent burrowing owl breeding records for the Project site, the construction footprint could serve as breeding habitat for these species, and these areas may be permanently or temporarily impacted as described above. If present, the number of burrowing owls that could potentially occur in the construction footprint is low due to the lack of burrows observed on the majority of the BSA. However, individuals could be present in burrows within and nearby the construction footprint. The Project could impact individual burrowing owls as a result of the following:

- Direct mortality during construction as a result of collision with by construction vehicles or equipment
- Increased mortality due to roadkill caused by the construction and vehicular use in and around the vicinity of the Project
- Direct mortality from the collapse of underground burrows, resulting from soil compaction
- Direct mortality or loss of suitable habitat resulting from the loss of breeding, foraging, or dispersal habitat
- Loss of eggs (in the case of burrowing owls) or young (in the case of either species) as a result of abandonment of occupied nests/dens due to construction-related disturbance

The Project could result in significant impacts to burrowing owl, reduced to a less-than-significant impact through implementation of **Mitigation Measures BIO-2**, **BIO-5**, **BIO-8**, and **BIO-9**. These measures require implementation of EACCS measures and BMPs, along with a pre-construction survey, construction exclusion zones, and seasonal work windows for areas near any active nests to ensure the species is not harmed. Additionally, these measures include compensatory mitigation for habitat loss, consistent with the EACCS, to ensure suitable habitat continues to be available for this species.

Mitigation for Impact BIO-1.7

Mitigation Measures BIO-2 and **BIO-5** (discussed above)

Mitigation Measure BIO-8: A qualified biologist shall conduct preconstruction surveys for nesting burrowing owls prior to construction. As feasible, all suitable habitat within 0.5 mile of the Project site shall be surveyed for nesting burrowing owls. The survey should be conducted during the burrowing owl's nesting season, defined by the EACCS as March 15 to September 1. This survey shall consist of two or more site visits, with the biologist examining all potential burrows within 0.5 mile, as access permits, for signs of nesting burrowing owls (i.e., owls, pellets, feathers, and/or whitewash). Should these surveys identify burrowing owls on or near the BSA, avoidance of disturbance to the burrow will be conducted per EACCS Measure BIRD-2, outlined below:

- If an active burrowing owl nest is identified near a proposed work area, work will be conducted outside of the nesting season (March 15 to September 1).
- If an active nest is identified near a proposed work area and work cannot be conducted outside of the nesting season, a qualified biologist will establish a no-activity zone. The no activity zone will be large enough to avoid nest abandonment and will at minimum be 250-foot radius from the nest.
- If burrowing owls are present within the construction footprint during the non-breeding period, a qualified biologist will establish a no-activity zone of at least 150 feet.
- If an effective no-activity zone cannot be established in either case, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, and the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls.

Mitigation Measure BIO-9: The EACCS identifies burrowing owl nesting habitat as suitable habitat within 0.5 mile of a documented nest occurrence during the previous 3 years, and it recommends compensatory mitigation in the event of any impacts to such habitat. In the event that burrowing owls are found to be nesting on or within 0.5 mile of the Project site during preconstruction surveys, or if owls need to be evicted from burrows (which can only occur when they are not actively nesting) to implement the Project, compensatory mitigation will be necessary to mitigate for impacts on occupied burrowing owl habitat. If the California red-legged frog/California tiger salamander habitat mitigation provides suitable habitat for burrowing owls as well, then no additional mitigation for impacts to burrowing owls would be necessary. Otherwise, additional habitat mitigation will be necessary, in the form of purchase of mitigation credits from a mitigation bank or Project-

specific mitigation in an area that supports such habitat. The EACCS prescribes mitigation ratios of 3:1 to 3.5:1 (acreage of new habitat:acreage of impacted habitat), depending on the location of the mitigation site.

American Badger

Impact BIO-1.8: The Project could result in the direct loss and indirect disturbance of American badgers and their habitat, should they be present within the construction footprint. **(Less than Significant with Mitigation)**

The BSA contains suitable American badger denning and foraging habitat, particularly in the grassland habitats. Should badgers be present within the BSA, they would most likely represent dispersing or foraging individuals; badgers are unlikely to den on-site due to the surrounding high levels of human disturbance. Therefore, the Project could result in the direct loss and indirect disturbance of American badgers and their habitat. Impacts to American badger individuals and habitat would be identical to the impacts outlined for the burrowing owl above. Therefore, the Project could result in significant impacts to American badger, reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-2** and **BIO-10**. These measures require implementation of EACCS measures and BMPs along with a pre-construction survey to ensure the species is not harmed.

Mitigation for Impact BIO-1.8

Mitigation Measure BIO-2 (discussed above)

Mitigation Measure BIO-10: A qualified biologist shall conduct preconstruction surveys for denning American badgers prior to construction. As feasible, all suitable habitat within 0.5 mile of the Project site shall be surveyed for American badgers. The survey will be conducted for the area in which the qualified biologist can access. This survey can be conducted concurrently with the burrowing owl survey outlined in **Mitigation Measure BIO-8**. This survey shall consist of two or more site visits, with the biologist examining all potential burrows within 0.5 mile, as access permits, for American badger dens. Should these surveys identify American badgers on or near the BSA, avoidance of disturbance to the den will be conducted per EACCS Measure MAMM-1 outlined in **Mitigation Measure BIO-7.**

Common and Special-status Bats

Impact BIO-1.9: Project construction would result in the loss of foraging habitat and prey habitat for bats, and could temporarily alter foraging patterns in the immediate vicinity. Additionally, Project construction could indirectly result in mortality of bats and their young, if present within the construction footprint. **(Less than Significant with Mitigation)**

Impacts on natural habitats described above would result in the loss of some common and special-status bat foraging habitat, loss of areas that provide habitat for special-status bat prey, and temporary impacts on foraging individuals through the alteration of foraging patterns. Altered foraging patterns could include avoidance of work areas because of increased noise and activity levels during Project activities, among other changes in behavior. However, because the Project would not result in substantial changes to the availability of foraging habitat in the vicinity, the Project is not expected to have a substantial long-term impact on foraging habitat or prey availability.

The Project would result in the removal of a small amount of potential roosting sites for bats, such as small stands of mixed riparian woodland habitat or small abandoned buildings such as sheds. Construction activities near potential roosting habitat could flush a small number of roosting bats during daylight hours, which could increase the potential for predation by predatory birds. However, the Project is expected to result in impacts to few such bats, if any. If common species of bats are displaced, sufficient alternative night-roosting habitat is present in the construction footprint. Therefore, displacement during construction would not result in substantial loss of individuals from local and regional populations.

Project-related disturbance in close proximity to a maternity roost could potentially cause females to abandon their young. Loss of a small to moderate sized maternity roost of common bats would not result in a substantial impact on these species as a whole. The loss of even a small maternity roost of pallid bats or Townsend's big-eared bats could result in population-level impacts to these species given their regional rarity. This represents a potentially significant impact, reduced to a less-than-significant impact with implementation of **Mitigation Measures BIO-2, BIO-11,** and **BIO-12.** These measures require implementation of EACCS measures and BMPs, a pre-construction survey, construction exclusion zones, seasonal work windows for areas near any active roosts, and protocols for removing roost to ensure bats are not harmed. Additionally, these measures include protocols for the replacement of roost structures in the event that a maternity roost is lost as a result of the Project.

Mitigation for Impact BIO-1.9

> **Mitigation Measure BIO-2** (discussed above)
>
> **Mitigation Measure BIO-11:** A qualified bat biologist will conduct a pre-construction/pre-demolition survey for roosting bats within 15 days prior to the commencement of construction activities within 400 feet of trees or buildings providing potential roosting habitat. The survey will focus on detecting bats that may be day-roosting in trees within or immediately adjacent to (i.e., within 100 feet of) the impact areas. If suitable roost sites are

found and a visual survey is not adequate to determine presence or absence of bats, acoustical equipment will be used to determine occupancy. If no evidence of bat roosts is found, any buildings or trees that contain potential roosting sites and are proposed for removal will be removed within 15 days following completion of the survey.

If a day roost is found during the maternity season (1 April until the young are flying, typically by 31 August) within 400 feet of the impact areas, a qualified bat biologist (in consultation with the CDFW) will determine the width of a buffer that will be established around the roost. No construction-related activity shall occur within the buffer during the maternity season. Typical buffers recommended between intense construction activity and pallid bat roosts are: 90 feet for motor vehicles and foot traffic, 120 feet for heavy equipment, 150 feet for trenching, 250 feet for idling equipment or generators, 250 feet for shielded lighting, and 400 feet for unshielded lighting. No tree or structure containing a maternity roost will be removed or otherwise physically disturbed during the maternity season.

Outside the maternity season, a day roost may be removed after individual bats are safely evicted under the direction of a qualified bat biologist. Eviction will occur between 1 September and 31 March, but will not occur during long periods of inclement or cold weather (as determined by the bat biologist) when prey are not available or bats are in torpor. If feasible, one-way doors will be used to evict bats. If use of a one-way door is not feasible, or the exact location of the roost entrance is not known, the roosts that need to be removed shall first be disturbed by the bat biologist. Such disturbance will occur at dusk to allow bats to escape during the darker hours. These buildings or trees shall then be removed the following day. All of these activities will be performed under the supervision of the bat biologist.

Mitigation Measure BIO-12: Compensatory mitigation for impacts on active bat roosts would not be warranted unless a maternity roost of pallid bats or Townsend's big-eared bats will be lost. In this instance, the provision of one or more alternate roost structures would be appropriate to reduce impacts on special-status bat species. If a pallid bat or Townsend's big-eared bat day roost is located within a tree or building to be removed, an alternative bat roost structure will be provided by the City of Dublin and its partners. The design and placement of this structure will be determined by a bat biologist, in consultation with the CDFW, based on the location of the original roost and the habitat conditions in the vicinity. The roost structure will be built to specifications as determined by a bat biologist and CDFW, or it may be purchased from an appropriate vendor. The structure will be placed as close to the impacted roost site as feasible. This bat structure will be erected at least one month prior to removal of the original roost structure. A bat biologist will monitor this structure during the breeding season for up to two years following completion of the Project, or until it is found to be occupied by bats (whichever occurs first), to provide information for future projects regarding the effectiveness of such structures in minimizing impacts to bats.

Special-status Nesting Birds

Impact BIO-1.10: Project construction could result in take of a special-status individual bird, egg, or nest, should an individual be foraging or nesting within the construction footprint during construction. **(Less than Significant with Mitigation)**

Suitable habitat is present for the white-tailed kite, loggerhead shrike, and grasshopper sparrow in many areas surrounding the BSA, particularly in the hills north of the BSA. The construction footprint represents a very small fraction of the total breeding habitat available to these species. Furthermore, no more than one or two nests of any of these species are likely to be impacted, as described in **Table 5.3-1**. Therefore, the Project is not expected to substantially reduce these species' populations or habitats and any Project impacts would be minimal.

The golden eagle and the yellow warbler are expected to occur only as occasional foraging birds during the nonbreeding season and are not expected to nest in the BSA. Impacts on the non-developed habitats in the BSA would result in the loss of some foraging habitat and prey production areas as well as a temporary impact on foraging individuals through the alteration of foraging patterns. However, because the Project would not result in substantial changes to the availability of foraging habitat in the area, the Project is not expected to have a substantial long-term impact on foraging habitat or prey availability for golden eagle or yellow warbler.

However, the Project could result in direct take of a special-status individual bird, egg, or nest, should an individual be foraging or nesting within the construction footprint during construction. This represents a potentially significant impact, reduced to a less-than-significant level with application of **Mitigation Measures BIO-2** and **BIO-13**. These measures require implementation of EACCS measures and BMPs, pre-construction surveys, work exclusion areas to protect active nests, and seasonal work windows to avoid harm to nesting birds.

Mitigation for Impact BIO-1.10

Mitigation Measure BIO-2 (discussed above)

Mitigation Measure BIO-13: Project implementation shall include the following measures to comply with the MBTA and California Fish and Game Code and avoid death or injury of special-status birds or their active nests, eggs, or young.

- *Avoidance of the Nesting Bird Season.* If feasible, Project activities will be scheduled to avoid the avian nesting season. If such activities are scheduled to take place outside the nesting season, all impacts on nesting birds, including raptors, protected under the MBTA and California Fish and Game Code, would be avoided. The nesting season for most birds in Alameda County typically extends from February 1 through August 31, although in most years, a majority of birds have finished nesting by August 1.
- *Vegetation Removal during the Non-Nesting Season.* If Project activities will not be initiated until after the start of the nesting season, potential nesting substrate (e.g., bushes, trees, grasses, and other vegetation) that is scheduled to be removed may be

removed prior to the start of the nesting season (e.g., prior to 1 February) to reduce the potential for initiation of nests. If it is not feasible to schedule vegetation removal during the nonbreeding season, or where vegetation cannot be removed (e.g., in areas immediately adjacent to the site), then pre-construction surveys for nesting birds will be conducted as described below. Sensitive and/or regulated wetland vegetation would not be removed prior to construction, if feasible.

- *Pre-construction/Pre-disturbance Surveys for Nesting Birds.* If it is not possible to schedule Project activities between September 1 and February 1, then a qualified biologist will conduct pre-construction surveys for nesting birds to ensure that no nests will be disturbed during Project implementation. These surveys will be conducted no more than one week prior to the initiation of Project activities. During this survey, a qualified biologist will inspect all potential nesting habitats (e.g., trees, shrubs, grasslands, and structures) within 300 feet of impact areas for raptor nests and within 100 feet of impact areas for nests of non-raptors. Surveys for burrowing owls and nesting golden eagles will extend out to 0.5 mile from the Project site (to the extent that such areas are accessible).

- *Buffers around Active Nests.* If an active nest (i.e., a nest with eggs or young, or any completed raptor nest attended by adults) is found sufficiently close to the construction footprint to be disturbed by these activities, the biologist, in consultation with CDFW, will determine the extent of a disturbance-free buffer zone to be established around the nest to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during Project implementation. Typical buffers are 0.25 mile (or 0.5-mile line-of-sight) for golden eagles, 250 feet for burrowing owls, 300 feet for other raptors, and 50-100 feet for non-raptors. Because the majority of the site is already subject to disturbance by vehicles and pedestrians, activities that will be prohibited from occurring within the buffer zone around a nest will be determined on a case-by-case basis by a qualified biologist. In general, activities prohibited within such a buffer while a nest is active will be limited to new construction-related activities (i.e., activities that were not ongoing when the nest was constructed) involving significantly greater noise, human presence, or vibrations than were present prior to nest initiation.

- *Nest Deterrence.* If necessary to avoid impacts to active nests, nest starts may be removed on a regular basis (e.g., every second or third day), starting in late January or early February to prevent active nests from becoming established.

Migratory Birds

Impact BIO-1.11: Project construction could result in impacts to migratory bird species, their eggs, or nests, should an individual be foraging or nesting within the construction footprint during construction. **(Less than Significant with Mitigation)**

The MBTA and California Fish and Game Code protect migratory birds, including their eggs, nests, and young. Several species of birds protected under the MBTA and the California Fish and Game

Code may nest within or adjacent to the BSA. These include the red-winged blackbird (*Agelaius phoeniceus*), western meadowlark (*Sturnella neglecta*), mourning dove (*Zenaida macroura)*, Say's phoebe (*Sayornis saya*), song sparrow (*Melospiza melodia*), black phoebe (*Sayornis nigricans*), Bewick's wren (*Thryomanes bewickii*), Anna's hummingbird (*Calypte anna*), red-tailed hawk (*Buteo jamaicensis*), and house finch (*Haemorhous mexicanus*). The Project would impact a relatively small amount of potential nesting habitat for migratory birds and would have no measurable impact on regional populations of these species because the impacted habitat represents such a small proportion of regionally available habitat. The Project could potentially impact migratory bird species protected by the MBTA and California Fish and Game Code should an individual be foraging or nesting within the construction footprint site during construction. This represents a potentially significant impact, reduced to a less-than-significant level with application of **Mitigation Measures BIO-2** and **BIO-13**, described above. These measures require implementation of EACCS measures and BMPs, pre-construction surveys, work exclusion areas to protect active nests, and seasonal work windows to avoid harm to migratory birds.

Mitigation for Impact BIO-1.11

Mitigation Measures BIO-2 and **BIO-13** (discussed above)

C. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS

Impact BIO-2: The Project may adversely affect riparian habitat and other sensitive natural communities within the construction footprint, through temporary disturbance during construction and permanent loss of natural areas through conversion to a multi-modal roadway. **(Less than Significant with Mitigation)**

The Project would permanently impact to 0.70 acres of riparian grassland through culverting of streams, construction of the Cottonwood Creek bridge abutments and piers, and grading associated with bridge supports. Project construction would temporary impact 2.15 acres of riparian grassland due to construction access and work within top of bank of the ephemeral and perennial streams. Culverting and installation of structures would cause the Project-related loss of small amounts of this habitat type, while grading would simply permanently alter topography within these areas. Access has the potential to remove vegetation, cause compaction or erosion of soils, and may also include temporary grading that is later restored to pre-Project contours.

Project work would result in 0.11 acres of direct permanent impacts to riparian woodland habitat due to construction of the roadway and removal of approximately 8 red willow trees, and 0.05 acres of temporary impacts related to potential trimming of a large valley oak tree in the Cottonwood Creek corridor to construct the bridge. Riparian woodland trees along Cottonwood Creek were carefully avoided in the bridge design.

The Project would comply with the NPDES and General Construction permit to prevent increases in peak flow, erosion, or reduction in water quality for downslope waters, which would prevent stream downcutting, riparian bank erosion, or other downstream impacts. All impacts to riparian

habitats have been designed to be the minimum necessary. Work areas in riparian areas would be restricted to areas immediately adjacent to permanent impact locations. Access within the outer banks of Cottonwood Creek would be minimized and would not utilize long access paths from top-of-bank to the floodplain below.

However, the Project could still impact riparian habitat. This represents a potentially significant impact, reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-5** and **BIO-14** through **BIO-16.** These measures include compensatory mitigation for habitat loss, consistent with the EACCS, to ensure suitable habitat continues to be available for protected species. The mitigation provides construction controls to delineate and avoid riparian areas, requires implementation of EACCS avoidance and minimization measures in riparian areas, and requires a tree protection zone for the valley oak tree north of the proposed bridge, along with other construction measures to protect riparian areas. Finally, in-kind mitigation for loss of riparian areas will be required consistent with the EACCS.

Mitigation for Impact BIO-2

Mitigation Measures BIO-5 (discussed above)

Mitigation Measure BIO-14: Project implementation shall include the following measures to reduce riparian habitat impacts:

- All riparian areas and riparian trees to be preserved will be clearly depicted on final Project plans. Areas to be avoided shall be indicated and protected at the site using orange sensitive area fencing to ensure inadvertent impacts do not occur.
- No equipment will be staged or refueled in the riparian areas along Cottonwood Creek.
- All appropriate AMMs listed in the EACCS that would apply to and protect these riparian habitats will be enacted.

Mitigation Measure BIO-15: The valley oak tree to be avoided during implementation of the Project will be protected with a tree protection zone, developed under the consultation of a qualified, International Society of Arborists-certified arborist. This tree protection zone may be larger than the drip line of the tree, as determined by the qualified arborist, and will be delineated with orange construction fencing. No fill placement, equipment access, or materials stockpiling may occur within the tree protection zone, unless approved by the qualified arborist (for example for crown trimming, if needed).

Mitigation Measure BIO-16: The permanent loss of riparian habitat types shall be mitigated as described in the EACCS. Mitigation will be provided via preservation, enhancement, and management as per EACCS guidelines. Because all riparian habitats in the construction footprint provide habitat for focal species, the mitigation ratio for the impacts will be at least 2.5:1 (acreage of new habitat: acreage of impacted habitat). Because the wetland and stream habitats all provide dispersal and foraging habitat for California red-

legged frog and California tiger salamander, the final mitigation ratio must be as high as the determined EACCS requirements for focal species. Mitigation ratios will vary based on the location and quality of the mitigation lands, which have not been selected yet. Mitigation must be in-kind for mixed riparian woodland impacts but riparian grassland impacts may be mitigated with either grassy or wooded riparian habitat.

Temporary impacts to riparian habitat shall be restored in place at a 1:1 ratio through re-establishment of original contours along banks, decompaction of compacted soils where necessary, and seeding with a native seed mix developed by a qualified restoration ecologist and containing species such as alkali barley (*Hordeum depressum*), meadow barley (*Hordeum brachyantherum),* purple needlegrass (*Stipa purpurea*), and/or other native grass and forb species that occur in the Project vicinity. Temporary impact areas will be monitored for 2 years and the criteria for success will be 75 percent vegetation cover or more compared to pre-Project conditions and no more than 5 percent cover of Cal-IPC-rated moderate and high impact weed species (excluding Cal-IPC-rated annual grasses).

D. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marshes, vernal pools, etc.) through direct removal, filling, hydrological interruption, or other means

Impact BIO-3: The Project may adversely affect protected wetlands through temporary placement of construction equipment, construction access, grading, placement of Project fill material, and permanent roadway improvements. **(Less than Significant with Mitigation)**

Wetland delineation surveys conducted during April and May of 2018 identified four habitats within the BSA that may be protected under Section 404 of the CWA: seasonal wetlands, perennial marsh, perennial streams, and ephemeral streams. **Table 5.3-4** summarizes impacts that would occur to these habitats as a result of the Project, outlined below:

- The Project would result in direct permanent effects to 0.10 acres and 749 linear feet of stream habitats through culverting of five streams that intersect the proposed road alignment, and placement of fill through grading and road construction.
- The Project would result in direct temporary impacts to 0.03 acres of stream habitats due to construction access, movement of equipment and personnel, and a temporary crossing of Cottonwood Creek.[16]

[16] The Cottonwood Creek crossing may be clearspan across the low flow channel, or it may be constructed with temporary fill such as rock placed within the OHWMs to create a temporarily culverted access road. Indirect impacts could include interruption or alteration of hydrology to waters downstream of the Project improvements, or reduction in water quality of downstream waters.

- The Project would result in 0.12 acres of direct permanent impacts to seasonal wetlands (including 249 linear feet of in-channel seasonal wetlands) as a result of pavement or road construction.
- The Project would result in 0.33 acres of direct temporary impacts to perennial marsh (<0.01 acres) and seasonal wetlands (0.33 acres) due to grading and construction access.

Table 5.3-4 Project Impacts to Section 404 Aquatic Resources

Habitat Category	Temporary Impact (acres)	Permanent Impact (acres)	Total Impact (acres)
Perennial stream	0.01	0.02	0.03
Ephemeral stream	0.02	0.08	0.10
Perennial marsh	<0.01	0	<0.01
Seasonal wetland	0.33	0.12	0.45

Source: H. T. Harvey & Associates, 2018

The Project design incorporates measures to avoid impacts to Section 404 aquatic resources. For example, the Project has been carefully designed to not interrupt hydrology to wetlands and streams to the south of the proposed road through appropriately sized and placed culverts, and a clearspan bridge over Cottonwood Creek that avoids placement of bridge supports within the OHWMs of the creek. In addition, the culvert conveying the perennial stream along the east side of the western portion of Croak Road has been carefully designed as a native channel bottom, wide box culvert to allow water to flow out into the field wetland complex, as it does today.

All impacts to wetlands and waters have been designed to be the minimum necessary. Work areas in wetlands and streams would be restricted to areas immediately adjacent to permanent impact locations. However, significant impacts to Section 404 resources could still occur. **Mitigation Measures BIO-5**, **BIO-17, BIO-18** would reduce this impact to a less-than-significant level. These measures include compensatory mitigation for habitat loss, consistent with the EACCS, to ensure suitable habitat continues to be available for protected species. In addition to compensatory mitigation for permanent habitat loss, on-site restoration of temporary impact areas is required. The mitigation provides construction controls to delineate and avoid wetlands, requires implementation of EACCS avoidance and minimization measures in wetland areas, and provides seasonal work windows.

Mitigation for Impact BIO-3

Mitigation Measure BIO-5 (described above)

Mitigation Measure BIO-17: The following measures shall be implemented to reduce aquatic resource impacts:

- All wetlands and streams shall be clearly depicted on final Project plans. Areas to be avoided shall be indicated and protected at the site using orange sensitive area fencing to ensure inadvertent impacts do not occur.
- Final grading plans shall be developed that minimize grading-related fill and cut in wetlands and streams to the maximum extent feasible to achieve Project goals and improvements.
- Work within streams and wetlands would be restricted to the dry season from April 15 to October 15 (or as directed by regulatory permitting agency) to protect water quality.
- All appropriate AMMs listed in the EACCS that would apply to and protect these aquatic habitats will be enacted.
- No bioswales or other stormwater infrastructure, or non-critical Project elements such as landscaping, will be placed in wetlands or streams.
- All temporary fills placed in the Cottonwood Creek low-flow channel for construction access will be clean fills (such as clean rock) of a size that can be fully removed from the low-flow channel and the channel then restored to its former topography.
- The Project applicant will implement best management practices (BMPs) as recommended or required by the State or RWQCB to protect water quality. These measures will include, but are not limited to the following:
    - No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material will be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the US/State or aquatic habitat.
    - No equipment will be operated in the live stream channel.
    - Equipment staging and parking areas shall occur within established access areas in upland habitat above the top of bank.
    - Machinery or vehicle refueling, washing, and maintenance shall occur at least 60 feet from the top-of-bank. Equipment shall be regularly maintained to prevent fluid leaks. Any leaks shall be captured in containers until the equipment is moved to a repair location. A spill prevention and response plan will be prepared prior to construction and will be implemented immediately for cleanup of fluid or hazardous materials spills.

- Standard erosion control and slope stabilization measures will be required for work performed in any area where erosion could lead to sedimentation of a waterbody.
- The Project will comply with the MRP and General Construction permit to prevent increases in peak flow, erosion, or reduction in water quality for downslope waters.

Mitigation Measure BIO-18: The permanent loss of waters and wetlands shall be mitigated per the EACCS. Mitigation will be provided via preservation, enhancement, and management as per EACCS guidelines. This may be purchased as bank credits or managed as a Project-specific mitigation site. Because all wetland and stream habitats in the Project site provide habitat for focal species, the mitigation ratio for the impacts will be at least 2.5:1 (acreage of new habitat:acreage of impacted habitat). Because the wetland and stream habitats all provide dispersal and foraging habitat for California red-legged frog and California tiger salamander, the final mitigation ratio must be as high as the determined EACCS requirements for focal species. The required mitigation ratio will vary based on the location and quality of the mitigation lands, which have not been selected yet. Additionally, compensatory mitigation for wetlands and waters must be provided in-kind (wetlands for wetlands and streams for streams).

Temporary impacts to these waters and wetlands will be restored in place at a 1:1 ratio through re-establishment of original contours in stream channels and wetlands, decompaction of compacted soils where necessary, and seeding with a native wetland seed mix developed by a qualified restoration ecologist containing species such as alkali barley and Mexican rush. Temporary impact areas will be monitored for 2 years and the criteria for success will be 75 percent vegetation cover or more compared to pre-Project conditions and no more than 5 percent cover of Cal-IPC-rated moderate and high impact weed species (excluding Cal-IPC-rated annual grasses).

E. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites

Impact BIO-4: The Project may interfere with species migration through segmentation of habitat within the BSA and disruption of nesting birds during Project construction. **(Less than Significant with Mitigation)**

The EACCS identifies three wildlife linkage categories within eastern Alameda County: grassland corridors, aquatic-upland connectivity, riparian/stream connectivity. As discussed below, the BSA supports habitat that falls within these wildlife linkage categories. In general, existing constraints such as the urban developments to the east and west and the I-580 corridor to the south of the Project site currently impede wildlife movement.

The Project site is within a cul-de-sac of upland grassland habitat between development to the west and east and I-580 to the south. This habitat is thus not considered a movement corridor for wildlife between more suitable habitats outside of the BSA

Grassland Corridors

The majority (121.31 acres) of the BSA consists of California annual grassland habitat (**Figure 5.3-1**), which could contribute to regional grassland corridors. Nearby physical constraints currently create barriers that impede wildlife movement in the Project vicinity, such as urbanized development in Dublin and Livermore, and the I-580 alignment south of the Project site. However, the Project would bisect and fragment currently contiguous annual grassland habitat in the BSA by isolating habitat between the Project site and the I-580 alignment. This represents a significant indirect impact, reduced to a less-than-significant level with implementation of **Mitigation Measure BIO-5**. This measure requires future compensatory mitigation based on habitat quality prior to Project implementation.

Construction disturbance during the avian breeding season (February 1 through August 31, for most species) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. This represents a significant indirect impact, reduced to a less-than-significant level with implementation of **Mitigation Measure BIO-13**. This measure requires pre-construction surveys, work exclusion areas to protect active nests, and seasonal work windows to avoid harm to nesting birds.

Aquatic-upland Connectivity

The Project site contains aquatic features with California tiger salamander and California red-legged frog habitat. While suitable breeding ponds are absent from the BSA, perennial and ephemeral stream, perennial marsh, and seasonal wetland habitats on-site may provide suitable dispersal and foraging habitat for the species, while California annual grasslands in the BSA support California ground squirrel and pocket gopher colonies whose burrows can provide suitable refugia for California tiger salamander. Thus, the Project would bisect existing aquatic-upland connectivity areas in BSA by isolating habitat between the Project site and the existing I-580 alignment. This represents a potentially significant indirect impact. To avoid this impact, Dublin will provide compensatory mitigation for both direct (construction-footprint) and indirect (south of the new roadway) California red-legged frog and California tiger salamander habitat loss, using the EACCS mitigation scoresheet so that California red-legged frog and California tiger salamander mitigation will be provided appropriately, as described in **Mitigation Measure BIO-5** above. This will ensure that suitable habitat remains available for these species. In the unincorporated County portion of the Project, the use of a free-span bridge over Cottonwood Creek would allow California red-legged frogs and California tiger salamanders to continue to move back and forth under the new road, thus avoiding indirect habitat loss in the County portion of the BSA. Therefore, with implementation of **Mitigation Measure BIO-5**, this impact is reduced to a less-than-significant level.

Mitigation for Impact BIO-4

Mitigation Measures BIO-5 and **BIO-13** (described above)

Less than Significant Impacts

Riparian/Stream Connectivity

As discussed above and depicted in Figure 5.3-1, the construction footprint contains several perennial streams, perennial streams, and other riparian areas. Project implementation would not significantly affect riparian connectivity, because the use of a free-span bridge over Cottonwood Creek and culverts at all other drainages would allow California red-legged frogs and California tiger salamanders to continue to move back and forth under the new road. This impact would be **less than significant**.

F. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances.

And

G. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan.

Impact BIO-5: Without proper mitigation implementing the East Alameda County Conservation Strategy, the Project could conflict with the goals, objectives, and mitigation criteria contained in that strategy. **(Less than Significant with Mitigation)**

All non-developed portions of the BSA are considered to provide habitat for one or more EACCS focal species. Potential impacts to habitat and protected species would be reduced to a less-than-significant level through implementation of the mitigation measures listed above. All mitigation measures proposed in this section are derived directly from or consistent with the General Minimization Measures listed in the Programmatic Biological Opinion (PBO) for the EACCS. With implementation of mitigation measures stated in this chapter, including **Mitigation Measures BIO-2** through **BIO-10, BIO-14, BIO-16, BIO-17,** and **BIO-18**, this impact would be less than significant. These mitigation measures apply EACCS measures, BMPs, and mitigation ratios to the Project to ensure Project mitigation is consistent with the EACCS.

Mitigation for Impact BIO-5

Mitigation Measures BIO-2 through **BIO-10, BIO-14**, **BIO-16**, **BIO-17**, and **BIO-18** (described above)

Less than Significant Impacts

Alameda County and City of Dublin Tree Ordinance

As discussed above, the County's Tree Ordinance requires that projects involving the removal of trees at least 10 feet tall and 2-inches DBH on the main stem obtain an encroachment permit from Alameda County. An ordinance-sized valley oak tree is present on unincorporated County lands, but would be preserved and therefore no encroachment permit would be necessary.

The City of Dublin Heritage Tree Ordinance outlines requirements for tree removal of any heritage tree. Approximately 8 red willow trees would be removed within the City limits. A eucalyptus (*Eucalyptus sp*.) tree may also be removed. However, these trees are not considered heritage tree species under the ordinance and are smaller than the 24-inch size requirement. Therefore, the Project would not need a tree removal permit.

For the above stated reasons, the Project would comply with all local policies or ordinances protecting biological resource. This impact would be **less than significant**.

City of Livermore Tree Preservation Ordinance

No trees occur in the small portion of the Project site that falls within Livermore. Therefore, Livermore's Tree Preservation Ordinance does not apply.

Other Habitat Conservation Plans

The BSA is not located within an area covered by an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the Project would not conflict with any such documents. While the EACCS is a region-wide plan for conservation of sensitive species and their habitats, it is not a formal Habitat Conservation Plan and does not provide take coverage. Nevertheless, the Project will comply with the measures and requirements of the EACCS.

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and planned residential, commercial, and infrastructure development projects that could adversely affect these species and restoration projects that would benefit these species (see **Chapter 4.0, Introduction to Environmental Analysis**). Future development activities in the Dublin, the County, and Livermore, and elsewhere around the BSA would impact the same types of habitats and species that would be affected by the Project. Therefore, the Project, in combination with other past, present, and foreseeable future projects, could cumulatively impact sensitive habitats and special-status species in the area.

However, as discussed in this section, conservation measures would be implemented to avoid, minimize, and mitigate impacts on these resources. Projects in the region that impact resources similar to those impacted by the Project would be subject to CEQA regulations, EACCS requirements (in eastern Alameda County and public projects in Dublin), and regulatory permits for impacts to

protected species and habitats. Such projects must mitigate their impacts on sensitive habitats and special-status species per the requirements of USFWS, CDFW, and/or the EACCS as applicable, ensuring future projects provide adequate mitigation in a regional framework intended to prevent deleterious cumulative impacts to species and their habitats.

As discussed above, the EACCS is designed to address and avoid cumulative impacts on biological resources in the BSA and larger eastern Alameda County area. The Project would implement required EACCS mitigation at ratios specified in the EACCS. Project compliance with the EACCS combined with the controls described above which would apply to future projects ensures a cumulative impact would not occur. The Project would not have a cumulatively considerable contribution to cumulative effects on biological resources.

REFERENCES

City of Dublin. 1985. City of Dublin General Plan. Community Development Department. Dublin, CA. Amended November, 2017.

City of Dublin. 1994. East Dublin Specific Plan. Community Development Department. Dublin, CA. Updated September 2016.

East Alameda County Conservation Strategy Steering Committee. 2010. East Alameda County Conservation Strategy. Available: http://www.eastalco-conservation.org/documents.html. Accessed: November 5, 2018.

5.4 CULTURAL AND TRIBAL CULTURAL RESOURCES

INTRODUCTION

This section describes the Project's effect on cultural and tribal cultural resources. Information used to prepare this includes the following resources:

- *Draft Historic Property Survey Report* (HPSR) prepared for the Project
- *Draft Archeological Survey Report* (ASR) prepared for the Project
- *Paleontological Identification Report* (PIR) prepared for the Project
- A California Historical Research Information System (CHRIS) search completed by the Northwest Information Center (NWIC)
- A Sacred Lands File search completed by the Native American Heritage Commission (NAHC)
- Ongoing Assembly Bill 52 (AB 52) coordination with local Native American tribes

These documents are available on file with the City of Dublin at 100 Civic Plaza, Dublin, California.

The term "cultural resources" encompasses historic, archaeological, and paleontological resources, and burial sites. These terms are defined as:

- Paleontological Resources: Paleontology is the study of plant and animal fossils from the prehistoric era. Paleontological resources are the remains of scientifically important organisms, mainly vertebrates that are older than 10,000 years.
- Archaeological Resources: Archaeology is the study of prehistoric human activities and cultures. Archaeological resources are generally associated with indigenous cultures.
- Historic-Period Archeological Resources: These resources include artifacts from the historic era, generally associated with historic-period societies.
- Historic Resources: Historic resources are built resources associated with the recent past. In California, historic resources are typically associated with the Spanish, Mexican, and American periods in the state's history.
- Burial Sites: Burial sites are formal or informal locations where human remains, usually associated with indigenous cultures, are interred.

The term "tribal cultural resources" are either of the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

- Included or determined to be eligible for inclusion in the California Register of Historical Resources.
- Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1 of the Public Resources Code.

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1 of the Public Resources Code (PRC). This determination shall take into account the significance of the resource to California Native American tribes.

Scoping Issues Addressed

A letter was received from the NAHC during the public scoping period. Comments contained in the letter generally related to the following:

- Requirements of AB 52 and the required and recommended steps for completing AB 52 consultation
- A summary of Senate Bill 18 (SB 18) requirements and recommended steps
- Recommendations that a CHRIS search and Sacred Lands File search be completed
- Example mitigation measures for minimizing or avoiding impacts to Tribal cultural resources

Refer to Regulatory Setting for a detailed discussion regarding the requirements of AB 52 and SB18. Contact letters to tribes were first distributed in February 2017. The AB 52 consultation process began in June 2017 and is ongoing, as required by AB 52. To date, all tribes on local agencies contact lists (including AB 52 lists) and tribes recommended for contact by the NAHC have been contacted. Three letters have been sent to each tribe, two by mail and one by email. Additional follow-up phone calls were also placed to each tribe. No tribe has requested consultation on the Project under SB 18 or AB 52. As noted above, a CHRIS search and Sacred Lands File search were completed for the Project. Example mitigation measures provided by the NAHC have been incorporated into Project mitigation where applicable and feasible.

REGULATORY SETTING

Federal

National Register of Historic Places Eligibility

The National Historic Preservation Act of 1966 (as amended) authorizes the National Register of Historic Places (NRHP). The NRHP's mission is the documentation and preservation of historic properties in the United States. Section 106 of the NHPA requires federal agencies to consider the effects of their actions on historic properties and provide the President's Advisory Council on Historic Preservation (ACHP) opportunity to comment on any proposed action before

implementation. Guidelines for implementing the Section 106 process are provided in Chapter 36 of the Code of Federal Regulations (CFR), Part 800. Per 36 CFR 800.4, significant cultural resources are those that are eligible for listing in the NRHP. Unless a site is of exceptional importance, it is not eligible for listing in the NRHP until 50 years after it was constructed. The NRHP's criteria for listing in the NRHP also apply to prehistoric archaeological sites. The eligibility of a resource for listing in the NRHP listing is determined through evaluation against eligibility criteria, which are:

> Whether the quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, association, and one or more of the following:
>
> A. The resource is associated with events that have made a significant contribution to the broad patterns of our history
>
> B. The resource is associated with the lives of persons significant in our past;
>
> C. The resource embodies the distinctive characteristics of a type, period, or method of construction; or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;
>
> D. The resource has yielded, or may be likely to yield, information important in history or prehistory

Executive Order 11593

Executive Order 11593, Protection of the Cultural Environment, orders the protection and enhancement of the cultural environment through providing leadership, establishing state offices of historic preservation, and developing criteria for assessing resource values.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act protects Native American religious practices, ethnic heritage sites, and land uses.

Native American Graves Protection and Repatriation Act (NAGPRA)

NAGPRA defines "cultural items," "sacred objects," and "objects of cultural patrimony". NAGPRA establishes an ownership hierarchy; provides for review; allows excavation of remains under certain conditions, but stipulates return of the remains according to ownership; sets penalties for violations; calls for inventories; and provides for return of specified cultural items.

State

California Register of Historical Resources

The California Register of Historic Resources (CRHR) program encourages public recognition and protection of cultural and historic resources. Under California Environmental Quality Act (CEQA), significant cultural resources are called historical resources whether they are of historic or prehistoric age. Generally, a resource should be considered by a lead agency to be historically significant if the resource has integrity and meets one of the following criteria for CRHR listing (CEQA Guidelines Section 15064.5 (a)[3]).

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

CRHR is similar to the NRHP in that any resource determined eligible for the NRHP is also automatically eligible for the CRHR. However, the treatment of historical resources in the CRHR is more inclusive in that resources listed in local historical registers may be included.

California Historical Building Code, California Code of Regulations, Title 24, Part 8

The California Historical Building Code, defined in Sections 18950 to 18961 of Division 13, Part 2.7 of Health and Safety Code, provides regulations and standards for the rehabilitation, preservation, restoration (including related reconstruction) or relocation of historical buildings, structures and properties deemed by any level of government as having importance to the history, architecture, or culture of an area.

Senate Bill 18 and Assembly Bill 52

California Government Code Section 65352.3-5, commonly referred to as SB 18, states that prior to the adoption or amendment of a city or county's General Plan, or Specific Plans, a city or county must consult with California Native American tribes that are on the contact list maintained by the NAHC. The intent of this legislation is to preserve or mitigate impacts on places, features and objects that are culturally significant to Native Americans. The bill also states that the city or county shall protect the confidentiality of information concerning the specific identity, location, character and use of those places, features and objects identified by Native American consultation.

AB 52 requires a lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project. The tribe must send a written request to the lead agency to be informed of proposed projects in that geographic area. The lead agency would then be required to request tribal consultation prior to release of a proposed negative declaration, proposed mitigated negative declaration, or draft environmental impact report.

Public Resources Code Section 5097.5

California Public Resources Code Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

California Health and Safety Code

Section 7052 of the California Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires construction or excavation be stopped in the vicinity of discovered human remains until the County Coroner can determine whether the remains are those of a Native American. Section 7050.5(b) outlines the procedures to follow should human remains be inadvertently discovered in any location other than a dedicated cemetery. The section also states that the County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the NAHC within 24 hours. The NAHC has various powers and duties to provide for the ultimate disposition of any Native American remains, as does the assigned Most Likely Descendant.

Local

City of Dublin

City of Dublin General Plan

The City of Dublin's General Plan contains the following policy related to cultural and tribal resources:

Guiding Policy 7.7.1.A.2:	Follow State regulations as set forth in Public Resources Code Section 21083.2 regarding discovery of archaeological sites, and Historical Resources, as defined in Section 5020.1 of the Public Resources Code.

Eastern Dublin Specific Plan

The City of Dublin's Eastern Dublin Specific Plan (EDSP) contains the following policies and programs related to cultural and tribal resources:

Policy 6-24: The presence and significance of archaeological or historic resources will be determined, and necessary mitigation programs formulated, prior to development approvals for any of the sites identified in the cultural resource survey prepared for this plan.

Policy 6-25: The discovery of historic or prehistoric remains during grading and construction will result in the cessation of such activities until the significance and extent of those remains can be ascertained by a certified archaeologist.

Policy 6-26: All properties with historic resources which may be impacted by future development shall be subjected to in-depth archival research to determine the significance of the resource prior to any alteration.

Policy 6-27: Where the disruption of historic resources is unavoidable, encourage the adaptive re-use or restoration of historic structures (such as the old school house, several barns, and Victorian residences currently in the area) whenever feasible.

Action Program: Cultural Resources

Program 6P: The City of Dublin shall require the following actions as part of the application process for development within eastern Dublin:

- Site Sensitivity: Based on the first stage cultural resource survey of the area conducted as background for the Plan, the City will make a determination of whether the subject site has been identified as having prehistoric or historic resources potentially located on it.
- Research: For those sites with potential resources, a second level of detailed research and field reconnaissance will be required to determine the level of archaeological or historical significance. This research will be the responsibility of the development applicant, and be conducted by a qualified archaeologist. The research will be consistent with the guidelines for prehistoric and historic resources provided in the cultural resources survey prepared for eastern Dublin.
- Mitigation: For those sites that contain significant resources, a mitigation plan must be developed which is consistent with the policies in this Specific Plan and current CEQA guidelines concerning cultural resources.

City of Dublin Municipal Code

Section 8.48.020 Archaeology Regulations of the Dublin Municipal Code states that in the event that archaeological resources, prehistoric or historic artifacts are discovered during any construction or excavation, the following regulations shall apply:

A. Cessation of construction activities. Construction and/or excavation activities shall cease immediately and the Department of Community Development shall be notified.
B. Procedure. A qualified archaeologist shall be consulted to determine whether any such materials are significant prior to resuming ground breaking construction activities. Standardized procedures for evaluating accidental finds and discovery of human remains shall be followed as prescribed in Appendix G of the California Environmental Quality Act Guidelines.

Alameda County

Alameda County General Plan, East County Area Plan

The East Alameda County Area Plan includes policies and goals meant to protect cultural resources. The following goal, program, and policies are relevant to the Project:

Goal: To protect cultural resources from development

Policy 136: The County shall identify and preserve significant archaeological and historical resources, including structures and sites which contribute to the heritage of East County.

Policy 137: The County shall require development to be designed to avoid cultural resources or, if avoidance is determined by the County to be infeasible, to include and implement appropriate mitigation measures that offset the impacts.

Program 59: The County shall require a background and records check of a project area if a project is located within an extreme or high archaeological sensitivity zone as determined by the County. If there is evidence of an archaeological site within a proposed project area, an archaeological survey by qualified professionals shall be required as a part of the environmental assessment process. If any archaeological sites are found during construction, all work in the immediate vicinity shall be suspended pending site investigation by a qualified archaeology professional. Proposed structures or roads on property that contains archaeological sites should be sited in consultation with a professional archaeologist to avoid damaging the archaeological sites. The County shall follow CEQA Guidelines for cultural resource preservation procedures in reviewing development projects located near identified cultural resources. Appropriate measures for preserving an historic structure include renovation or moving it to another location. Proposals to remove historic structures shall be reviewed by qualified professionals.

City of Livermore

City of Livermore General Plan

Livermore's General Plan, Community Character Element, includes a discussion of cultural resources and provides goals, objectives, policies, and actions to preserve and enhance cultural resources in Livermore. The following policies are relevant to the Project:

CC-3.1.P3 Whenever a historical resource is known to exist in or near a proposed project area, the City shall require an evaluation by qualified professionals as a part of the environmental assessment process.

CC-3.4.P1 The City shall require proper archaeological or paleontological testing, research, documentation, monitoring, and safe retrieval of archaeological and cultural resources as part of a City established archaeological monitoring and mitigation program.

CC-3.4.P2 Whenever there is evidence of an archaeological or paleontological site within a proposed project area, an archaeological survey by qualified professionals shall be required as a part of the environmental assessment process.

CC-3.4.P3 If an archaeological site is discovered during construction, all work in the immediate vicinity shall be suspended pending site investigation by qualified professionals. If, in the opinion of a qualified professional, the site will yield new information or important verification of previous findings, the site shall not be destroyed.

EXISTING CONDITIONS

The study area for cultural resources is referred to as the area of potential effects (APE). For the purpose of evaluating potential impacts to historic resources, a historic APE was established and includes the entirety of each parcel the Project site traverses, along with some adjacent areas to the west and east of the Project site. The historic APE is used to evaluate direct and indirect impacts to historic resources. To evaluate potential impacts to paleontological and archeological resources, including historic-period archeological resources, an archeological APE was established. The archeological APE includes all areas where ground disturbance could occur, and is equivalent to the construction footprint for the Project. The archeological APE includes a vertical element as well as a horizontal (or plan view) component, to account for grading and excavation that would be required for the Project. To evaluate the likelihood of undiscovered archeological resources within the archeological APE, a records search was completed that includes a 1-mile buffer around the Project site.

The study area for Tribal cultural resources is broader, and is not limited to the APE. The Tribal cultural resources study area includes off-site areas that may be important to local Tribes, and generally is defined as the area included in the Sacred Lands Search, as determined by the NAHC based on the Project location and Project description.

Paleontological Resources

To evaluate the likelihood for paleontological resources to be present at the site, geologic mapping of the Tri-Valley area was examined. Geologic time is described by eras, periods, and epochs, shown in **Figure 5.4-1**. The Holocene epoch is the present-day geologic epoch. It began approximately 11,650 years ago, after the last glacial period.

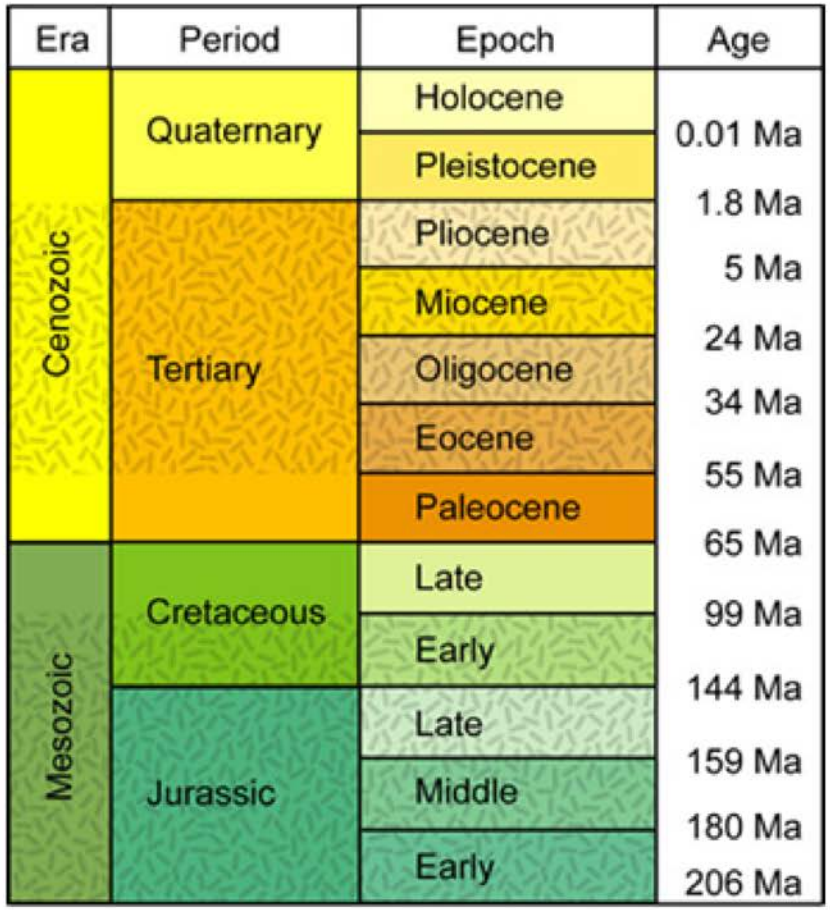
As documented in the PIR, the Project site is within the California Coast Range Province. The Coast Range reflects regional deformation as the result of three major fault systems that have been important in the tectonic history of the area: the San Andreas, the Sur-Nacimiento, and the Coast Range thrust. Stratigraphic units[1] at and near the Project site may be broken down into three groups:

1. Complex igneous (a rock having solidified from lava or magma) and metamorphic (a rock that has undergone transformation by heat, pressure, or other natural processes) rocks at the deepest levels from the Jurassic and Cretaceous periods; this type of rock does not contain fossils
2. Marine sedimentary rocks generally above the igneous and metamorphic layers, from the Cretaceous through late Tertiary period; this type of rock has the potential to produce fossils
3. Continental rocks and alluvial deposits (which are made up of sediments deposited or cemented into a unit of rock) above the marine sedimentary deposits, from the late Tertiary period (or Pliocene epoch) to the Holocene epoch; this type of rock and soil has the potential to produce fossils

The Livermore Valley area is a topographic and structural depression filled with alluvium as thick as 3,900 feet, referred to as the Livermore Formation. Alluvial deposits as defined by the Livermore Formation are present at the surface and below. Generally, the upper 2 feet is composed of younger alluvium (Holocene or recent) and will not contain any fossils. Older alluvium below the first few feet of soil may contain “Ice Age” fossils from the Pleistocene epoch.

A detailed records search of recorded fossils was completed for the Project site and in the surrounding areas which contain similar geologic layers. Records searches included the Los Angeles County Museum (LACM) and the University of California Museum of Paleontology (UCMP). UCMP indicated no recorded fossil presence in the Project site. However, over 900 “Ice Age” fossils have been collected south, north, and northwest of the Project site. These fossils were found in older alluvium outside Pleasanton, in Livermore, unincorporated areas of the County (specifically in Doolan Canyon), and in Martinez. LACM concluded that no vertebrate fossil localities have been previously identified within the Project site, but identified other fossil localities found within the same or similar sedimentary deposits as deposits in the subsurface of the Project site. Due to the presence of fossils nearby, Quaternary sedimentary deposits in the area are ranked as having "high sensitivity" paleontologically.

[1] A Stratigraphic Unit is a volume of rock forming a discrete and definable unit. Such units are determined on the basis of their lithology (description of their macroscopic features, e.g. its texture), or their fossil content, or their time span.



Geologic Time **Figure 5.4-1**

Source: PaleoWest, 2018

A mammoth tusk, portion of skull, rib bones and leg bones have previously been recovered from a site approximately 0.75 miles north east of Fallon Road at Jordan Ranch development, 0.5 miles north of the Project. The mammoth fossils occurred in the same type of deposits mapped at the site.

The uppermost 2 to 3 feet of soil at the Project site is Holocene soil less than 10,000 years old. Because by definition, organic remains must be older than 10,000 years old to be considered as fossils, the upper 2 to3 feet of soil could not contain paleontological resources and is considered to have "Low Sensitivity". However, if excavations exceeding more than 2 to 3 feet occur, than there is potential to encounter Quaternary alluvium older than 10,000 years and therefore, could encounter paleontological resources. Quarternary alluvium has the potential to contain vertebrate fossils, most significantly, mammals. Further, as mentioned above, Quaternary sedimentary deposits in the area are ranked as having "high sensitivity" paleontologically.

Prehistory Setting

The Tri-Valley sub-region compromises of the cities of Dublin, San Ramon, Pleasanton, and Livermore, and portions of both Alameda County (County) and Contra Costa County. Existing primary source of information on prehistoric life in the greater Livermore-Amador Valley area is generally derived from excavations related to construction in areas south of Interstate 580 (I-580).

The first discoveries of buried archaeological sites were found in the Arroyo Mocho area south of I-580 on the banks of streams. Analysis of materials taken from these sites indicates that trading occurred with Native American peoples throughout central and northern California. These prehistoric sites appear to have been abandoned during certain periods mainly due to regular flooding. To date, several village sites on the northern and southern borders of the arroyo's seasonal marsh, known in historic times as Willow Marsh, were found buried under varying amounts of silt material. This marsh was an important source for seasonal foods such as migratory waterfowl and shorebirds, which provided protein-rich supplements to the typical aboriginal diet of greens, roots and bulbs, seeds, and acorns.

Mission records and ethnographies (the systematic study of people and cultures) identify the Native Americans living in the Pleasanton area at the time of European contact in the latter half of the 18th century as members of various groups that are now referred to collectively as Ohlone. On the basis of linguistic evidence, it has been suggested that the ancestors of the Ohlone arrived in the San Francisco Bay area about A.D. 500, having moved south and west from the Sacramento-San Joaquin Delta region. Mussels were an important staple in the Ohlone diet as were acorns of the coast live oak, valley oak, tanbark oak and California black oak. Seeds and berries, roots, grasses, and the meat of deer, elk, grizzly, sea lion, rabbit, and squirrel also contributed to the Ohlone diet. Linguistic evidence has been interpreted to indicate that prior to about A.D. 500, speakers of the Hokan language occupied territories that included the APE until the ancestral Ohlone displaced them. Archaeological sites have been found in areas of higher ground near watercourses in Pleasanton and Livermore along the San Ramon drainage. However, none of these sites were identified in the EDSP area. Two previously recorded cultural resources within 1 mile of the APE include prehistoric components from Native American peoples.

Cottonwood Creek is a perennial stream that flows overland generally northeast to southwest across the eastern portion of the Project site. Areas in close proximity to water resources may have a high probability of containing archeological resources as described above, as Native Americans may have occupied these areas for fishing and access to fresh water. A desktop survey was completed which evaluated the soil sensitivity within the archeological APE and determined that while the area around Cottonwood Creek contains potentially sensitive soils, the depositional history and landform indicates low buried site potential. Essentially, areas within the APE would have experienced frequent erosion from the waterflow in the Creek, and therefore are unlikely to have been inhabited by Native Americans, and are unlikely to contain cultural deposits.

Archeological Resources and Historic-Period Archeological Resources

A NWIC records search was completed for the Project in February 2017 and included a 0.25-mile radius surrounding the Project site. In November 2018, an additional NWIC records search was completed using a 1-mile buffer. Information on previous archaeological surveys and recorded sites within a 1-mile radius of the APE was gathered to identify and evaluate the potential for the presence of archaeological resources at the Project site. The study included a review of archaeological and historical literature, as well as records and maps on file at NWIC. The *California Inventory of Historic Resources* (1976) and the Office of Historic Preservation's Historic Property Data File (HPDF) for Dublin, Livermore and the County were examined. The records searches failed to identify previously recorded archaeological resources within the APE. One previously recorded archaeological resource was identified within 0.25 mile of the Project site (beyond the APE), and has prehistoric and historic components.

Four previously recorded cultural resources were recorded within 1 mile of the Project site. The resources include historic structures, the potential ruins of a farmstead, a section of the Arroyo Mocho that was channelized, and a site which consists of two standing buildings, a concrete wall, and other associated debris from a historic homestead.

The pedestrian survey completed for the Project covered the entire archeological APE, and surface visibility ranged from 0 to 90 percent due to varying coverage by cheatgrass, an invasive annual grass that obscures much of the ground within the APE. No prehistoric archaeological resources were observed, and one potential historic archaeological resource was recorded. The historic ruins of a small ranch, including one standing corral and associated structural debris, was identified just east of the existing intersection of Dublin Boulevard and Fallon Road, within the Project site. This resource was given the identifier "PW-127-1" in technical reports prepared for the Project (available on file with the City of Dublin), and is referred to as the Corral Site in this section. The Corral Site was evaluated as potentially eligible for listing in the NRHP under Criterion D. The Corral Site is discussed further below.

Historic Resources

Based on the results of both NWIC records searches completed for the Project, there are no previously identified historic resources within the historic APE. The pedestrian survey completed for the Project identified two properties which are potentially eligible for inclusion in the NRHP. Each of these resources is discussed below.

Collier Canyon Road Site

One agricultural property containing three sheds, two homes, a barn, and a water tank house that is potentially eligible for inclusion in the NRHP under criteria A, C, and D. The property is at 1421 Collier Canyon Road on unincorporated County land, outside of the Project site. The site is surrounded by I-580 and Collier Canyon Road immediately to the south, both highly visible from the property, and other adjacent, modern developments such as Crosswinds Church to the south and a landscaping business to the west/northwest. Seven buildings and structures older than 50 years were recorded within the residential and agricultural property during the pedestrian survey. According to the 1870 United States Census records, the homes were occupied by a group of farm laborers. This resource was given the identifier "PW-127-4" in technical reports prepared for the Project (available on file with the City of Dublin), and is referred to as the Collier Canyon Road Site in this section.

NRHP Criteria Evaluation

Criterion A: Occupied as early as 1876 as a small farm, most of the buildings currently occupying the property (with the exception of the earlier barn) were built between 1940 and 1950. This property is associated broadly with the late 19th and early 20th century agricultural development of Murray Township, and appears to have been continuously in use for nearly a century and a half. It is an increasingly rare example of single-family farms remaining in this suburban environment. For its association with the agricultural development of eastern Alameda County and Murray Township[2], the resource is eligible for the NRHP under Criterion A.

Criterion B: Archival research has not identified an association between the resource and historically significant individuals or groups within the region, state, or nation. The resource is not eligible for the NRHP under Criterion B.

Criterion C: The late 19th - or early 20th century barn is typical of hay and livestock barns widely used from the late 19th through the mid-20th century in this area. It has been minimally modified and altered, and appears to still be in use for agricultural activities. Both houses are typical of inexpensive mid-20th century single family houses lacking in design elements characteristic of any particular architectural style or movement. The three sheds are good examples of vernacular, utilitarian buildings constructed according to local needs from redwood lumber and commercially produced sheet metal and hardware, for vehicle and equipment storage on a rural lot. They lack ornamentation or design elements

[2] The Murray Township comprised an area that roughly correlates to present-day areas within the cities of Dublin, Pleasanton, and Livermore, and unincorporated areas in Alameda County.

characteristic of any particular architectural style or movement. Similarly, the form and construction of the tank house reflects its practical water storage use. In general, the seven buildings and structures over 50 years of age extant at the resource do not display characteristics of the work of a master builder, or distinctive of significant architectural styles or movements. However, as a minimally modified complex of early-mid-20th century utilitarian rural building types in eastern Alameda County, they offer a rare glimpse into the history of the small-scale agricultural landscapes of the region's past. As such, the resource is eligible for the NRHP under Criterion C.

Criterion D: As suburban residential development encroaches upon the former family farms and fields of Murray Township, material evidence of the previous century and a half of agricultural lifeways are increasingly obscured and obliterated. Although most of the visible buildings present at this location post-date the Second World War, late 19th century maps indicate that the property has been continuously occupied and in agricultural use since at least 1876. Archaeological and additional architectural study of the rural homes and farms of eastern Alameda County's 19th and early 20th century residents could provide important information regarding social and economic development in this area. Therefore, the resource is eligible under Criterion D for the NRHP.

Corral Site

The historic ruins of a small ranch, including one standing corral and associated structural debris, was identified within the Project site. The site is believed to be partially within the proposed construction and operational footprint of the Project, and extends south of the Project site. The Corral Site was evaluated as potentially eligible for listing in the NRHP under Criterion D for its ability to provide important information regarding the social and economic development of eastern Alameda County in the late 19th and early 20th centuries. Visible surface remains include a standing corral, ruins of a fence and cattle chute, a concrete pad, and piled and scattered structural debris and refuse. Given the length of occupation of the ranch over the last 100 years (based on historical records research), these remains likely indicate a moderate to high potential for additional subsurface archaeological materials such as a cellar, privy, or trash pits.

The integrity of the surface deposits is good, as they remain in their original location and retain their spatial associations, while the presence and integrity of any subsurface deposits remains unknown. As of December 2018, no test excavations or other subsurface investigation has been completed at the Corral Site. Therefore, the Corral Site as a whole, including potential subsurface archaeological deposits and their relationship to surface evidence, was evaluated for NRHP eligibility under Criterion D.

NRHP Criteria Evaluation

Criterion A: Likely representing the remains of a family farm, this property is associated more broadly with the late 19th and early 20th century agricultural development of Murray Township. The aerial photographs depicting a house, barn and outbuildings echo historic descriptions of a typical Murray Township farm in the late 19th and early 20th century. The farmers of this era were linked to broader markets in the state and nation, selling their

agricultural products and purchasing necessities for their operations – from barn door hangers, to fences, to pumps and tanks – from local and mail-order merchants. While certainly participating in this broader pattern of development, the property is not uniquely representative of or directly associated with historical events or themes of state or national significance. The resource is not eligible for the NRHP under Criterion A.

Criterion B: Archival research has not identified an association between the resource and historically significant individuals or groups within the region, state, or nation. The resource is not eligible for the NRHP under Criterion B.

Criterion C: The corral remains are typical examples of combined rural vernacular construction. Showing evidence of decades of repair and modification, the corral chutes and fences exemplify the employment of changing available materials and building technologies in the continuous use of farm infrastructure. This fence, however, is not unique in its association with agricultural technologies, nor is it the work of a master builder or artist. The remains of the other buildings and structures formerly standing at this location are too degraded to evaluate their architectural, artistic, or engineering merits. The resource is not eligible for the NRHP under Criterion C.

Criterion D: As suburban residential development encroaches upon the former family farms and fields of Murray Township, material evidence of the previous century and a half of agricultural lifeways are increasingly obscured and obliterated. Archaeological study of the rural homes and farms of eastern Alameda County's 19th - and early-20th century residents could provide important information regarding social and economic development in this area. The surface archaeological remains have good integrity in that they remain in original location and in physical relation to one another. The presence and integrity of subsurface archaeological deposits remain unknown. Additional archaeological testing was recommended in the Archeological Survey Report prepared for this resource to more fully evaluate this resource's eligibility under Criterion D (available on file with the City of Dublin). For the purposes of this Draft EIR, it is assumed the resource is eligible for inclusion in the NRHP under Criterion D.

Tribal Cultural Resources

On January 31, 2017, PaleoWest contacted the NAHC by email to request information on known Native American traditional or cultural properties at or near the Project site, through a search of the Sacred Lands File. This communication included a request for a list of individuals or groups with cultural affiliation to the study area. A Sacred Lands file search was completed and did not identify any tribal cultural resources in the study area. However, records maintained by the NAHC and CHRIS are not exhaustive, and these searches do not preclude the existence of tribal cultural resources. A list of interested Native American tribal representatives with traditional lands or cultural places within Alameda County was included in the NAHC response.

In February 2017, certified letters were sent to all Native American contacts provided by the NAHC describing the Project, providing a location map, and requesting any information and concerns the Tribes may have regarding the Project or study area. No written responses were received. In March 2017, a first round of follow up phone calls was completed and included all Native American contacts provided by the NAHC. The following contacts responded with requests:

- Coastanoan Rumsen Carmel Tribe: Mr. Tony Cerda requested a copy of the geotechnical report, a plan for unanticipated discoveries, and asked that he be notified if any cultural resources were encountered.
- Indian Canyon Mutsun Band of Costanoan Indians: Ms. Ann Marie Sayers asked for a phone call once the survey had been completed and recommended that a Native American monitor and archaeological monitor be present during any earth movement.
- Muwekma Ohlone Indian Tribe of the San Francisco Bay Area: Ms. Rosemary Cambra asked to be contacted immediately if any cultural resources were found.

An additional round of follow-up phone calls was made in March 2017 and follow-up emails were sent to Ms. Irene Zwierlein, Mr. Andy Galvan and Ms. Perez.

As required under AB 52, all Tribes that have requested to be included on the AB 52 lists of Dublin, the County, and Livermore were contacted. Letters were sent to each Tribe in June 2017 and November 2017. No responses have been received as of December 2018. In summary, consultation with the NAHC and with interested Native American individuals and groups provided by the NAHC has resulted in no additional information about specific cultural resources or sacred sites within the APE.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for cultural and tribal resources were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this Project.

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria.

A. Cause a substantial adverse change in the significance of a historic resource (CEQA Guidelines Section 15064.5)

B. Cause a substantial adverse change in the significance of an archaeological resource (CEQA Guidelines Section 15064.5)

C. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature

D. Disturb any human remains, including those interred outside of formal cemeteries

E. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

   - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

   - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe

Methodology

For cultural resources, direct impact assessment is based on a comparison of known resource locations with the construction footprint, where there is potential to remove, relocate, damage, or destroy the resource. If such ground disturbance overlaps recorded site locations, then a direct impact may occur. Historical buildings and tribal cultural resources such as landscapes or views of natural elements may be indirectly impacted if the nearby setting and context is modified substantially, even if the building, natural feature, or structure itself is not physically affected.

Historic Resources

Impacts to NRHP-eligible resources are considered adverse when "an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" (36 CFR 800.5[1]). Examples of adverse effects include physical destruction or damage to all or part of the property; alteration that is not consistent with the Secretary of the Interior's standards for the treatment of historic properties; removal of the property from its historic location; change in the type of use or of the physical characteristics of the setting; introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant features; and neglect resulting in deterioration (36 CFR 800.5[2]).

Projects that would impact CRHR-listed and CRHR-eligible resources and resources listed in local historical registers may result in a significant effect on the environment if the Project would cause a substantial adverse change in the significance of a historical resource (Public Resources Code [PRC] 21084.1). Substantial adverse change in the significance of a historical resource refers to "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings

such that [its] significance…would be materially impaired (CEQA Guidelines Section 15064.5[b][1]). Material impairment means demolition of the resource, or alteration of the physical characteristics that make the resource eligible for listing such that it would no longer be eligible for the CRHR or a local historical register (CEQA Guidelines Section 15064.5[b][2]).

The CEQA Guidelines contain specific standards for determining the significance of impacts on "historical resources" (PRC Section 21084.1, 14 California Code of Regulations (CCR) Section 15064.5). A resource listed in the California Register of Historical Resources, or determined by the State Historical Resources Commission to be eligible for listing in the Register, must be treated as an "historical resource" for purposes of CEQA. PRC Section 21084.1; 14 CCR Section 15064.5(a)(1). A resource designated as historically significant in a local register of historical resources, or identified as significant in an approved historical resources survey, is presumed to be significant. The presumption of significance may be overcome if the agency concludes, based on a preponderance of the evidence, that the site is not historically or culturally significant (PRC Section 21084.1; 14 CCR Section 15064.5(a)(2)).

A lead agency may also find that a site that does not meet any of these criteria should be treated as a historical resource under CEQA (PRC Section 21084.1; 14 CCR Section 15064.5(a)(4)). A lead agency may find that "any object, building, structure, site, area, place, record, or manuscript" is historically significant or significant in the "cultural annals of California" provided that its determination is "supported by substantial evidence in light of the whole record" (14 CCR Section 15064.5(a)(3)). The guidelines also note that a resource ordinarily should be considered historically significant if it meets the criteria for listing on the California Register of Historical Resources (14 CCR Section 15064.5(a)(3)).

The one potential built historic resource identified within the historic APE for the Project would not have the potential to be directly impacted by the Project, as it is outside of the construction footprint. This analysis therefore focuses on possible indirect impacts to the potential resource.

Archeological Resources

Archaeological sites are usually adversely affected only by physical destruction or damage. The CEQA Guidelines contain specific standards for determining the significance of impacts to archaeological sites (PRC Section 21083.2; 14 CCR Section 15064.5(c)). If the lead agency determines that the Project may have a significant effect on unique archaeological resources, the Environmental Impact Report (EIR) must address those archaeological resources (PRC Section 21083.2(a)). A "unique archaeological resource" is defined as an "archaeological artifact, object, or site" that, without merely adding to the current body of knowledge:

- Contains information needed to answer important scientific research questions and in which there is a demonstrable public interest;
- Has a special or particular quality such as being the oldest of its type or the best available example of its type; or

- Is directly associated with a scientifically recognized important prehistoric or historic event or person. (PRC Section 21083.2(g)).
- Under CEQA, significant impacts on non-unique archaeological resources need not be addressed in an EIR. (PRC Section 21083.2(a), (h)).

The limitations in PRC Section 21083.2 relating to unique archaeological resources do not apply to archaeological sites that qualify as "historical resources." , as defined in PRC Section 21083.2(l). If a lead agency finds that an archaeological site is a historical resource, impact assessment is governed by PRC Section 21084.1, which provides standards for identification of historical resources (14 CCR Section 15064.5(c)(2), Section 13.58, 20.94-20.98). The CEQA Guidelines also provide that public agencies should seek to avoid effects that could damage a "historical resource of an archaeological nature" when it is feasible to do so (14 CCR Section 15126.4(b)(3)).

The one potential historic-period archeological resource identified within the APE is potentially eligible for inclusion in the NRHP under Criterion D, as it may be likely to yield information important in history. Therefore, this resource is analyzed as a historic resource for the purposes of this EIR. This analysis also evaluates the potential for encountering unidentified archeological resources during Project construction.

Tribal Cultural Resources

Based on the SB 18 and AB 52 consultation described above, there are no known tribal cultural resources within the Project site or larger APE. Therefore, this analysis examines the possibility of encountering unrecorded tribal cultural resources during Project construction.

Impact Analysis

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. Cause a substantial adverse change in the significance of a historic resource (CEQA Guidelines Section 15064.5).

Impact CUL-1: The Project could result in damage to or destruction of the historic-period archeological resource identified within the construction footprint (Corral Site), as a result of grading and excavation during construction. **(Less than Significant with Mitigation)**

The Corral Site is partially within the proposed construction and operational footprint of the Project, and extends south of the Project site. Given that subsurface investigation has not been completed, the precise extent of the resource has not been confirmed. The estimated boundaries of the resource have been determined based on historical records, historic aerial photographs, and a site survey.

Project construction would require excavation, grading, and construction of new roadway elements within portions of the area assumed to be a part of this resource. Therefore, Project construction would have the potential to remove, damage, or destroy surface elements of this resource, and subsurface elements if they are present. Construction could uncover subsurface features such as a cellar, trash pit, privy, or more general scatters of material such as glass, metal, wood, ceramic, or other fragments associated with the historic occupation of the site. Based on the NRHP criteria evaluation, the eligibility of the Corral Site is related to the potential research and informational value of the site, which could include documentation, recording, collecting, curation, and further evaluation of items found on the site. The standard for whether sites are eligible for the NRHP under Criterion D includes whether the assessment and scientific analysis of the resource will "significantly supplement or revise current historical or archeological knowledge or understanding".[3]

Without proper pre-construction and construction measures, implementation of the Project could adversely affect the potential informational value of the site in its relationship to agricultural lifeways and rural homes and farms in eastern Alameda County in the 19th and early 20th century. This is a potentially significant impact. Implementation of **Mitigation Measure CUL-1** requires that further investigation of the Corral Site be completed prior to Project construction, including subsurface investigation, to more accurately characterize and evaluate the site's potential value as a historic-period archeological resource. This mitigation measure further requires that a professionally qualified archeologist specializing in historic-period archeology (historic archeologist) evaluate the site after subsurface investigation, and that any further documentation and/or collection of artifacts from the site recommended by the historic archeologist be completed prior to Project construction. This will ensure that the site's potential informational value is not lost, and the research and/or scientific value of items at the surface or identified during subsurface investigation are preserved through documentation and collection. Further, this mitigation measure requires on-site monitoring during construction in this area, and requires work be halted if additional elements of the site are encountered during construction, so evaluation, documentation, and collection efforts can occur. With implementation of this mitigation measure, the impact would be less than significant.

Mitigation for Impact CUL-1:

> **Mitigation Measure CUL-1:** The following measures shall be implemented prior to construction of the Project, and during construction of the Project, to ensure known and potential historic-period archeological resources at the Corral Site are properly documented and/or collected:
>
> - Prior to construction, surface remnants will be documented by a professionally qualified archaeologist with appropriate qualifications in historic-period archaeology. Surface remnants may be collected for further study, at the discretion of the archeologist.

[3] National Parks Service, *Criteria For Evaluation*, 2018

- Prior to construction, recommendations for subsurface investigation outlined in the Archeological Survey Report prepared for the Project shall be implemented. A subsurface testing plan shall be prepared and executed by a professionally qualified archeologist with appropriate qualifications in historic-period archeology. The plan shall allow for, and outline requirements for, the documentation, collection, analysis, and curation of historic artifacts encountered during subsurface testing.

- The report shall outline any further recommendations for the site, which may include additional site testing, construction protocols to avoid the destruction of resources on-site through documentation and collection, or other measures. The City of Dublin shall evaluate recommendations of this report and implement measures as feasible to further aid in resource documentation and collection at the site.

- In addition to measures provided in the written report, a professionally qualified historic archeologist shall be present on-site when construction activities take place within the resource area. The need for on-site monitoring on a day-to-day basis shall be at the discretion of the historic archeologist. If artifacts or other historic archeological resources associated with the site are encountered during construction, work shall be halted within 25 feet of the discovery until the historic archeologist has evaluated the discovery. The historic archeologist shall determine whether the artifacts and/or resources are significant and warrant documentation and/or recovery, or whether they are not significant and no further action is warranted.

- Any significant artifacts or other historic archeological resources encountered during construction shall be documented, collected, analyzed, and/or curated as appropriate so that their informational, research, and/or scientific value may be preserved. The appropriate treatment of artifacts and historic archeological resources encountered shall be determined by the professionally qualified historic archeologist.

- The results of surface resource documentation and subsurface testing shall be documented in a written report prepared by the qualified historic archeologist and submitted to the City of Dublin.

Less than Significant Impacts

The records search conducted by NWIC did not identify any historic resources within the historic APE or within a 0.25-mile radius of the Project. However, the pedestrian survey identified the Collier Canyon Road Site, containing three sheds, two homes, a barn, and a water tank house that is potentially eligible for inclusion in the NRHP under Criteria A, C, and D. This property is outside the construction and operational footprints and would not be directly affected by the Project. The Collier Canyon Road Site is surrounded by I-580 and Collier Canyon Road immediately to the south and commercial development to the south and west. I-580 in particular dominates the existing

setting of the resource. The existing environment has already altered the "single family farm environment" that once defined this area. The existing conditions surrounding the resource have degraded the integrity of the setting, which is not considered to be a contributing element to the resource's NRHP eligibility. Therefore, the Collier Canyon Road Site would not be indirectly affected by the Project, as the existing setting is not historic or a contributing feature to the site's NRHP eligibility, as the setting has already been altered and degraded by surrounding land uses.

Implementation of the Project would add a new, linear roadway to the north of the Collier Canyon Road Site, which would be visible from the resource. Given the existing setting of the resource as a modern, transportation-dominated environment, and taking into consideration that the resource's setting is not a contributing element to its NRHP eligibility, the Project would not cause an adverse change to the property. This impact would be **less than significant**.

B. Cause a substantial adverse change in the significance of an archaeological resource (CEQA Guidelines Section 15064.5).

The records searches conducted by NWIC did not identify previously recorded archaeological resources within the APE. The pedestrian survey covering the entire APE did not identify any prehistoric archaeological resources, however the Corral Site and Collier Canyon Road Site discussed above were both identified as potentially eligible for listing in the NRHP under Criterion D, for their potential to provide important information regarding the social and economic development of eastern Alameda County in the late 19th and early 20th centuries. Therefore, consistent with Section15064.5(c)(2) of the CCR, both resources are evaluated as historic resources above.

Impact CUL-2: The Project could result in damage to or destruction of unidentified buried archeological resources as a result of grading and excavation during construction. **(Less than Significant with Mitigation)**

While records searches of the Project site and pedestrian survey did not identify any prehistoric archeological resources, there is the possibility that previously unknown archeological resources exist below the ground surface within the construction footprint. Prehistoric archaeological resources have increased potential to be found in areas with aquatic resources, such as Cottonwood Creek. This is a potentially significant impact. Implementation of **Mitigation Measure CUL-2** would require consultation with a qualified archeologist in the event of the discovery of buried archaeological resources, ensuring any discovered resource would be evaluated and, if recommended, collected to allow the resource's informational value to be investigated. With implementation of this mitigation measure, this impact would be reduced to a less-than-significant level.

Mitigation for Impact CUL-2:

> **Mitigation Measure CUL-2:** If buried archaeological resources are discovered during construction, operations shall stop within 50 feet of the find and a qualified archaeologist shall be consulted to evaluate the resource in accordance with CEQA Guidelines 15064.5. Archeological resources may include, but are not limited to, glass, metal, ceramics, wood,

privies, trash deposits or similar debris. A standard inadvertent discovery clause shall be included in the construction contract to inform contractors of this requirement. If after evaluation it is determined the resource does not qualify as a significant resource, then no further protection or study is necessary. If the resource does qualify as a significant resource then the archaeologist shall make recommendations concerning appropriate mitigation measures that shall be implemented to protect the resources, including but not limited to monitoring, excavation, and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines.

C. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Impact CUL-3: The Project could result in damage to or destruction of unidentified buried archeological resources as a result of grading and excavation during construction. **(Less than Significant with Mitigation)**

The Project site is located in an area that is considered likely to have paleontological resources present. As mentioned above, Quaternary sedimentary deposits in the area are ranked as having "high sensitivity" paleontologically, as over 900 “Ice Age” fossils have been collected south of the Project outside Pleasanton. Based on proposed excavation depths for the Project (anticipated to range from 2 feet to 40 feet in depth), there is potential for Project construction to encounter soils and rock older than 10,000 years, and consequently paleontological resources. Therefore, the potential to encounter a unique paleontological resource is reasonably high. This is a potentially significant impact. Implementation of **Mitigation Measure CUL-3** would involve retention of a principal paleontologist to monitor construction period activities, to ensure that any paleontological resources encountered are evaluated and, if recommended, recovered and appropriately curated to allow those resources to contribute to the body of paleontological research in the Bay Area. With implementation of this mitigation measure**,** this impact would be reduced to less than significant.

Mitigation for Impact CUL-3:

Mitigation Measure CUL-3: The following measures will ensure that any paleontological resources encountered during Project construction would be properly handled, evaluated, and curated to ensure their value to paleontological research is preserved.

- A principal paleontologist shall be retained and shall determine when and where monitoring will be required, and who will conduct it. Monitoring shall be required where excavation at depths greater than 2 to 3 feet is being undertaken. The principal paleontologist shall have the authority to halt work in the event that paleontological specimens are discovered, until assessment and appropriate salvage (if needed) is completed.
    - The principal paleontologist or another mitigation program staff member shall coordinate with appropriate construction contractor personnel to provide

information regarding applicable requirements concerning protecting paleontological resources. Contractor personnel, particularly heavy equipment operators, shall also be briefed on procedures to be followed in the event that fossil remains and/or a currently unrecorded fossil site is encountered by earthmoving activities, particularly if a paleontological construction monitor is not present on the site at the time of the discovery. Additional briefing shall be presented to new contractor personnel as necessary. Names and telephone numbers of the monitor and other appropriate mitigation program personnel shall be provided to appropriate contractor personnel.

- When required, monitoring shall consist of visually inspecting freshly exposed cuts and spoil piles for the discovery and recovery of larger fossil remains, and periodically dry test screening to allow for the discovery and recovery of smaller fossil remains. If larger vertebrate fossils are noted by construction workers or monitors, excavation there will cease, and the monitor will be notified.
    - The monitor and recovery staff will salvage all larger vertebrate fossil remains, as soon as practicable and as quickly as possible, following Society of Vertebrate Paleontology protocols. The monitor shall document the location and proper geologic context of any recovered fossil occurrence or rock or sediment samples. Any recovered rock or sediment sample shall be processed to allow for the recovery of smaller fossil remains that normally are too small to be observed by the monitor.
    - If the principal paleontologist or monitor determines that the fossil site is too unproductive or the fossil remains not worthy of recovery by the monitor, no further action will be taken to preserve the fossil site or remains, and earthmoving activities shall be allowed to proceed through the site immediately.

- The monitor shall maintain daily monitoring logs that include the particular tasks accomplished, the earthmoving activity monitored, the location where monitoring was conducted, the rock unit(s) encountered, the fossil specimens recovered, and associated specimen data and corresponding geologic and geographic site data. A final technical report of results and findings shall be prepared by the principal paleontologist in accordance with any local jurisdictional requirements (including those of the City of Dublin, Alameda County, and City of Livermore as appropriate) and archived at a repository mutually approved by the jurisdiction and principal paleontologist.
- Consistent with Federal and State law, if fossils are discovered during grading, the principal paleontologist must be called to the site to develop a mitigation plan to protect those resources.
- All fossil specimens recovered as a result of mitigation, including those recovered as the result of processing rock or sediment samples, will be treated (i.e., prepared, identified,

curated, catalogued) in accordance with designated museum repository requirements. Rock or sediment samples will be submitted to commercial laboratories for microfossil, pollen, radiometric dating, or other analysis, as appropriate. The Project site lies in Alameda County. If paleontological specimens are encountered and collected at the site during mitigation, they become property of the County and should be properly curated at an approved facility (local to the Project location or a museum) and preserved for future research.

D. Disturb any human remains, including those interred outside of formal cemeteries.

No known human remains are located within the construction footprint. Pursuant to Section 7050.5 of the Health and Safety Code, if human remains are discovered, there shall be no further excavation or disturbance of the discovery site or any nearby area reasonably suspected to overlie adjacent human remains until the Project applicant has complied with the provisions of State CEQA Guidelines Section 15064.5(e). As the CEQA Lead Agency, the City of Dublin would be responsible for compliance with these regulations in their jurisdiction. As responsible agencies, the County and Livermore would be responsible for compliance within their jurisdictions. In general, these provisions require that the County Coroner be notified immediately.

If the remains are found to be Native American[4], the County Coroner is required to notify the NAHC within 24 hours. The most likely descendant of the deceased Native American is notified by the Commission and given the chance to make recommendations for the remains. If the Commission is unable to identify the most likely descendent, or if no recommendations are made within 24 hours, remains may be reinterred with appropriate dignity elsewhere on the property in a location not subject to further subsurface disturbance. If recommendations are made and not accepted, the NAHC will mediate the problem. With implementation of existing regulations, the impact would be **less than significant** and no mitigation is required.

E. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

[4] This includes any artifacts found with the remains, commonly referred to as "grave goods".

Impact CUL-4: The Project could result in damage to or destruction of unidentified buried tribal cultural resources as a result of grading and excavation during construction. **(Less than Significant with Mitigation)**

As described above, a Sacred Lands File search completed for the Project site and vicinity, as determined by the NAHC, did not identify any site, feature, place, cultural landscape, sacred place, or object with cultural value to Native American tribes. Consultation with the NAHC and with interested Native American individuals and groups under SB 18 and AB 52 has not resulted in any additional information about specific cultural resources or sacred sites within the Project site or surrounding areas. Therefore, the Project site is not considered to be of cultural value to a California Native American tribe, and construction of the Project would not impact any known tribal cultural resources as defined by CEQA.

However, the possibility remains that Project construction could uncover buried, previously unidentified objects with cultural value to California Native American tribes. This is a potentially significant impact. In the event that a tribal cultural resource is discovered during Project construction, **Mitigation Measure CUL-4** would be implemented. This mitigation measure requires a culturally-affiliated Native American with knowledge of tribal cultural resources to be present to monitor all ground disturbing activities. Should any tribal cultural resources be discovered, consultation with culturally-affiliated Native Americans is required to determine how to treat said resource. With the incorporation of **Mitigation Measure CUL-4**, this impact would be less than significant.

Mitigation for Impact CUL-4:

Mitigation Measure CUL-4: The following measures shall be implemented to ensure that any tribal cultural objects or items encountered during Project construction are properly identified and evaluated, and avoided or preserved.

- A culturally-affiliated Native American with knowledge of cultural resources shall be identified and agreed upon by the City of Dublin and local tribes listed by the NAHC and shall be present to monitor all ground-disturbing activities.
- If tribal cultural objects or items are encountered, the treatment of those objects or items shall be considered in coordination with culturally-affiliated Native Americans. If avoidance or preservation in place is preferred, avoidance or preservation in place will be completed where feasible and agreed upon by culturally-affiliated Native Americans and the local jurisdiction.
- Tribal cultural objects or items encountered during Project construction shall be treated with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.
- The disposition of recovered tribal cultural items that are not burial-associated shall be coordinated in consultation with culturally-affiliated Native Americans.

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and planned residential, commercial, and infrastructure development projects in Dublin, Livermore, and elsewhere around the study area (see **Chapter 4.0, Introduction to Environmental Analysis**).

The geographic extent of cumulative impacts to cultural resources is dependent on the resource under discussion. For example, a cumulative impact to a historic architectural district would extend across the district, while the cumulative impact to individual historic, archaeological, or paleontological resources may accumulate across Dublin or the County, depending on the nature of the resources.

As described above, the Project would not result in direct or indirect impacts to the one potential built historic resource within the historic APE. Past, present, and reasonably foreseeable future projects would be subject to the same federal and state regulations described above which require evaluation and protection of historic resources. Additionally, future projects would be required to conduct independent environmental analysis to evaluate direct and indirect impacts to historic resource. This would include appropriate mitigation if needed to address impacts to the built historic resource. None of the reasonably foreseeable projects listed in **Chapter 4.0, Introduction to Environmental Analysis** would have the potential to indirectly or directly impact the Collier Canyon Road site. One of the reasonably foreseeable projects, the Grand View Project, would have the potential to directly impact the Corral Site, should a portion of the Corral Site remain after implementation of the Project. Additional impacts to the Corral Site would be addressed in an independent environmental document prepared for the Grand View Project, ensuring that any remaining areas of the Corral Site are addressed through avoidance or mitigation measures. It is reasonably anticipated that with the application of appropriate mitigation measures, future impacts to the Corral Site would be less than significant. Impacts to the site as a whole in the cumulative scenario would reasonably be anticipated to be less than significant, as the Corral Site's value is in its potential to yield important scientific information related to historic-period archeology. Therefore, a cumulative impact would not occur. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact.

The Project, in combination with past, present, and reasonably foreseeable future projects, could result in cumulative impacts to historic-period archeological, archaeological, and paleontological resources as a result of damage to or destruction of these resources throughout Dublin as a result of future development. This could result in a loss of potential research information. However, projects located in archaeologically or paleontological sensitive areas would be subject to the same federal, state, and local regulation and policies as this Project, including independent environmental analysis under CEQA and appropriate mitigation if required. There are no known archeological or paleontological resources within the archeological APE which would be impacted by any reasonably foreseeable project. Therefore, a cumulative impact to paleontological and archeological resources would not occur. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact.

REFERENCES

Alameda County. 2000. East County Area Plan.
Available: https://www.acgov.org/cda/planning/generalplans/index.htm. Accessed: November 12, 2018.

City of Dublin. 2017. City of Dublin General Plan.
Available: https://www.dublin.ca.gov/DocumentCenter/View/10560/Chapter-12. Accessed: June 5, 2018.

City of Dublin. 1994. Eastern Dublin Specific Plan, Amended 2016.
Available: https://www.dublin.ca.gov/DocumentCenter/View/7776/EDSP-2016-Update-Full-PDF?bidId=. Accessed: November 28, 2018.

City of Livermore. 2004. City of Livermore General Plan 2003-2025. Amended December 2014.

National Parks Service. 2018. Criteria for Evaluation.
Available: https://www.nps.gov/nr/publications/bulletins/nrb34/nrb34_6.htm. Accessed: December 20, 2018.

5.5 GEOLOGY AND SOILS

INTRODUCTION

This section describes effects on geology and soils that would be caused by implementation of the Project. Information from the *Geotechnical Feasibility Study* prepared for the Project site in July 2018 (**Appendix F**)[1] was used to inform this section of the Draft Environmental Impact Report (EIR). The *Geotechnical Feasibility Study* evaluates the background geologic setting in the geologic study area and identifies potential geotechnical constraints that may impact implementation of the Project.

Scoping Issues Addressed

No public or agency comments related to geology or soils were received during the public scoping period for this Draft EIR.

REGULATORY SETTING

Federal

National Earthquake Hazards Reduction Program

The National Earthquake Hazards Reduction Program was established by the US Congress when it passed the Earthquake Hazards Reduction Act of 1977, Public Law 95–124. In establishing the National Earthquake Hazards Reduction Program, Congress recognized that earthquake-related losses could be reduced through improved design and construction methods and practices, land use controls and redevelopment, prediction techniques and early warning systems, coordinated emergency preparedness plans, and public education and involvement programs.

Several key federal agencies contribute to earthquake mitigation efforts. Implementation of National Earthquake Hazards Reduction Program priorities is accomplished primarily through original research, publications, and recommendations to assist and guide state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

State

California Code of Regulations

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, sets minimum requirements for building design and construction. The 2016 version of the California Building Standards Code is effective as of January 1, 2017. The California Building Standards Code is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes;

[1] Geocon Consultants, Inc. 2018. *Geotechincal Feasibility Study* – Dublin Boulevard Extension.

- Building standards that have been adopted and adapted from the national model code standards to meet California conditions; and
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns

Alquist-Priolo Earthquake Faulting Act

The California Legislature passed the Alquist-Priolo Earthquake Fault Zoning Act in 1972 to mitigate the hazard of surface faulting to structures. The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy astride the surface trace of active faults, and to require adequate structure setbacks from active faults.

Seismic Hazards Mapping Act

The Seismic Hazard Mapping Act was adopted by the California Legislature in 1990 to reduce public health and safety threats and to minimize property damage caused by earthquakes. The act directs the California Geological Survey to identify and map areas prone to earthquake hazards, such as liquefaction, earthquake induced landslides, and ground shaking. The act requires site-specific geotechnical investigations to identify potential seismic hazards and formulate mitigation measures prior to permitting most developments designed for human occupancy within seismic hazard zones.

Local

City of Dublin

City of Dublin General Plan

The Dublin General Plan, Chapter 8, Environmental Resources Management: Seismic Safety & Safety Element requires that safety measures are implemented to protect the community from any unreasonable risk associated with the effects of seismically induced ground rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction and other seismic and geologic hazards; flooding; and wildland and urban fires.[2] Notably, Implementing Policy 8.2.1.B.1 identifies the following structural and grading requirements:

a) All structures shall be designed to the standards delineated in the Dublin Building Code and Dublin's Grading Ordinance. A "design earthquake" shall be established by an engineering geologist for each structure for which ground shaking is a significant design factor.

[2] City of Dublin, 2017. City of Dublin General Plan. Available: https://www.dublin.ca.gov/DocumentCenter/View/10560/Chapter-12. Accessed: June 5, 2018.

b) Generally, facilities should not be built astride potential rupture zones, although certain low-risk facilities may be considered. Critical facilities that must cross a fault, such as oil, gas, and water lines, shall be designed to accommodate the maximum expected offset from fault rupture. Site specific evaluations shall determine the maximum credible offset.

City of Dublin Municipal Code

The Dublin Municipal Code is a compilation of the applicable ordinances of a municipality, and sets forth Dublin's laws. Chapter 7.16, Grading Regulations, ensures the intended use of a graded site is consistent with the General Plan, any adopted specific plans, and applicable city ordinances, including the zoning ordinance.[3]

Eastern Dublin Specific Plan

Eastern Dublin Specific Plan (EDSP) Section 6.4.1, Geology, Soils, and Grading discusses slope stability, erosion, and relevant policies. The EDSP describes the north-eastern portion of the specific plan study area as particularly susceptible to slope instability and rates potential damage to future development improvements as high unless mitigated. The policies included in the EDSP define the acceptable slope percentages that structures may be built upon and defines at what slope percentages limited grading and repair of landslides is permitted. It also requires new development to provide effective control of soil erosion during construction activities and when altering site drainage characteristics.

Alameda County

Alameda County Safety Element

The Alameda County Safety Element provides regulatory guidance to resolve development issues that arise from known or previously unknown hazards.[4] Chapter 1.2, Seismic/Geologic Hazards, includes descriptive information, analysis and policies pertaining to geologic, seismic, flood and fire hazards within the County. The focus of the Safety Element is to minimize human injury, loss of life, property damage, and economic and social dislocation due to natural and human-made hazards.

Alameda County General Ordinance Code

The Alameda County General Ordinance Code, Chapter 15.36, Grading, Erosion and Sediment Control, regulates grading on private property within unincorporated areas of the county. [5] This Code is intended to:

- Safeguard individuals, property, and public welfare;
- Avoid pollution of watercourses with nutrients, sediments, or other earthen materials generated on or caused by surface runoff on or across the permit area

[3] City of Dublin, 2017. Dublin Municipal Code, Ch. 7.16 Grading Regulations. Available: https://www.codepublishing.com/CA/Dublin/?Dublin09/Dublin0912.html&?f. Accessed: June 5, 2018.
[4] Alameda County Community Development Agency. 2013. Alameda County Safety Element. Amended 2014.
[5] Alameda County Community Development Agency. 2013. Alameda County Safety Element. Amended 2014.

- Ensure that the intended use of a graded site is consistent with the County General Plan, any adopted specific plans, and applicable county ordinances including the zoning ordinance.

Alameda County General Plan, East County Area Plan

The East County Area Plan includes goals and policies pertaining to soil and slope stability, seismicity, and geologic hazards. The following goals and policies apply to the Project:

Goal: To minimize the risks to lives and property due to soil and slope instability hazards.

Policy 307: The County shall encourage Zone 7, cities, and agricultural groundwater users to limit the withdrawal of groundwater in order to minimize the potential for land subsidence.

Policy 308: The County shall not permit development within any area outside the Urban Growth Boundary exceeding 25 percent slopes to minimize hazards associated with slope instability.

Goal: To minimize the risks to lives and property due to seismic and geologic hazards.

Policy 309: The County shall not approve new development in areas with potential for seismic and geologic hazards unless the County can determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis. The County shall review new development proposals in terms of the risk caused by seismic and geologic activity.

Policy 310: The County, prior to approving new development, shall evaluate the degree to which the development could result in loss of lives or property, both within the development and beyond its boundaries, in the event of a natural disaster.

Policy 312: The County shall ensure that major transportation facilities and pipelines are designed, to the extent feasible, to avoid or minimize crossings of active fault traces and to accommodate fault displacement without major damage that could result in long-term disruption of service.

City of Livermore

City of Livermore General Plan

Livermore's General Plan, Public Safety Element, provides information about risks in Livermore due to natural and created hazards.[6] Its policies are designed to protect the community as much as possible from seismic, flood, geologic and wildfire hazards. This element establishes mechanisms to reduce death, injuries, damage to property and to address the negative results from public safety hazards like flooding, fires and seismic events. Said mechanisms are highlighted in the policies and ordinances that are required of development. Policy Objective PS-1.1 of the Livermore General

[6] City of Livermore. 2004. City of Livermore General Plan 2003-2025. Amended December 2014.

Plan's Public Safety element includes policies for new land development in order to prevent the creation of new geologic hazards. Policies under this objective that are relevant to the Project are outlined below

Policy P1. Urban development within earthquake fault zones and areas of high landslide susceptibility, shown in Figure 10-3, shall be conditioned upon the preparation of site-specific geotechnical investigations.

Policy P2. The City shall rely on the most current and comprehensive geologic hazard mapping available to assist in the evaluation of potential seismic hazards associated with proposed new development. Projects proposed in areas identified as being subject to moderate or high geologic hazard shall be required to conduct site-specific geotechnical investigation.

Policy P3. No structure proposed for human occupancy shall be placed across the trace of any active or potentially active fault within the Planning Area. The Greenville fault and Las Positas fault shall be assumed active, and the Livermore fault shall be assumed potentially active, unless and until proven otherwise.

Policy P4. Geologic and engineering studies shall be required for all proposed building projects, per State law, and all critical facilities (schools, hospitals, fire and police stations) within the City so that these facilities can be constructed in a manner that mitigates site-specific geotechnical challenges and will minimize the risk to the public from seismic hazards.

Policy P5. Construction shall be prohibited in areas with severe erosion (slopes over 10 percent), as mapped by the USDA's Natural Resources Conservation Service, unless it can be clearly demonstrated through geotechnical engineering analysis that the project will not contribute to increased erosion, sedimentation or runoff.

Policy P6. Development shall be prohibited in areas susceptible to slope failure (defined as landslide susceptibility areas 3 and 4 on Figure 10-3 or current hazard mapping), per State law, unless site-specific geotechnical investigation indicates that landslide hazards can be effectively mitigated.

Policy P7. Prohibit development on expansive soils which are subject to a high probability of sliding; developments proposed below areas of expansive soils in foothill areas shall be conditioned to avoid damage from potential slide areas.

EXISTING CONDITIONS

Geologic and seismic information for this section is provided in the *Geotechnical Feasibility Study* prepared for the Project (see **Appendix F** of this Draft EIR). The *Geotechnical Feasibility Study* includes relevant information published in geologic maps, aerial photographs, Project plans, in-house documents, and other literature pertaining to faulting hazards. The *Geotechnical Feasibility Study* also included a field reconnaissance to observe the existing conditions at the site. The *Geotechnical Feasibility Study includes* evaluation of geologic features including topography, hydrology, subsurface soils, geologic hazards, and seismic hazards. The geologic study area includes the Project site and areas in its immediate vicinity that could contain geological features or hazards that influence the Project site.

Geologic Setting

The study area is located in the Livermore-Amador Valley, a valley in eastern Alameda County bounded by the foothills of the Diablo Range on the north, east, and south. This range is part of the northwest-trending Coast Ranges Geomorphic Province of mountain ranges and valleys that trend northwest, parallel to the San Andreas Fault. The ranges have been intensely uplifted, folded, and faulted.[7]

The diverse geologic conditions underlying the Livermore-Amador Valley and greater San Francisco Bay Area (Bay Area) are largely defined by the network of major active faults that occur within the region. The San Andreas Fault System is one of the most prominent geologic features in the region; it includes several major fault zones (San Andreas, Hayward, and Calaveras) as well as smaller active and potentially active faults.

The geologic units which comprise the study area consist of Quaternary alluvium, a mixture of loose rocks and loosely consolidated deposits composed of sandstone, shale, and gravel (also known as Livermore Gravel).[8,9] The Quaternary period refers to the current period of geologic time, which began 1.8 million years ago.[10]

The climate in Alameda County is characterized by warm, dry summers and mild, wet winters. Average annual precipitation is 14.18 inches. Cottonwood Creek, the only waterway within the study area, crosses the Project site flowing north-to-southwest direction and discharges into Arroyo Mocho just south of Interstate 580 (I-580). Historic high groundwater levels in the study area range from 10 to 39 feet below ground level. Shallower groundwater levels may

[7] Bay Area Rapid Transit Agency, 2017. BART to Livermore Extension Project EIR, Chapter G: Geology, Soils, Seismicity, Mineral, and Paleontological Resources. Available: http://www.bart.gov/sites/default/files/docs/BLVX%20DEIR_Vol%201_0_Cover-TOC.pdf. Accessed November 13, 2018.
[8] Bay Area Rapid Transit Agency, 2017.
[9] USGS. 2018b. California Geologic Map Data. Available: https://mrdata.usgs.gov/geology/state/map-us.html#home. Accessed: June 5, 2018.
[10] USGS. 2006. What is the Quaternary? Available: https://geomaps.wr.usgs.gov/sfgeo/quaternary/stories/what_is.html. Accessed: June 4, 2018.

be present throughout the Project site, particularly at the Cottonwood Creek crossing. Refer to **Appendix F** for additional detailed information about climate, hydrology, and groundwater throughout the study area.

The Project site slopes slightly downward toward the south and features elevations ranging from approximately 370 to 415 feet above mean sea level (AMSL). No natural landmarks or other major geologic features, such as scenic rock outcroppings, occur within the study area.

The *Water Quality Report*[11] includes a Natural Resources Conservation Service (NRCS) Web Soil Survey to identify soils underlying the Project site. The predominant soils within Project site are Diablo Clay[12] and Linne Clay Loam[13]. Soils beneath Cottonwood Creek are Clear Lake Clay[14]. All three soil types have a slow infiltration rate and high runoff potential when thoroughly wet.[15]

Geologic Hazards

Geologic hazards include soil erosion, subsidence, expansive soils, corrosive soils, landslides, and volcanic hazards. These hazards are explained below.

Soil Erosion

Erosion is the detachment and movement of soil material by natural processes, such as wind and water. During a rain event, the rate of soil erosion is dependent on the slope, vegetative cover, and soil properties. Texture, structure, organic matter content, and permeability are specific soil properties that influence the rate of soil erosion. The NRCS Web Soil Survey conducted for the Project indicates soils within the study area have low erosion potential.

Subsidence

Subsidence is the settlement of organic soils and saturated mineral soils of low density following drainage of water out of the soils. According to the U.S. Geological Survey (USGS), the study area is not susceptible to subsidence.[16]

Expansive Soils

Expansive soils have the potential to shrink or swell depending on the moisture content of the soil. This potential for shrinking and swelling is dictated partially by the amount and type of clay

[11] BKF, 2018. Water Quality Report - Dublin Boulevard-North Canyons Parkway Extension Project.
[12] Diablo clay is a soil included in the Diablo series of soils, which generally consist of deep to moderately deep, well-drained, clayey soils on rolling to very steep uplands north and west of the Livermore Valley.
[13] Linne Clay Loam is a soil included in the Linne series of soils, which consist of well-drained, shallow to deep, calcareous soils on rolling to very steep uplands north and east of the Livermore Valley. Linne soils are formed from soft, calcareous, interbedded shale and fine-grained sandstone.
[14] Clear Lake Clay is a soil from the Clear Lake Series. Soils in the Clear Lake series consist of deep, moderately well-drained and imperfectly drained, clayey soils in nearly level basins in the Livermore and Amador Valleys.
[15] The infiltration rate is the velocity or speed at which water enters into the soil. It is usually measured by the depth of the water layer that can enter the soil in one hour.
[16] USGS. 2018a. Areas of Land Subsidence in California. Available: https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html. Accessed: June 4, 2018.

materials present and is measured by finding the percent change of the soil volume. Highly expansive soils present a significant risk to buildings and infrastructure. Expansive soils are common in the Livermore Valley, particularly in soils with high clay content, and may be present at the Project site. As mentioned above, clayey soils such as Diablo Clay, Linne Clay Loam, and Clear Lake Clay were identified on the Project site, and these soils could exhibit expansive properties.[17] Therefore expansive soils have the potential to be present on the Project site.

Corrosive Soils

Various properties of soil, such as moisture content, texture, acidity, electrical conductivity, and sulfate or sodium content can cause soils to corrode uncoated subsurface steel and concrete structures. Over time, the corrosion could weaken the materials, resulting in fatigue and eventual failure of steel or concrete materials. Soil corrosivity is not a visually discernable characteristic and soil sampling and testing to evaluate soil corrosion parameters have not been performed. Though soil sampling to test for corrosive soils has not been performed, clayey soils, such as the soils found on the Project site, are considered to have a high corrosion potential. Therefore, the Project site has the potential for corrosive soils.

Landslides

Landslides are classified as either rapid movement of large amounts of soil or imperceptibly slow movement of soils on slopes. Areas with landslide potential generally have steeper slopes than the soil or rock material forming the slope can support. Topographic variability within the study area suggests history of landslide activity. Landslide susceptibility is prevalent in the hills north of the study area, outside of the Project site. The southern portion of the study area (bordering I-580) is relatively flat with little to no susceptibility to landslides. However, according to the Landslide Inventory Map, there is evidence of previous landslides north of the Project site.[18]

Tsunamis and Seiches

Tsunamis are large sea waves caused by submarine earthquakes, landslides, or volcanic eruptions. A seiche is defined as a wave oscillation on the surface of water in an enclosed basin, such as a lake, which can occur as a result of seismic activity. There is no potential for tsunamis and/or seiches to occur within the study area due to the significant distance between the Project site and the San Francisco Bay (18 miles). Further, the Project site is 370 to 415 feet AMSL, and would therefore have reduced potential to be at risk of tsunamis and seiches, as water would need to climb a significant elevation over a significant distance to reach the Project. No other water bodies near the Project site are large enough to experience a seiche event. These features are considered either too distant or small to create a hazard at the Project site, and are not discussed further in this Draft EIR.

[17] San Francisco Bay Area Rapid Transit District. 2018. BART to Livermore Extension Project Environmental Impact Report.
[18] USGS. 2010. Landslide Inventory Map of Livermore Quadrangle Alameda and Contra Costa Counties, California. Available: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/lsim/LSIM_Livermore.pdf. Accessed: June 4, 2018.

Volcanic Hazards

The closest volcano to the study area is Clear Lake Volcanic Field, located approximately 132 miles away from the Project. This feature is considered too distant to create a hazard at the Project site and therefore is not discussed further within this Draft EIR.

Seismic Hazards

Geologists and seismologists recognize the Bay Area as one of the most seismically-active regions in the United States. The significant earthquakes that occur in the Bay Area are typically associated with movements along well-defined active fault zones that generally trend in a northwesterly direction. **Table 5.5-1** presents approximate distances from the Project site to nearby active faults. Faults in these table and many others in the Bay Area are sources of potential ground motion. However, earthquakes that might occur on other faults within northern California area are also potential generators of significant ground motion and could cause ground shaking at the site.

The site is not located within an Alquist-Priolo Earthquake Fault Zone. A field reconnaissance and review of Caltrans' statewide fault database conducted in 2018 for the *Geotechnical Feasibility Study* did not reveal evidence of active faulting through or near the site.

The Association of Bay Area Governments identifies the Mount Diablo Thrust Fault as the most active thrust fault in the Bay Area.[19] The Caltrans fault database dates the Mt. Diablo Thrust Fault as Late Quaternary age (0.5-1.0 million years) and places the fault approximately 1.75 miles north of the Project site. However, the *Geotechnical Feasibility Study* states that other geologic references place the inferred location of Mt. Diablo Thrust Fault within the Project site, west of Cottonwood Creek.

According to a study of earthquake probabilities for the San Francisco Bay Region conducted by the USGS Working Group of California Earthquake Probabilities, the Mount Diablo Thrust Fault is capable of generating a magnitude 6.7 or greater earthquake with an estimated 3 percent probability of occurrence over the next 30 years. Buried thrust faults typically have fault planes that extend under a wide area and are extremely difficult to identify and characterize. Consequently, regulations such as the Alquist-Priolo Earthquake Fault Zoning Act have not been applied to the Mount Diablo Thrust Fault.[20]

[19] A thrust fault is a break in the Earth's crust, across which older rocks are pushed above younger rocks. It is a dip-slip fault in which the upper block, above the fault plane, moves up and over the lower block. This type of faulting is common in areas of compression, such as regions where one plate is being subducted under another. When the dip angle is shallow, a reverse fault is often described as a thrust fault. (USGS)
[20] Bay Area Rapid Transit Agency, 2017.

Table 5.5-1 Regional Fault Summary

Fault Name	Approximate Distance to Nearest Portion of Project Site (miles)	Maximum Earthquake Magnitude, M_w	Fault Age
Mt. Diablo Thrust	1 ¾	6.7	Late Quaternary (0.5-1.0 million years ago)
Pleasanton	3 ¾	6.6	Holocene (within the last 11,000 years)
Las Positas	5 ½	6.4	Holocene (within the last 11,000 years)
Calaveras (North)	5 ½	6.9	Holocene (within the last 11,000 years)

Source: BKF, 2018

Surface Fault Rupture

During an earthquake, surface rupture occurs when the ground surface is broken as a result of fault movement. Surface rupture is an offset of the ground surface and is mostly found to occur along active fault traces. As noted above, an inferred location of the Mt. Diablo Thrust crosses the Project site near Cottonwood Creek.

Seismic Ground Shaking

During a seismic event, all aspects of motion of the earth's surface caused by the earthquake are generally referred to as seismic ground shaking. Ground shaking is normally the predominant cause of damage during earthquakes, and the extent of the ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. Faults identified in **Table 5.5-1** and many others in the Bay Area are sources of potential ground motion. However, earthquakes that might occur on other faults within northern California area are also potential generators of significant ground motion and could cause ground shaking at the site.

Liquefaction

Liquefaction is a phenomenon in which loose, saturated, and low-cohesion soils beneath the groundwater table lose strength during strong ground motions. Primary factors controlling liquefaction include intensity and duration of ground motion, the subsurface soil characteristics, stress conditions, and depth to groundwater.[21] Most of the study area has a low susceptibility to liquefaction, except for the Cottonwood Creek area which has very high liquefaction susceptibility.[22]

[21] Geological stress conditions refer to the force per unit area that is placed on a rock. There are four types of stresses: confining stress, compressions, tension, and shear. Stress can result in fracture or deformation of the rock, and are seismic hazards.
[22] Geocon Consultants, 2018.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for geology and soils were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of impacts related to the Project.

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria:

A. Result in soils that are unable to support an on-site wastewater disposal system (septic)

B. Expose people or structures to potential risk of loss or injury where there is high potential for seismically induced ground shaking, landslides, liquefaction, settlement, lateral spreading, and/or surface cracking

C. Expose people or structures to potential risk of loss or injury where there is high potential for earthquake-related ground rupture near major fault crossings

D. Result in triggering or acceleration of geologic processes, such as landslides, substantial soil erosion, or loss of topsoil during construction

E. Expose people or structures to potential risk of loss or injury where corrosive, expansive or other unsuitable soils are present

Methodology

To determine potential impacts, the impact significance criteria identified above were applied to construction and operation of the Project.

Impact Analysis

No Impact Summary

A. A: Result in soils that are unable to support an on-site wastewater disposal system (septic)

No septic systems are proposed, and construction and operation of the Project would not require the use of a wastewater disposal system. Therefore, no impact would occur.

Impacts of the Project

B. Expose people or structures to potential risk of loss or injury where there is high potential for seismically induced ground shaking, landslides, liquefaction, settlement, lateral spreading, and/or surface cracking

Impact GEO-1: People and structures may be exposed to risks associated with slope stability, liquefaction, and seismically-induced settlement at or near Project site. **(Less than Significant with Mitigation)**

Slope Stability

The Project would include cuts and fills throughout the Project site which, if not inclined properly, could lack adequate preventative slope stability safety measures. Furthermore, fill slopes constructed of predominantly clayey materials can be prone to surficial slumping, especially when not properly vegetated after grading operations. If existing clayey soils on the Project site would be reused for fill, they could cause slope instability. This represents a potentially significant impact. The design-level geotechnical report required by **Mitigation Measure GEO-1** (described below) would convey the need for selective grading provisions to mitigate the potential for clayey materials in fill slopes. In addition, the design-level geotechnical report will evaluate the suitability of existing soils for re-use as fill material based on the soil characteristics. With implementation of **Mitigation Measure GEO-1**, this impact would be less than significant.

Liquefaction and Seismically-Induced Settlement

Although most of the Project site exhibits low liquefaction susceptibility, the Cottonwood Creek drainage exhibits very high liquefaction susceptibility. This represents a potentially significant impact. The design-level geotechnical report required by **Mitigation Measure GEO-1** shall evaluate liquefaction potential at Cottonwood Creek and recommend foundation designs to reduce liquefaction hazards. Specifically, the design-level geotechnical report would determine the need for foundation elements deeper than those required for structural loading purposes. Therefore, the mitigation measure would effectively determine the extent of the liquefaction hazard and implement a foundation design to counter liquefaction hazards, reducing the risk from liquefaction and settlement. With implementation of **Mitigation Measure GEO-1**, this impact would be less than significant. Additionally, **Mitigation Measure GEO-1** would reduce impacts caused by corrosive soils, expansive soils, and erosion as discussed under **Impact GEO-2** and **Impact GEO-3** below.

Mitigation for Impact GEO-1

> **Mitigation Measure GEO-1:** As part of the final design phase, preparation of a design-level geotechnical and geologic report will be required and will include subsurface field work and laboratory testing. Site specific subsurface soil conditions and slope stabilities within the Project site will be verified during the preparation of this report to determine the appropriate final design for the Project. Recommendations from the design-level report will be incorporated into the Project design.
>
> Future subsurface exploration will include soil borings at approximate 500-foot intervals along the roadway extension. Soil borings will determine the geologic stability of soils underlying the Project site. In addition, borings will specifically be performed for cut slopes over 8 feet, at retaining wall locations, at bridge support locations, and at culvert crossing locations. Additional borings may be necessary for other Project components, at the

discretion of the City of Dublin or the Responsible Agency in their jurisdiction and on the recommendation of professionally qualified specialists. The field investigation will consider Project design details to provide design recommendations. Key considerations shall include the following:

- *Liquefaction.* The design-level geotechnical report shall evaluate liquefaction potential at the Cottonwood Creek crossing to determine the need for foundation elements deeper than those required for structural loading purposes.
- *Slope Stability.* The Project would include cuts and fills throughout the Project site. Cut/fill slopes will be addressed in the design-level geotechnical report to evaluate the need for selective grading provisions to mitigate the potential for clayey materials in fill slopes, which could create slope stability issues. Selective grading provisions, if necessary, will avoid this risk. In addition, the design-level geotechnical report will also evaluate the suitability of existing soils for re-use as fill material. If soils are not suitable to use as fill material, imported fill will be used where needed to ensure stability.
- *Corrosive Soils.* The design-level geotechnical report will investigate for the presence of corrosive soils within the Project site. If corrosive soils are identified at locations where new subsurface facilities are proposed (e.g. bridge foundations, culverts, etc.) specially coated rebar, or alternative pipe culverts will be specified in the contract documents.
- *Expansive Soils.* The design-level geotechnical report will investigate for the presence of expansive soils within the Project site. Depending on the extent of expansive soils and level of expansion potential, supplemental design measures such as lime-treatment, selective grading, or select import fill materials may be necessary.
- *Erosion Potential.* The design-level geotechnical report will characterize the risk of increased erosion as a result of topography, soil characteristics, and Project design.

Less than Significant Impacts

Subsidence

According to the USGS, the study area is not susceptible to subsidence.[23] This impact would be **less than significant**.

[23] USGS, 2018a.

Landslides

Based on geologic mapping, existing landslide distribution, and overall flatness of the Project site, existing landslides hazards would not endanger future users of the Project. The distance between the Project site and the more steeply inclined hills to the north makes the overall risk of landslide at the Project site low. This impact would be **less than significant**.

Groundshaking

The Project site is in proximity to several faults that, during a seismic event, would cause seismic ground shaking. Potential seismic ground shaking hazards would be minimized through application of the Dublin General Plan Implementing Policy 8.2.1.B.1, which requires adherence to structural standards delineated in the Dublin Building Code and Dublin's Grading Ordinance based on a "design earthquake" event for each structure for which ground shaking is a significant design factor. Compliance with the California Building Code is required. The Project would also apply the California Uniform Building Code, as recommended in the Livermore General Plan. Further, Policy 315 of the Alameda County East County Area Plan requires that buildings be designed and constructed to withstand groundshaking forces of a minor earthquake without damage, a moderate earthquake without structural damage, and a major earthquake without collapse of the structure. With implementation of these design criteria, the Project would not expose people or structure to adverse risks associated with seismic ground shaking, and this impact would be **less than significant**.

C. Expose people or structures to potential risk of loss or injury where there is high potential for earthquake-related ground rupture near major fault crossings

There are no Alquist-Priolo zones in the Project vicinity. However, the Project would cross the inferred location of Mt. Diablo Thrust Fault west of Cottonwood Creek. Linear features, such as a roadway or bridge, spanning a surface fault could become offset or deformed during a surface rupture. Therefore, the Project could experience surface fault rupture associated with the Mt. Diablo Thrust.

Although the Project could be susceptible to surface fault rupture at the Mt. Diablo Thrust, this fault is not a major safety consideration for the Project. As a generally linear, flat transportation structure, the Project would not be used for human occupancy, so life hazards would be limited. Potential displacement of the roadway alignment could interfere with roadway operations, but would not cause collapse since the majority of the Project is not elevated. The Cottonwood Creek bridge, however, could be subject to collapse in the event of a surface fault rupture, if not properly designed.

As mentioned above, Implementing Policy 8.2.1.B.1 (a) of the Dublin General Plan requires adherence to structural design standards delineated in the Dublin Building Code and Dublin's Grading Ordinance. Compliance with the California Building Code is required. The project would also apply the California Uniform Building Code, as recommended in the Livermore General Plan. Additionally, Policy 315 of the Alameda County East County Area Plan, which requires that buildings be designed and constructed to withstand groundshaking forces of a minor earthquake

without damage, a moderate earthquake without structural damage, and a major earthquake without collapse of the structure. As required by these local regulations, a "design earthquake" shall be established by an engineering geologist for the roadway and bridge over Cottonwood Creek. In addition, Implementing Policy 8.2.1.B.1 (b) of the Dublin General Plan requires site-specific evaluations to determine the maximum credible fault offset, which would be accommodated into Project design. Adherence to these policies would ensure that the proposed roadway alignment and bridge are designed within acceptable margins of safety with regards to surface fault hazards. This impact would be **less than significant**.

D. Result in triggering or acceleration of geologic processes, such as landslides, substantial soil erosion, or loss of topsoil during construction

Impact GEO-2: The Project may result in soil erosion or loss of topsoil during construction. **(Less than Significant with Mitigation)**

The potential for Project construction to result in substantial erosion or loss of topsoil is described in **Section 5.8, Hydrology and Water Quality**. Project construction would involve grading and paving activities that could result in erosion and sedimentation. This is a potentially significant impact. Projects involving construction on sites that are 1 acre or more are required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) that specifies how the water quality will be protected during construction. These measures include, but are not limited to:

- Design and construction of cut and fill slopes in a manner that will minimize erosion
- Protection of exposed slope areas
- Control of surface water flows over exposed soils
- Limiting soil excavation in high winds
- Construction of berms and runoff diversion ditches
- Use of sediment traps, such as fiber rolls.

As stated above, **Mitigation Measure GEO-1** would include the preparation of a design-level geotechnical report as part of the final design phase that would include subsurface field work and laboratory testing of soil samples. Site specific subsurface soil conditions (including erosion potential) and slope stabilities within the Project site will be verified during the preparation of this report to determine the appropriate final design for the Project. The design-level geotechnical report would characterize the risk of increased erosion as a result of topography, soil characteristics, and Project design. Recommendations from the design-level report would be incorporated into the Project design. With implementation of **Mitigation Measure GEO-1** and a SWPPP, which would reduce erosion potential, this impact would be less than significant.

Mitigation for Impact GEO-2

Mitigation Measure GEO-1 (described above)

Less than Significant Impacts

As discussed above under Existing Conditions, the Project site is not at risk for landslides. As an at-grade roadway Project that would not be placed on unstable slopes, the Project would not exacerbate an existing hazard in relation to landslides. This impact would be **less than significant**.

E. Expose people or structures to potential risk of loss or injury where corrosive, expansive or other unsuitable soils are present

Impact GEO-3: With implementation of the Project, roadway users and the new Cottonwood Creek bridge may be exposed to risks associated with corrosive, expansive, or other unsuitable soils. **(Less than Significant with Mitigation)**

Roadway and bridge infrastructure built atop expansive soils can experience damage when changes in moisture cause soils to shrink and swell. Similarly, bridge footings could be subject to corrosion if placed in corrosive soils. This could indirectly lead to unsafe conditions for travelers on the roadway and bridge structure.

Soil sampling and testing to evaluate the presence or absence of corrosive or expansive soils has not yet been performed within the study area. However, clayey soils, such as those found on the Project site, have the potential to exhibit expansive and corrosive properties. Therefore, the risk of potential loss or injury from the effect of expansive or corrosive soils has the potential to occur. The design-level geotechnical report required by **Mitigation Measure GEO-1** would investigate for the presence of expansive and corrosive soils within the Project site. Depending on the extent of expansive soils and level of expansion potential, design recommendations such as lime-treatment, selective grading or select import fill materials may be necessary and would be documented in the design-level geotechnical report. Design recommendations from the design-level geotechnical report would be incorporated into the final Project design. These design recommendations would reduce the potential for risk associated with expansive and/or corrosive soils. Therefore, with application of **Mitigation Measure GEO-1**, this impact would be less than significant.

Mitigation for Impact GEO-3

Mitigation Measure GEO-1 (described above)

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and planned residential, commercial, and infrastructure development projects in Dublin, Livermore, and elsewhere around the study area (see **Chapter 4.0, Introduction to Environmental Analysis**).

Because geologic impacts are site-specific and highly dependent upon the structural characteristics of individual projects, cumulative geologic hazard and soils impacts are generally confined to the Project site and immediate vicinity.

Most geologic-related impacts from development, if properly designed, would not result in worsening of the environment or public health and safety. Pursuant to Implementing Policy 8.2.1 (b) of Dublin's General Plan, future development would be subject to review by a registered geotechnical engineer. Geotechnical and soils reports for individual projects would include investigation of site-specific conditions and provide design recommendations to minimize exposure to geologic and soils-related risks. Similarly, Policy Objective PS-1.1 of the Livermore General Plan's Public Safety element includes policies for new land development in order to prevent the creation of new geologic hazards. Policies P1 through P7 under this Objective outline specific requirements of new developments. Policy 309 in the Alameda County East County Area Plan stipulates the County will not approve new development in areas with potential for seismic and geologic hazards unless the County can determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis.

Cumulative development would also involve the exposure of an increased number of people and/or structures to risk of earthquakes and their associated geologic hazards. New construction would be required to comply with the most current California Building Code, which establishes building standards to minimize risk based on the geologic and seismic conditions of the region in which a Project is located.

With administration of these requirements, the incorporation of **Mitigation Measure GEO-1**, and adherence to the California Building Code, the Project would not have a cumulatively considerable contribution to cumulative geologic and soils impacts.

REFERENCES

Alameda County Community Development Agency. 2013. Alameda County Safety Element. Amended 2014.

Alameda County. 2018. Alameda County, California - Municipal Code, Ch. 15.36, Grading, Erosion and Sediment Control. Available: https://library.municode.com/ca/alameda_county/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.36GRERSECO. Accessed: June 5, 2018.

BKF. 2018. Water Quality Report - Dublin Boulevard-North Canyons Parkway Extension Project.

City of Dublin. 2017. City of Dublin General Plan. Available: https://www.dublin.ca.gov/DocumentCenter/View/10560/Chapter-12. Accessed: June 5, 2018.

City of Dublin. 2017. Dublin Municipal Code, Ch. 7.16 Grading Regulations. Available: https://www.codepublishing.com/CA/Dublin/?Dublin09/Dublin0912.html&?f. Accessed: June 5, 2018.

City of Livermore. 2004. City of Livermore General Plan 2003-2025. Amended December 2014.

Geocon Consultants, Inc. 2018. Geotechnical Feasibility Study – Dublin Boulevard Extension.

San Francisco Bay Area Rapid Transit District. 2018. BART to Livermore Extension Project Environmental Impact Report.

USGS. 2006. What is the Quaternary? Available: https://geomaps.wr.usgs.gov/sfgeo/quaternary/stories/what_is.html. Accessed: June 4, 2018.

USGS. 2010. Landslide Inventory Map of Livermore Quadrangle Alameda and Contra Costa Counties, California. Available: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/lsim/LSIM_Livermore.pdf. Accessed: June 4, 2018.

USGS. 2018a. Areas of Land Subsidence in California. Available: https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html. Accessed: June 4, 2018.

USGS. 2018b. California Geologic Map Data. Available: https://mrdata.usgs.gov/geology/state/map-us.html#home. Accessed: June 5, 2018.

5.6 GREENHOUSE GAS EMISSIONS

INTRODUCTION

This section discusses the Project's impacts on climate change and greenhouse gas (GHG) emissions, both during construction and operation. Information in this section is primarily drawn from the *Air Quality and Greenhouse Gas Assessment* prepared for the Project (see **Appendix C** of this Draft Environmental Impact Report (EIR)). Additionally, information in this section is based on VMT data prepared by Kittelson & Associates in 2018. VMT data for the Project is available on file with the City of Dublin at 100 Civic Plaza, Dublin, California. Air Quality impacts are covered in **Section 5.2, Air Quality**.

Scoping Issues Addressed

No public or agency comments related to climate change or GHG emissions were received during the public scoping period for this Draft EIR.

REGULATORY SETTING

Federal

U.S. Environmental Protection Agency Endangerment Finding
In the Supreme Court decision in Massachusetts v. U.S. Environmental Protection Agency (EPA) (2007), the US Supreme Court ruled that GHGs meet the definition of air pollutants under the Clean Air Act. Given this, the Supreme Court ruled that GHGs must be regulated if such gases could be reasonably anticipated to endanger public health or welfare. Following to Court's ruling, the U.S. EPA finalized an endangerment finding in December 2009. The Endangerment finding stated that the following GHGs constituted a threat to public health: carbon dioxide ($C0_2$), methane (CH_4), nitrous oxide (NO_x), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

State

Agencies at the international, national, State, and local levels are considering strategies to control emissions of gases that contribute to global warming. There is no comprehensive strategy that is being implemented on a global scale that addresses climate change; however, in California a multi-agency "Climate Action Team," has identified a range of strategies.

Assembly Bill 32
Assembly Bill 32 (AB 32), also known as the California Global Warming Solutions Act of 2006, was the first program in the county to take a comprehensive, long-term approach to addressing climate change. AB 32 requires the state to reduce its GHG emissions to 1990 levels by 2020 – a reduction of approximately 15 percent below emissions expected under a "business as usual" scenario. Due to the serious threat global warming poses to economic well-being, public health, natural resources, and the environment of California, the California Air Resources Board (CARB) must adopt regulations to achieve the highest and most cost-effective GHG emission reductions feasible.

Senate Bill 375

In September 30, 2008, the Governor signed Senate Bill 375 (SB 375) into legislation. SB 375 requires CARB to set regional targets for reducing GHGs. This includes the maintenance of guidelines for travel demand models used in the development of regional transportation plans (RTPs). RTPs are established by metropolitan planning organizations (MPOs). The core provision of the SB 375 requires regional transportation agencies to develop a Sustainable Communities Strategy (SCS) as part of its RTP. The SCS must outline the region's plan for combining transportation resources, such as roads and mass transit, with a realistic land use pattern, in order to meet the state target for reducing GHG emissions.

Plan Bay Area

As discussed above, SB 375 requires the Bay Area regional planning agencies to establish a SCS to reduce GHG emissions through land use and transportation planning. The primary GHG reduction called for in the SCS is reduced tailpipe emissions from light-duty vehicles, in other words, reduced emissions from traffic. Plan Bay Area 2040 is the most recent version of the SCS and includes the implementation of transportation projects and a Climate Initiatives Program that together would result in GHG emission reductions from light-duty vehicles that meet the region's GHG reduction targets, per SB 375. The Project, being part of the 2019 Transportation Improvement Program (TIP) is part of the Plan Bay Area 2040 transportation network.

Executive Order B-30-15 and Senate Bill 350

In April 2015, the Governor issued Executive Order B-30-15, which established a GHG reduction target of 40 percent below 1990 levels by 2030. SB 350 advanced these goals through two measures. First, the law increases the renewable power goal from 33 percent renewables by 2020 to 50 percent by 2030. Second, the law requires the California Energy Commission (CEC) to establish annual targets to double energy efficiency in buildings by 2030. The law also requires the California Public Utilities Commission (CPUC) to direct electric utilities to establish annual efficiency targets and implement demand-reduction measures to achieve this goal.

Senate Bill 32

In September 2016, the Governor signed Senate Bill 32 (SB 32) into legislation, which builds on AB 32 and requires the state to cut GHG emissions to 40 percent below 1990 levels by 2030. With SB 32, the Legislature also passed Assembly Bill 197, which provides additional direction for updating the Climate Change Scoping Plan to meet the 2030 GHG reduction target codified in SB 32. CARB published California's 2017 Climate Change Scoping Plan in November 2017 (2017 Scoping Plan). The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target. Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;

- Develop more high-density, transit oriented housing;
- Develop walkable and bikeable communities;
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

State Implementation Plan Conformity

Federal clean air laws require areas with unhealthy levels of air pollutants to develop plans, known as State Implementation Plans (SIPs). SIPs are comprehensive plans that describe how an area will attain National Ambient Air Quality Standards. Transportation projects are typically evaluated on a sector-wide basis for air quality and GHG emission effects, in response to federal requirements. The Federal Clean Air Act outlines requirements for ensuring that federal transportation plans, programs, and projects are consistent with the purpose of the SIP to reduce transportation-related emissions, including GHGs.

The Metropolitan Transportation Commission (MTC) is the transportation agency for the nine-county San Francisco Bay Area, and releases a TIP that lists near-term transportation projects that involve federal funds or agencies, and regionally significant state- and locally-funded projects. The TIP is evaluated for conformity with the SIP; a conformity finding demonstrates that the total emissions projected for the TIP are within the emissions budgets established by the SIP. The Federal Highway Administration and Federal Transit Administration approved the 2019 TIP in December 2018. The Project is listed in the 2019 TIP (Project TIP ID ALA150003).[1]

Regional

The Bay Area Air Quality Management District (BAAQMD) regulates air quality in the San Francisco Bay Area Air Basin. BAAQMD is responsible for developing and enforcing air quality rules in the air district, and is responsible for planning for the attainment of the state's ambient air quality standards. BAAQMD inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law. It also reviews analyses prepared for projects under the California Environmental Quality Act (CEQA) and has published the *CEQA Air Quality Guidelines* (BAAQMD Guidelines) for use in evaluation of air quality and GHG impacts.

[1] Metropolitan Transportation Commission and Association of Bay Area Governments. 2016. Plan Bay Area 2040. Amended March 2018.

Local

This section contains local regulatory plans, policies, and goals as they pertain to GHG emissions. Refer to **Chapter 5.2, Air Quality**, for local regulatory plans related to air quality.

City of Dublin

City of Dublin General Plan

The City of Dublin (Dublin)'s General Plan contains a variety of goals and policies that indirectly support the reduction of GHG emissions. These include transit-focused and multi-modal policies (see **Section 5.14, Transportation and Traffic**) and energy conservation (see **Section 5.16, Energy Conservation**).

City of Dublin Climate Action Plan

Dublin adopted its first Climate Action Plan in November 2010. The original Climate Action Plan established a GHG emissions reduction target of 20 percent from the original 2020 GHG emissions forecast. In 2013, Dublin issued an update to the Climate Action Plan. Dublin is currently developing Climate Action Plan 2.0, which, like its predecessors, will install goals and strategies through which the City can achieve its GHG emission reduction targets. Programs, goals, and policies in the current Climate Action Plan that are relevant to the project include:

A.1.10 Bicycle and Pedestrian Master Plan. The City's Bicycle and Pedestrian Master Plan includes polices that include the continued development of successful bicycle and pedestrian trail corridors, improved bicycle access to parks and open space areas, improved bicycle lanes and/or routes on several key cross-city corridors, bikeways on key freeway crossings, the development of education and enforcement programs, and improvements to the City's Bicycle Parking Ordinance. The project includes bicycle and pedestrian pathways along the entire length of the roadway.

A.1.12 City Design Strategy. The City's design strategy has been incorporated into the City's General Plan as part of the Community Design and Sustainability Element. The goals that relate to the project include promoting walking and cycling by providing safe, appealing, and comfortable street environments that support public health by reducing pedestrian injuries and encouraging daily physical activity. As previously mentioned, the project includes bicycle and pedestrian pathways along the entire length of the roadway.

A.2.5 LED Streetlight Specifications for New Projects. The project would be required to meet the City's LED streetlight specification that requires all future development projects to install LED streetlights.

Alameda County

Alameda County General Plan, Community Climate Action Plan

The Alameda County General Plan, Community Climate Action Plan contains the following action areas and measures which frame Alameda County (County)'s GHG reduction goals and provide a GHG reduction potential for each respective measure.

Transportation Action Area	Identify ways to reduce automobile emissions, including improving pedestrian and bicycle infrastructure, enhancing public transit service, and supporting reductions in single-occupancy vehicle use.
Measure T-2	Develop appropriate bicycle infrastructure for high traffic intersections and corridors
Measure T-6	Improve pedestrian connectivity and route choice in neighborhoods

City of Livermore

City of Livermore General Plan

The City of Livermore (Livermore)'s General Plan contains the following goals, objectives, and policies relating to GHGs:

Goal CLI-1	By 2020, the City of Livermore shall seek to reduce greenhouse gas emissions under the control of the City to a level 15% less than 2008 levels in order to support State implementation of the Global Warming Solution Act of 2006 (AB 32).
Policy P1	Climate Action Plan - The City will prepare and adopt a Climate Action Plan (CAP) by 2011. The CAP shall include an inventory of the 2008 level of GHG emissions within the City. The CAP shall set out specific policies and actions to be undertaken by the City to reduce GHG emissions under the control of the City to a level 15% less than 2008 conditions in order to support State implementation of AB 32. The policies and actions will include incentives, actions, and requirements to reduce the City's GHG emissions, the GHG emissions of the private sector, and actions that the City will take in concert with public agencies, the private sector, and other stakeholders to reduce GHG emissions. Development of the CAP will include a public and stakeholder process.

City of Livermore Climate Action Plan

In November 2012, Livermore adopted its Climate Action Plan, which outlines strategies and activities that would support the reduction of Livermore's GHG emissions. Consistent with applicable AB 32 targets, the Climate Action Plan includes specific incentives, actions, and

requirements to reduce GHGs produced by Livermore agencies, private businesses, and public agencies. The Climate Action Plan aims to reduce GHG emissions to 15 percent below 2008 conditions by 2020. The following actions from the Climate Action Plan are relevant to the project:

On-Road 4 Traffic Signal Synchronization. Under this measure, the City will improve travel speed by enhanced signal synchronization. This measure would reduce idling time for vehicles traveling on City roads. Traffic signals with the proposed project would be synchronized to meet optimum traffic flow projections.

On-Road 5 Bicycles and Pedestrian Improvements. This measure includes enhancements to the city's bike and pedestrian network that provides facilities for bicycle commuters, encouraging bicycling for short and medium-length trips. The project includes bicycle and pedestrian pathways along the entire length of the roadway.

EXISTING CONDITIONS

Unlike emissions of air pollutants, which have local or regional impacts, emissions of GHGs have a broader, global impact. Therefore, there is not a defined geographic study area for GHG emissions.

Climate Change and Greenhouse Gasses

This section provides a general discussion of global climate change and focuses on emissions from human activities that alter the chemical composition of the atmosphere. The discussion on global climate change and GHG emissions is based in part upon the California Global Warming Solutions Act of 2006 (AB 32) and research, information, and analysis completed by the International Panel on Climate Change (IPCC), the US EPA, and CARB.

Global climate change is the observed increase in the average temperature of the earth's atmosphere and oceans. Other substantial changes in climate over time, such as wind patterns, precipitation, and storms are also attributed to climate change. Climate change is triggered by both atmospheric gases such as CO_2, CH_4, and NO_x. These gases allow sunlight into the earth's atmosphere, but prevent heat from escaping from the earth's atmosphere, thus altering the earth's energy balance. This phenomenon is known as the greenhouse effect.

Naturally occurring GHGs include water vapor, CO_2, CH_4, NO_x, and ozone. Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also GHGs, but are for the most part solely a product of industrial activities. GHGs from human activities are primarily generated by the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors.

Impacts to California's climate and environment induced by climate change include shifting precipitation patterns, increasing temperatures, increasing severity and duration of wildfires, earlier melting of snow pack, and effects on habitats and biodiversity. In addition, sea levels along the California coast have risen up to seven inches over the last century, and average annual temperatures are increasing. These and other effects will likely intensify in the coming decades and significantly impact the state's public health, natural and manmade infrastructure, and ecosystems.

National and Statewide Greenhouse Gas Emissions Inventory

GHG emissions in the US totaled approximately 6,511 million metric tons (MMT) of carbon dioxide equivalent ($C0_2E$) in 2016.[2] Overall, total emissions nationwide increased by 2.4 percent from 1999 to 2016. However, national emissions decreased from 2015 to 2016 by 1.9 percent.[3] This decrease is attributed to two factors: 1) the replacement of coal with natural gas and other energy sources that do not contain fossil fuels, and 2) changes in demand for energy.

In 2016, 1,809 MMT of CO_2E were burned to support the demand for electric power across the country. Electric power is the largest fossil-fuel consuming sector, followed by the transportation sector, which burned 1,783 MMT of Co_2E in 2016. According to CARB's California Greenhouse Gas Inventory, the state produced a total of 440.4 MMT of CO_2E in 2015. Within the state, the transportation sector was the largest source of GHG emissions in 2016, accounting for 39 percent of the state's GHG inventory. GHG emissions from the transportation sector are predominantly composed of emissions from combustion of fuels sold in-state that are used by on-road and off-road vehicles, aviation, rail, and water-borne vehicles.[4] Unregulated statewide GHG emissions for the year 2020 will be approximately 500 MMT of CO_2E. These projections are indicative of the business-as-usual emissions, in the absence of any GHG reduction targets.[5]

Regional and Local Greenhouse Gas Emissions

As described above, the Federal Highway Administration and Federal Transit Administration approved the 2019 TIP in December 2018, finding that the TIP was in conformity with the SIP. The Project is listed in the 2019 TIP (Project TIP ID ALA150003).[6] Therefore, GHG emissions from the Project have been included in a regional plan (TIP) which was found to be consistent with statewide goals for GHG reduction.

According to Dublin's Climate Action Plan Update, in 2015 roughly 57 percent of total GHG emissions in Dublin are attributed to the transportation sector. Up to 18 percent of GHG emissions are from the commercial and industrial uses, roughly 19 percent from the residential sector, and the remaining 6 percent is attributable to solid waste and water services. Wastewater was not included in the inventory because it is not treated within Dublin's boundaries.

[2] US EPA. 2019. Overview of Greenhouse Gasses. Available at https://www.epa.gov/ghgemissions/overview-greenhouse-gases. Accessed January 2019.
[3] US EPA. 2018. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016. Available at https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf. Accessed January 2019.
[4] CARB. 2018. California Greenhouse Gas Emissions for 2000 to 2016. Available at https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf. Accessed January 2019.
[5] CARB. 2019. 2020 Business-as-Usual (BAU) Emissions Projection. Available at https://www.arb.ca.gov/cc/inventory/data/bau.htm. Accessed January 2019.
[6] Metropolitan Transportation Commission and Association of Bay Area Governments. 2016. Plan Bay Area 2040. Amended March 2018.

The County's Community Climate Action Plan for Unincorporated Areas established baseline GHG emission levels in 2005, and projected how emissions would change by 2020. The Climate Action Plan anticipated that in 2020 over 59 percent of GHG emissions would come from the transportation sector, and approximately 19 percent would be generated from residential energy consumption. Commercial and industrial uses were projected to comprise approximately 14 percent of GHG emissions in the County, and the remainder would be generated by water services and solid waste.

Based on information provided in Livermore's Climate Action Plan, it was estimated that in 2008 the transportation sector would be responsible for 35 percent of GHGs, followed by residential energy consumption (30 percent of all GHGs). Commercial and industrial uses were anticipated to comprise 25 percent of GHG emissions, and the remaining 10 percent of emissions would be attributable to solid waste, water services, and wastewater treatment. The Climate Action Plan also projected that by 2020, these percentages would shift to: transportation – 37 percent, residential energy – 28 percent, commercial and industrial uses – 26 percent, and the remaining 10 percent would remain the same between 2008 and 2020.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significant criteria for air quality were derived from the Environmental Checklist in the State CEQA Guidelines Appendix G. The Project would have a significant impacts if it would:

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

and/or

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

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were most recently updated in 2017.

BAAQMD does not have an adopted significance thresholds for construction-related GHG emissions. However, BAAQMD recommends the Lead Agency should quantify and disclose GHG emissions that would occur during construction, and make a determination on the significance of these construction-generated GHG emissions in relation to meeting AB 32 GHG reduction goals. Lead agencies are encouraged to incorporate best management practices to reduce GHG emissions during construction, as feasible and applicable.

BAAQMD's approach to developing thresholds of significance for operational GHG emissions is based on identifying the emissions level for which a project would not be expected to substantially conflict with a qualified GHG reduction plan. BAAQMD provides to avenues for making this determination: analysis to determine if a project would be consistent with a qualified GHG reduction strategy, and/or comparison against a quantitative threshold (often referred to as a "bright line threshold").

When using the consistency approach, a project must be compared to a qualified plan that addresses the project, such as a local Climate Action Plan. If the project is consistent, it can be presumed that the project would not have significant GHG emission impacts. When using the quantitative threshold, if a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact and would be considered significant at a project level. The quantitative thresholds discussed below are recommended for use with land use projects. However, as BAAQMD has not established GHG emission thresholds for project-level analysis of transportation projects, these quantitative thresholds are employed as one of the significance criteria used in this analysis, as the threshold provides a basis by which to contextualize project-specific GHG emissions from the Project.

The quantitative (bright line) thresholds established by BAAQMD are as follows:

- 1,100 metric tons of CO_2E per year; or
- 4.6 metric tons of CO_2E per service population per year (residents and employees)

BAAQMD's threshold of 1,100 metric tons was developed based on meeting the 2020 GHG targets set in AB 32. As operation of the Project would begin beyond 2020, a threshold that addresses a future GHG reduction target is appropriate. Although BAAQMD has not yet published a quantified threshold to meet the statewide 2030 GHG reduction target, this EIR uses a "Substantial Progress" adjustment. This adjustment assumes that 2020 statewide emissions will be equivalent to or lower than 1990 levels. The adjusted threshold should also account for the state's goal to reduce GHG emissions in 2030 by 40 percent. Therefore, an appropriate quantitative threshold would be 40 percent below the 1,100 metric tons:

- 660 metric tons of CO_2E per year

This reduced threshold was developed specifically for this Project and is not intended to be a significance threshold that would be applied to other development projects locally and regionally. Additionally, Dublin, Livermore, the County of Alameda, nor BAAQMD have adopted GHG significance thresholds that apply to construction-period GHG emissions.

Methodology

The Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model (RoadMod), Version 8.1.0, was used to calculate GHG emissions during Project construction. BAAQMD recommends the use of RoadMod to analyze construction emissions for transportation projects. To determine operational GHG emissions, vehicle miles traveled (VMT) calculations for the

Project provided by Kittelson and Associates were used in conjunction with CARB's EMFAC2014 on-road emissions model. VMT estimates were calculated both regionally and localized to the project, and both of these estimates were used to determine operational Project GHG emissions (available on file with the City of Dublin).

Impact Analysis

No Impact Summary
There are no "no impact" determinations for this topic.

Impacts of the Project

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

GHG emissions for transportation projects consist of short-term emissions associated with construction activities and long-term emissions once the project is operational. Construction-period emissions for the Project would consist primarily of emissions from equipment exhaust, and construction-period vehicle trips. Operational GHG emissions would be associated with vehicular traffic along the new roadway.

Construction-Period GHG Emissions
GHG emissions generated during construction would represent a temporary impact. Based on RoadMod modeling conducted for the project, construction-period emissions would equate to 930 metric tons of CO_2E, based on 18 months of construction. As BAAQMD has not established a threshold for analyzing construction-period GHG emissions, but advises that they be quantified, disclosed, and evaluated for consistency with AB 32, the construction-period GHG emissions for the Project have been prorated over the life of the project (assumed to be 30 years) and added to the operational GHG emissions discussion below. This ensures that construction GHGs are included in the overall analysis of the Project's potential to result in GHG emissions impacts. When prorated, the construction emissions equate to 31 metric tons per year.

Operational GHG Emissions
During Project operation, existing traffic will shift from other routes to the new roadway as drivers take advantage of the more efficient route. This will increase the overall effectiveness of the transportation system. The Project is not anticipated to generate new vehicle trips (see **Section 5.14, Transportation and Traffic**, and **Chapter 7.0, Other CEQA Considerations** for a detailed discussion). Therefore, the Project is not anticipated to directly generate operational GHG emissions. Rather, the project would indirectly redistribute existing vehicle travel, slightly changing the location of GHG emission generation in the region.

Regional Conformity
As described above, there are no local or regionally established thresholds for evaluating project-level GHG emissions from transportation projects. As discussed in Regulatory Setting and Existing Conditions, there is a process by which transportation projects are evaluated for air quality and GHG conformity by looking at the entire sector of emissions. This is done through the SIP conformity process. The SIP conformity process considers air quality impacts and GHG emissions

associated with transportation projects at the regional level. The Project is included in the 2019 TIP, and in turn, is also a part of the 2040 Plan Bay Area that includes the region's SCS. Therefore, the Project is consistent with the GHG reduction targets established by MTC and the Association of Bay Area Governments (ABAG), as included in the SCS.

Project-Level GHG Emissions

In order to analyze operational GHG emissions induced by the Project, emissions were measured in two ways: (1) using the projected vehicle miles traveled (VMT) for the region and (2) a focused analysis using the VMT local to the Project based on information prepared by Kittelson & Associates in August 2018 (available on file with the City of Dublin).

Over time, GHGs from VMT are anticipated to decrease with or without the project, as vehicle emissions standards improve and tailpipe exhaust is reduced. In order to identify changes in GHG emissions attributable to the Project, the change in GHGs from VMT between the Plus Project and No Project scenarios must be isolated. **Table 5.6-1** shows the projected metric tons of GHG emissions from the regional roadway system with and without the Project, and GHG emissions in a localized area near the Project where the majority of changes to vehicle travel patterns are anticipated to occur.

In comparing the 2025 No Project and 2025 Plus Project scenarios, regional GHG emissions would slightly reduce with implementation of the Project: operational GHG emissions in 2025 would be reduced by 19 tons or 0.004 percent in the 2025 Plus Project scenario. However, when prorated construction GHG emissions are added, there is a slight increase in GHG emissions between the 2025 No Project and 2025 Plus Project scenario.

In comparing the 2040 No Project and 2040 Plus Project scenarios, regional GHG emissions would slightly increase with implementation of the Project: operational GHG emissions would increase by 123 metric tons or 0.029 percent in the 2040 Plus Project scenario. With the addition of prorated construction GHG emissions, the total increase in GHG emissions in the 2040 Plus Project scenario would be 154 metric tons.

Based on the above, the Project would result in minimal change to GHGs at a regional level. Given the relatively small size of the Project within the overall transportation network (1.5 miles) and the type of project (a local roadway), it is understandable that the Project would not result in notable changes to regional GHGs. It is worth noting that the above calculations of estimated changes in GHG emissions are based on modeled VMT for the Project, which relied on the Countywide model and expert professional judgement. As discussed in more detail in **Chapter 7.0, Other CEQA Considerations**, VMT reductions and increases of 0.0-0.1 percent are generally held to be negligible and are more likely representative of the model's margin of error than actual changes in VMT. Therefore, the Project-level GHG emission estimates based on regional VMT analysis are conservatively high, and actual increases in operational GHG emissions may be lower.

Table 5.6-1 Project GHG Emissions

Measure	2017 Existing (Metric Tons per Year)	2025 No-Build (Metric Tons per Year)	2025 Build (Metric Tons per Year)	2040 No-Build (Metric Tons per Year)	2040 Build (Metric Tons per Year)
Regional VMT Analysis					
Estimated Regional GHG emissions from VMT	505,694	438,124	438,105	424,803	424,926
Prorated Construction Emissions	N/A	N/A	31	N/A	31
Difference between Build and No Build*	N/A	N/A	+12 metric tons	N/A	+154 metric tons
Does the Project exceed the Bright-Line Threshold of Significance - **660 Metric tons per year**			**No**		**No**
Focused VMT Analysis (2040 only)					
Estimated Localized GHG emissions from VMT	N/A	N/A	N/A	35	31
Difference between Build and No Build*	N/A	N/A	N/A	N/A	-4 metric tons
Does the Project exceed the Bright-Line Threshold of Significance - **660 Metric tons per year**			--	--	**No**

*Includes prorated construction emissions
Source: Illingworth & Rodkin, 2019; Kittelson & Associates, 2018

The focused VMT analysis indicates a slight reduction in GHG emissions in the 2040 Plus Project scenario. As a result of the Project, daily VMT in the Project vicinity would be reduced by 328 miles when comparing the 2040 No Project and 2040 Plus Project scenarios. This would result in an annual reduction of approximately 35 metric tons per year of GHG emissions. However, when prorated construction emissions are added to this figure, the overall reduction in GHG emissions in the 2040 Plus Project scenario is limited to a change of 4 metric tons.

As shown in **Table 5.6-1**, the Project would not increase emissions above the significance threshold of 660 metric tons per year in any scenario, whether regional or focused VMT projections are used. As Project emissions would be below the significance thresholds, and the Project is consistent with regional conformity for GHG emissions reductions through the TIP, the Project would not generate greenhouse gas emissions that may have a significant impact on the environment, and this impact would be **less than significant**.

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

On a regional scale the Project is included in the MTC's RTP, Plan Bay Area, and the TIP. At the local level, the Project would not conflict with the Dublin, County, or Livermore Climate Action Plans. The Project is consistent with the applicable emission reduction measures identified in the Climate Action Plans for all three jurisdictions, including the expansion of multimodal transportation networks, support of bicycle and pedestrian modes of transportation, and improving transit access. The extension of Dublin Boulevard to North Canyons Parkway, as proposed, is included as part of the adopted roadway networks in Dublin, the County, and Livermore's General Plans.

The Project is part of the 2019 TIP and therefore conforms to the region's air quality planning efforts to meet statewide GHG reduction targets from light-duty vehicles. Given this, the Project does not conflict with an applicable GHG reduction plan, policy, or regulation, and this impact is considered to be **less than significant**.

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects. As discussed in **Chapter 4.0, Introduction to Environmental Analysis**, the cumulative analysis considers future land use changes within the region and future roadway improvements expected to occur by the year 2040. These projections are based on the TIP, Plan Bay Area, General Plans, and individual projects which are considered reasonably foreseeable by the agency with jurisdiction.

As discussed above, GHG emissions associated with transportation projects are assessed on a sector-wide basis at the state and regional level. Because the Project and all other major transportation projects with federal funding (and major local projects) are included in the 2019 TIP, which was determined to be in conformity with the SIP, a cumulative impact related to transportation GHG emissions would not occur.

The Project would support planned growth in eastern Dublin, as described in Dublin's General Plan, the Eastern Dublin Specific Plan (EDSP), and the Fallon Village SEIR. Future individual development projects would be required to complete project-level GHG emissions analysis under CEQA, including the evaluation of GHG impacts and identification of mitigation measures if potentially significant impacts would occur. Further, future development projects would be subject to prior environmental documents including the General Plan EIR, EDSP EIR, and the Fallon Village SEIR. Through this process, GHG emissions from future projects would be addressed in accordance with statewide legislation, statewide GHG reduction plans (2017 Scoping Plan), and consistency with local Climate Action Plans. Therefore, a cumulative impact would not occur. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact.

REFERENCES

California Legislative Information. 2015-2016. SB-32 California Global Warming Solutions Act of 2006. Available: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32. Accessed: January 2, 2019.

California Legislative Information. 2018. AB-375. Available: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB375. Accessed: January 2, 2019.

CARB. 2018. California Greenhouse Gas Emissions for 2000 to 2016. Available: https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf. Accessed: January 2, 2019.

CARB. 2019. Assembly Bill 32 Overview. Available: https://www.arb.ca.gov/cc/ab32/ab32.htm. Accessed: January 2, 2019.

CARB. 2019. 2020 Business-as-Usual (BAU) Emissions Projection. Available: https://www.arb.ca.gov/cc/inventory/data/bau.htm. Accessed: January 2, 2019.

U.S. EPA. 2019. Overview of Greenhouse Gasses. Available: https://www.epa.gov/ghgemissions/overview-greenhouse-gases. Accessed: January 2, 2019.

U.S.EPA.2018. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016. Available: https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf. Accessed: January 2, 2019.

Dublin 2010. Dublin Climate Action Plan. Available: https://dublin.ca.gov/DocumentCenter/View/1049/Dublin-Climate-Action-Plan?bidId. Accessed: January 2, 2019.

Dublin 2013. Dublin Climate Action Plan Update 2013. Available: https://dublin.ca.gov/DocumentCenter/View/5799/Dublin-Climate-Action-Plan-Update-2013?bidId. Accessed: January 2, 2019.

Livermore. 2012. Livermore Climate Action Plan. Available: http://www.cityoflivermore.net/civicax/filebank/documents/9789/. Accessed: January 2, 2019.

5.7 HAZARDS AND HAZARDOUS MATERIALS

INTRODUCTION

This section describes potential hazards and hazardous materials related to the Project. Information in this section is based on the *Phase I Environmental Site Assessment Report* (ESA) prepared for the Project (see **Appendix G** of this Draft Environmental Impact Report (EIR), which identified the presence or likely presence of hazardous substances at the property or associated with previous uses of the Project site.[1]

For the purposes of this environmental document, "hazardous materials" are defined as substances that could pose a substantial present or future risk to human health or the environment if improperly handled, stored, disposed, or otherwise managed.[2] Hazardous materials can result in public health hazards through human contact with contaminated soils or groundwater; or through airborne releases in vapors, fumes, or dust.

Scoping Issues Addressed

No public or agency comments related to hazards and hazardous materials were received during the public scoping period for this Draft EIR.

REGULATORY SETTING

Federal

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

The primary federal laws regulating hazardous wastes and materials are the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 and the Resource Conservation and Recovery Act (RCRA) of 1976. The purpose of CERCLA, often referred to as "Superfund," is to identify and cleanup 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
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)

[1] Geocon Consultants, Inc. 2018. *Phase I Environmental Site Assessment Report – Dublin Boulevard Extension Alameda County, California.*
[2] California Health and Safety Code, Chapter 6.95. Hazardous Materials Release Response Plans and Inventory [25500-25547.8], Section 25501(h).

- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (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.

State

In California, the US Environmental Protection Agency (EPA) has granted the California Environmental Protection Agency (CAL/EPA) most enforcement authority over federal hazardous materials regulations in the state. The mission of CAL/EPA is to restore, protect, and enhance the environment to ensure public health, environmental quality, and economic vitality. Under the authority of CAL/EPA, the Department of Toxic Substances Control (DTSC) and the San Francisco Bay Regional Water Quality Control Board (RWQCB) is responsible for overseeing the cleanup of contaminated soil and groundwater sites in the East Dublin Specific Plan (EDSP) area. RWQCB regulations applicable to hazardous materials are contained in Title 27 of the California Code of Regulations (CCR). Additional state regulations applicable to hazardous materials are contained in CCR Title 22. CCR Title 26 is a compilation of those sections or titles of the CCR that are applicable to hazardous materials.

Local

City of Dublin

City of Dublin General Plan

Chapter 4 of Dublin's General Plan references the Alameda County Hazardous Waste Management Plan, enforced by the Alameda County Department of Environmental Health (ACDEH), to ensure consistency between the two. The General Plan establishes goals and policies pertaining to the hierarchy of hazardous waste management strategies and creates a set of criteria for the siting of expanded or new offsite hazardous waste facilities.[3]

Chapter 8 of the Dublin General Plan establishes guiding and implementing policies associated with hazards and hazardous materials. The policies included in this chapter aim to regulate the transportation, use, and storage of hazardous materials and minimize the risk of exposure from contaminated sites:

Guiding Policy 8.3.4.A.1: Maintain and enhance the ability to regulate the use, transport, and storage of hazardous materials and to quickly identify substances and take appropriate action during emergencies.

[3] City of Dublin. 1985. *City of Dublin General Plan.* Community Development Department. Dublin, CA. Amended November, 2017.

Guiding Policy 8.3.4.A.2:	Minimize the risk of exposure to hazardous materials from contaminated sites.
Implementing Policy 8.3.4.B.2:	As part of the City's Comprehensive Emergency Response Plan, the City has adopted a Hazardous Materials Response Plan. The City will periodically review the Plan to prepare for and respond to emergencies related to hazardous materials.
Implementing Policy 8.3.4.B.3:	Periodically review and enforce the City's ordinances regulating the handling, transport, and storage of hazardous materials and hazardous waste.
Implementing Policy 8.3.4.B.4:	Require site-specific hazardous materials studies for new development projects where there is a potential for the presence of hazardous materials from previous uses on the site. If hazardous materials are found, require the clean-up of sites to acceptable regulatory standards prior to development.
Guiding Policy 8.4.1.A.1:	All proposed land uses within the Airport Influence Area (AIA) shall be reviewed for consistency with the safety compatibility policies and airspace protection policies of the Airport Land Use Compatibility Plan (ALUCP) for the Livermore Municipal Airport.

Eastern Dublin Specific Plan

The EDSP contains the following policies and programs as it relates to hazards and hazardous materials:

Policy 11-1	Prior to issuance of building permits for site-specific Phase I (and if necessary Phase II) environmental site assessments shall be made available to the Community Development Director, with appropriate documentation that all recommended remediation actions have been completed.

Alameda County

The ACDEH is the Certified Unified Program Agency (CUPA) that coordinates and enforces numerous local, state, and federal hazardous materials management and environmental protection programs in the county. ACDEH administers a number of programs that contain basic information on the location, type, quantity, and health risks of hazardous materials and waste.

Alameda County Hazardous Materials/Waste Program

The Alameda County Hazardous Materials/Waste Program is recognized by the DTSC and enforces numerous local, state, and federal hazardous materials management and environmental protection programs in the County.[4]

Alameda County Safety Element: Chapter 2 Man Made Hazards

Chapter 2.2 of the Alameda County Safety Element describes man-made hazards present within unincorporated areas of the County and goals, policies and actions intended to minimize loss due to hazardous materials and aviation.[5] The chapter's goals and policies aim to minimize residents' exposure to the harmful effects of hazardous materials and waste. The following policies and programs from the Alameda County Safety Element relate to hazards and hazardous materials:

Policy 2.P2 Hill area development, and particularly that adjoining heavily vegetated open space area, should incorporate careful site design, use of fire retardant building materials and landscaping, development and maintenance of fuel breaks and vegetation management programs, and provisions to limit public access to open space areas in order to minimize wildland fire hazards. (Source: Seismic Safety and Safety Element, pg. 7)

Policy 4.P8 Developers shall be required to conduct the necessary level of environmental investigation to ensure that soil, groundwater and buildings affected by hazardous material releases from prior land uses and lead or asbestos in building materials will not have a negative impact on the natural environment or health and safety of future property owners or users. This shall occur as a pre-condition for receiving building permits or planning approvals for development on historically commercial or industrial parcels.

Policy 4.P11 To the extent feasible, the County shall continue to support the removal of hazardous wastes from the solid waste stream in unincorporated Alameda County in accordance with Countywide plans.

Policy 5.A2 Refer all updates to County General Plans, Specific Plans, and Zoning Ordinances to the Alameda County ALUC for a compatibility determination.

Policy 6.P2 Adequate emergency water flow, emergency vehicle access and evacuation routes shall be incorporated into any new development prior to project approval.

[4]Alameda County Environmental Health. *Alameda County Hazardous Materials/Waste Program*. Available: https://www.acgov.org/aceh/hazard/. Accessed: June 7, 2018.
[5] *Alameda County Safety Element: Chapter 2 Man Made Hazards.* Available: https://www.acgov.org/cda/planning/generalplans/documents/SafetyElementAmendmentFinal.pdf. Accessed: June 7, 2018.

City of Livermore

City of Livermore General Plan

Chapter 10 of the Livermore General Plan sets goals and policies to protect the community from the harmful effects of hazardous materials through promoting the safe transport of hazardous materials, requiring environmental investigation for contaminants prior to site redevelopment, and implementing relevant provisions consistent with the hazardous materials and waste management plans for the County.[6]

Livermore Municipal Airport Land Use Compatibility Plan

The ALUCP governs land use around Livermore Municipal Airport. The ALUCP is a guide for local jurisdictions in safeguarding the general welfare of the public as Livermore Municipal Airport and surrounding areas continue to grow. This document also facilitates the review of airport and land use development proposals within the airport influence area (AIA).

EXISTING CONDITIONS

Information in this section is based on the ESA prepared for the Project (see **Appendix G** of this Draft EIR). The ESA entailed a review of publicly available local, state, tribal, and federal environmental record sources; standard historic sources; aerial photographs; fire insurance maps; and topographic, geologic, and hydrogeologic records. Data sources related to historic land uses, current land uses, and environmental records from regulatory agencies were reviewed to identify known or potential sites associated with hazardous materials within the study area, which includes the Project site plus a 1 mile radius. These sites were then evaluated to identify known or potential releases of hazardous materials that could impact soils or groundwater beneath the Project site.

The ESA also included an Environmental Data Resources (EDR) radius map search of federal, state, and local environmental databases for historic hazardous spills or releases. As shown in **Table 5.7-1**, there are several facilities within the study area included in the EDR database. However, the seven parcels that encompass the Project site are not listed in the EDR database search results. Refer to **Appendix G** of this Draft EIR for additional information on these database searches.

Site History

According to the ESA's historic information sources, the largely undeveloped Project site was originally dedicated to rural residential and agricultural uses. A ranch compound dating back to the early 1900's was located on the Project site along the western end of the proposed alignment. A former residence was located at 3457 Croak Road on the Project site during the 1990s but was subsequently demolished. The business name listing corresponding with the address suggests the relationship to a trucking and equipment enterprise, which could have storage or used of petroleum products or other hazardous materials.

[6] *Livermore General Plan: Chapter 10 Public Safety Element, Hazardous Waste Management*. Available: http://www.cityoflivermore.net/civicax/filebank/documents/6101/ Accessed: June 7, 2018.

Potential Hazards Associated with Former Use

Former Agricultural Uses

Aerial photographs indicate that large portions of the study area were used for farming and ranching. Paths or narrow roads, possibly related to dry land farming, have been present in the study area since before 1940. As mentioned above, an apparent ranch compound was located along the western terminus of the proposed alignment near Fallon Road from the early 1900's to the late 1960's. A decayed livestock loading corral likely formerly associated with the structures is currently located in the Project site. The Project site has been used primarily for grazing land with partial field or row crops since at least 1949. It is possible that pesticides were in use in field or row crop areas.

Previous Residential or Commercial Land Uses

Topographic maps reviewed as a part of the ESA depict structures near the western alignment terminus dating back to the early 1900's, with more recent, sporadic residential and agricultural development throughout the study area. These uses suggest the potential presence of water/dry wells, septic systems, and underground storage tanks (UST) used for the storage of heating oil or fuel.

Aboveground Storage Tanks

Site records indicated two aboveground storage tanks (ASTs) were within the Project site and were removed sometime between 1985 and 1990 without incident. The tanks were located on a paved area with containment berms, to prevent spillage, and each stored approximately 5,000 gallons of diesel fuel associated with a former paving business that leased the property (Assessor's Parcel Number 905-1-4-4). The former presence of the ASTs is a potential environmental concern, as diesel-contaminated soils may be toxic to plants and soil microorganisms, and act as a source of groundwater contamination. If the groundwater below the site has been contaminated, the contamination could have spread to surrounding groundwater.

Table 5.7-1 EDR Record Search Results

Database Name	Search Radius (Miles)	Number of Listings	Property/Facility Name
Resource Conservation and Recovery Act – Large Quantity Generator (RCRA-LQG)	0.25	1	Target Store T2771 2800 Dublin Boulevard, Dublin, CA 94568
Resource Conservation and Recovery Act – Conditionally Exempt Small Quantity Generator (RCRA-CESQG)	0.25	1	CVS Pharmacy #17628 2800 Dublin Boulevard, Site B, Dublin, CA 94568
(DTSC equivalent CERCLIS Database (EnviroStor)	1.0	6	Proposed New Elementary School Jordan Ranch E-5, Site E, Fallon Road and north of I-580, Dublin, CA 94588
			Proposed Kolb Elementary School Palermo Way, Dublin, CA 94568
			M-1 Middle School Parcel O-Tract 6725/S, Dublin Ranch Drive, Dublin, CA 94588
			E-2 Elementary School Parcel O-Tract 6960/Antone Way, Dublin, CA 94588
			Proposed Elementary School E-4 5781 Fallon Road, Dublin, CA 94568
			E-5 Alternative School Site South of Central Parkway, east of Fallon Road, Dublin, CA 94588
State and Tribal Leaking Underground Storage Tank (LUST)	0.5	4	Bernard's 1051 Airway Boulevard, Livermore, CA 94550
			Livermore Municipal Airport 1800 Freisman Road, Livermore, CA 94550
			Las Positas Golf Course 909 Clubhouse, Livermore, CA 94566

Database Name	Search Radius (Miles)	Number of Listings	Property/Facility Name
Resource Conservation and Recovery Act – Large Quantity Generator (RCRA-LQG)	0.25	1	Target Store T2771 2800 Dublin Boulevard, Dublin, CA 94568
Resource Conservation and Recovery Act – Conditionally Exempt Small Quantity Generator (RCRA-CESQG)	0.25	1	CVS Pharmacy #17628 2800 Dublin Boulevard, Site B, Dublin, CA 94568
			Livermore Municipal Airport 1800 Freisman Road, Livermore, CA 94550
Spills, Leaks, Investigations, and Cleanups sites (SLIC)	0.5	2	Windwood at Jordan Ranch, 4233 Fallon Road, Dublin, CA 94568
			Freisman Ranch, 1600 Freisman Road, Livermore, CA 94550
Alameda County Contaminated Sites	0.5	5	Bernard's, 1051 Airway Blvd Livermore, CA 94550
			Windwood at Jordan Ranch, 4233 Fallon Road, Dublin, CA 94568
			City of Livermore Airport, 1800 Freisman Livermore, CA 94550
			Las Positas Golf Course, 909 Clubhouse, Livermore, CA 94566
			Freisman Ranch, 1600 Freisman Road, Livermore, CA 94550
Local Lists of Hazardous Waste/Contaminated Sites SCH (DTSC School Property Evaluation Program)	0.25	1	E-5 Alternative School Site South of Central Parkway, east of Fallon Road, Dublin, CA 94588
HIST CORTESE (Historical ("Cortese" Hazardous Waste & Substance Site List)	0.5	2	Las Positas Golf Course 909 Clubhouse, Livermore, CA 94566
			Livermore Municipal Airport, 1800 Freisman Road, Livermore, CA 94550

Database Name	Search Radius (Miles)	Number of Listings	Property/Facility Name
Resource Conservation and Recovery Act – Large Quantity Generator (RCRA-LQG)	0.25	1	Target Store T2771 2800 Dublin Boulevard, Dublin, CA 94568
Resource Conservation and Recovery Act – Conditionally Exempt Small Quantity Generator (RCRA-CESQG)	0.25	1	CVS Pharmacy #17628 2800 Dublin Boulevard, Site B, Dublin, CA 94568
Proposition 65 Records (Notify 65)	1.0	1	Airport/Los Positas Golf Course, 1800 Freisman Road, Pleasanton, CA 92561

Source: GeoCon, 2018

Livermore Municipal Airport

The Project site is located approximately 1,800 feet north of the Livermore Municipal Airport, and is within the AIA and Airport Protection Area (APA), as shown in **Figure 5.7-1**. The APA is designed to prevent the encroachment of incompatible land uses near the vicinity of Livermore Municipal Airport. New residential land use designations, or the intensification of existing residential land uses, are prohibited within the APA. Nonresidential land uses may be allowed within the APA if they are consistent with the criteria set forth in Policy 3.3.2.8 of the ALUCP. The Livermore Municipal Airport AIA and APA, described below, overlap the Project site.

Airport Influence Area

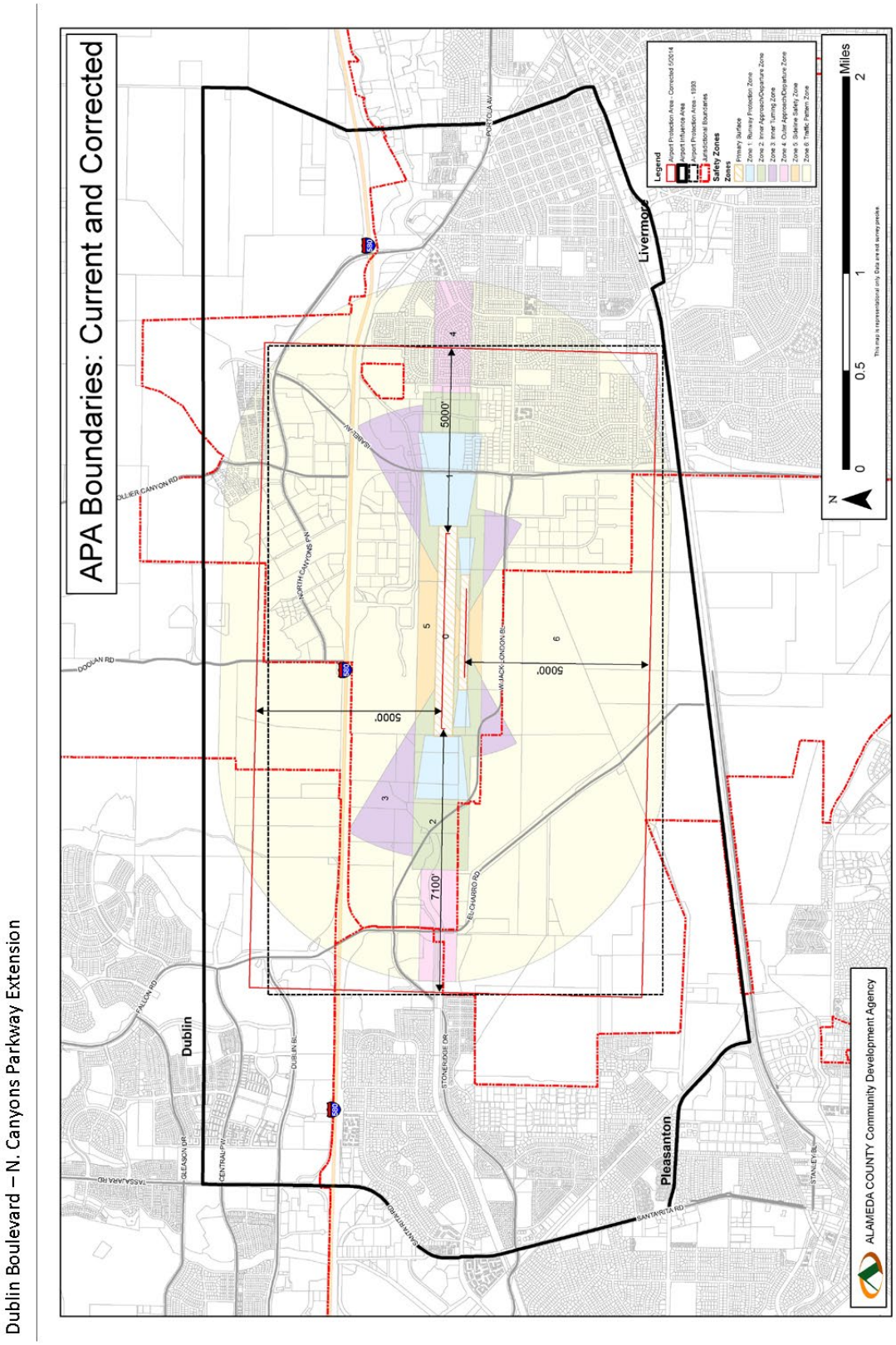
The AIA is the area in which current or future airport-related noise, overflight, safety, and airspace protection factors may significantly affect land uses or necessitate restrictions on those uses. **Figure 5.7-1** depicts the Livermore Municipal Airport AIA, which includes portions of the cities of Livermore, Pleasanton, Dublin, and the County. The ALUC is authorized to review local land use actions affecting the AIA, including adoption or amendments of general plans, specific plans, zoning ordinances, and building regulations.

Airport Safety Zones

The Airport Safety Zones (ASZ), as established in the ALUCP, outline the level of risk associated with a particular land use, and what uses are permitted in each zone. The ASZs include seven safety zones identified by runway length and flight patterns.[7] Permitted land uses generally require no limitations. The Project site is within the following ASZs, as shown in **Figure 5.7-1**:

- Zone 6, Traffic Pattern Zone, roughly corresponds to the APA boundaries. This zone contains the aircraft traffic pattern. While a high percentage of accidents occur in this zone, the size of the zone reduces the risk level as compared to the other zones. The Project is located wholly within Safety Zone 6 - the Traffic Pattern Zone. Although Safety Zone 6 risk concern is described as posing a "Generally low likelihood of accident occurrence at most airports; risk concern primarily is with uses for which potential consequences are severe."
- Zone 7, Other Airport Environ/Horizontal Surface/Outer Conical Surface, is the area between Zone 6 and the AIA boundaries, and prohibits hazards to flight, but allows residential uses, transit-oriented uses, roads, automobile parking areas, open parking garages, storage of hazardous materials, and repair garages are permitted uses in this Zone.

[7] The zones are established in accordance with Federal Aviation Regulation (FAR) Part 77.



Dublin Boulevard – N. Canyons Parkway Extension

Figure 5.7-1

Current and Corrected ALUCP Zones and Boundaires

Source: Livermore Municipal Airport Land Use Compatibility Plan, 2012

Fire Hazards

The California Department of Forestry and Fire Protection identifies fire hazards based on relevant factors such as fuels, terrain, and weather.[8] Fire Hazard Severity Zones (FHSZ) within Alameda County are ranked with moderate, high, and very high fire susceptibility. The Project site is located within a moderate FHSZ, which extends north in the undeveloped areas north of the Project.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for hazards and hazardous materials were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this Project.

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria:

A. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment

B. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

C. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment

D. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area

F. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area

G. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

[8] California Department of Forestry and Fire Protection. California Fire Hazard Severity Zone Map. 2007. Available: http://egis.fire.ca.gov/FHSZ/. Accessed: November 5, 2018.

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

Methodology

This analysis evaluates potential hazard and hazardous material concerns on the Project site against the significance criteria to identify potential risks to life or property that could occur as a result of the Project. Construction workers typically have the greatest risk of exposure during site preparation and grading. Accidents or spills during the transport of hazardous materials can also expose the public and the environment to these substances. If contamination at a site remains undetected or unmitigated, future site users could experience health risks due to long-term exposure.

Impact Analysis

No Impact Summary

A. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

The Department of Toxic Substance Control's Hazardous Waste and Substances Site List, prepared pursuant to Government Code Section 65962.5, is a planning document used by state and local agencies to provide information about hazardous material release sites. The Project site is not included on this list of hazardous material sites. Therefore, no impact would occur.

Impacts of the Project

B. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Operation of the Project would not directly involve the routine use, disposal, or transportation of hazardous materials. Project operation would entail multi-modal use of a new roadway. During operation, automobile traffic along this facility could experience collisions that result in the accidental release of substances such as fuel, lubricants, or hazardous freight. In order to account for these potential hazards, the Project would be designed and engineered per standard engineering requirements for roadway slope, curvature, speeds, storm water treatment, lane orientation, and other standard roadway design criteria. Compliance with these standards would minimize the potential for hazardous material or waste release under accident conditions. The Project would be designed and operated consistent with all applicable standards and regulations for safety, and would not present a unique or above-average risk for accidents involving hazardous materials. This impact would be **less than significant**.

C. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact HAZ-1: Project construction could expose construction workers and future users to soil contamination from past uses of the Project site and surrounding areas, including pesticides and/or petrochemicals from fuel. **(Less than Significant with Mitigation)**

Construction

Construction would entail large areas of grading, installation of road surfaces, drainage improvements, cut/fill embankments, underground utilities, and a new bridge structure over Cottonwood Creek. Project construction would also require vehicles trips to deliver materials and remove waste products or excavated soil. As mentioned above, an environmental database search found no evidence of previous spills or widespread contamination on the Project site. However, excavation and grading could encounter residual contamination associated with previous residential, commercial, and agricultural uses on the Project site, as described below.

Previous Residential and Commercial Land Uses

Parcels within the Project site could contain septic systems, water/dry wells, and USTs used for the storage of heating oil and fuel. Leakage or spillage from these systems could have contaminated soil and/or groundwater within the Project site. Should any potential water/dry wells be encountered during construction, Dublin, Livermore, or the County would be required by law to remove wells in accordance with the California Department of Water Resources requirements for destroying wells as outlined in California Well Standards Bulletins 74-81[9] and 74-90.[10,11] If undocumented USTs or septic tanks are encountered during construction activities, Dublin, Livermore, or the County would be required by law to abandon and/or remove the USTs or septic tanks in accordance with the ACDEH Underground Storage Tank Program, which regulates the construction, operation, repair and removals of UST and septic tank systems used to store hazardous materials or waste. In the event a UST is unexpectedly encountered during construction, **Mitigation Measure HAZ-1** would be implemented to further protect worker safety. This measure requires a temporary halting of work until coordination with ACDEH is complete to ensure workers are not exposed to hazardous substances. With adherence to these regulations and **Mitigation Measure HAZ-1**, this impact would be less than significant.

Former Agricultural Uses

The study area including the Project site has historically been used primarily for rangeland with partial field or row crops. Aerial photographs indicate that portions of the study area were used for farming and ranching. It is possible pesticides were in use in field or row crop areas. The presence of residual pesticides associated with agricultural activities represents a potentially significant

[9] California Department of Water Resources. June 1981. California Well Standards: State of California. Bulletin 74-81.
[10] Alameda County Department of Environmental Health. *Alameda County Hazardous Materials/Waste Program*. Available: https://www.acgov.org/aceh/hazard/. Accessed: June 7, 2018.
[11] California Department of Water Resources. June 1991. California Well Standards. Bulletin 74-90.

impact, reduced to a less-than-significant level through implementation of **Mitigation Measure HAZ-2. Mitigation Measure HAZ-2** would require a limited soil investigation prior to issuance of any demolition, grading, or building permit. If agricultural contaminants are present on the Project site, a remediation plan shall be implemented to ensure the safety of workers and future users.

Aboveground Storage Tanks

The former existence of above-ground diesel storage tanks within the Project site (Assessor's Parcel Number 905-1-4-4) indicates a potential for diesel fuel contamination. ASTs can pose a serious hazard if leakage or spillage has occurred and has potentially contaminated the soil or groundwater. The presence of AST-related contaminants represents a potentially significant impact, reduced to a less-than-significant level through implementation of **Mitigation Measure HAZ-1**. **Mitigation Measure HAZ-1** provides protocols for construction safety if the results of the soil investigation are negative, but subsequently petroleum-impacted soils or USTs are unexpectedly encountered during construction.

Mitigation for Impact HAZ-1

Mitigation Measure HAZ-1: If petroleum-impacted soils or USTs are unexpectedly encountered during any construction activities, work in the area shall be temporarily halted and the corresponding jurisdiction (City of Dublin, the County, or Livermore) shall coordinate with the ACDEH to determine appropriate treatment and removal of the UST and contaminated soil.

Mitigation Measure HAZ-2: Prior to issuance of any demolition, grading, or building permit, a limited soil investigation will be completed within the construction area to identify potential contamination from past petroleum hydrocarbons and any agrichemical contamination from agricultural use.

- Soil samples will be collected and tested for residual pesticides by a qualified professional. Concentrations of agricultural contaminants will be compared to applicable State Water Quality Control Board Environmental Screening Levels.

- Dublin shall prepare and submit a comprehensive report to the ACDEH, signed by a qualified environmental professional, documenting the presence or lack of petroleum hydrocarbons, agrichemicals, or other contaminants on the Project site.

- If the soil investigation finds contaminants are present, Dublin, in cooperation with the County if needed, shall create and implement a remediation plan that ensures workers and future users of the Project are not exposed to concentrations in excess of screening levels or other risks associated with soil contamination in accordance with regulatory standards.

- Potential safety measures could include soil removal and treatment, or protective work attire requirements for construction workers.

- The remediation plan shall also include provisions to outline safe transportation and disposal techniques, and would prevent the handling of hazardous materials[12] nearby sensitive educational facilities by delimiting work areas and hauling routes within 0.25 mile of a school.

D. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Impact HAZ-2: Project construction could require transportation of contaminated soils within one-quarter mile of an existing or proposed school, if contaminated soils are found and removed from the construction footprint. **(Less than Significant with Mitigation)**

Cottonwood Creek Elementary School is located 0.25 miles north of the Project site along Central Parkway. The next closest schools - Eleanor Murray Fallon Middle School and Mohr Elementary School - are located approximately 1 mile west of the Project site. If contamination is detected on the Project site, transportation and disposal activities could handle hazardous materials within 0.25-mile of schools along haul routes. This is considered a potentially significant impact. The remediation plan discussed under **Mitigation Measure HAZ-2** would include provisions to prevent the transportation of hazardous materials within 0.25-mile of educational facilities during hauling activities. With implementation of **Mitigation Measure HAZ-2**, this impact would be less than significant.

Mitigation for Impact HAZ-2

Mitigation Measure HAZ-2 (described above)

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area.

And

F. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

The Project site is located within the Livermore Municipal Airport AIA, including the Zone 6 and Zone 7 ASZs. Land within these zones is subject to policies that limit development within the airport's sphere of influence and prevent encroachment of incompatible land uses. As a roadway development, the Project is classified as a 'Utilities' land use, which is considered a permitted use in Zones 6 and 7 according to the Safety Compatibility Criteria, and would not result in a safety hazard

[12] In this context, *hazardous materials* include a hazardous substance (as defined in California Public Resources Code Section 21151.4) or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code.

for people residing or working in the hazards and hazardous materials study area. Based on feedback provided by the County, the Project could potentially provide an alternative area to land an aircraft in the event of an emergency. Therefore, the Project is considered consistent with the ALUC, and does not present a significant hazard. This impact would be **less than significant**.

G. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Impact HAZ-3: Project construction activities could temporarily interfere with emergency access at the intersection of Dublin Boulevard/Fallon Road, intersection of North Canyons Parkway/Doolan Road, and at the new intersection of Dublin Boulevard/Croak Road. **(Less than Significant with Mitigation)**

The Project entails construction of a new roadway, which would not physically interfere with emergency response or evacuation plans. The connection of Dublin Boulevard to North Canyons Parkway may enhance emergency access by providing a local roadway connection between Dublin and Livermore and an alternative route to I-580. During construction, intersection modifications would occur at the existing Dublin Boulevard/Fallon Road and North Canyons Parkway/Doolan Road intersections, and a new intersection would be constructed at Croak Road. These improvements could require temporary roadway closures and detouring at Croak Road, Fallon Road, and Doolan Road, which would be accounted for in **Mitigation Measure TRAF-1**, as discussed in **Section 5.14, Transportation and Traffic**. This Mitigation Measure requires preparation of a traffic management plan (TMP), which would include press releases to notify and inform emergency services of upcoming road closures and detours, thereby preventing interference with adopted emergency response plans or emergency evacuation plans. Given the above, this impact would be less than significant with mitigation**.**

Mitigation for Impact HAZ-3

Mitigation Measure TRAF-1 (described in **Section 5.14, Transportation and Traffic)**

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

The Project site is located within a moderate FHSZ, demonstrating a moderate susceptibility to fire hazards. However, Project implementation would represent little to no threat of exposing people or structures to fire hazards, as the Project would not include new residential or commercial uses, or other uses that would concentrate individuals at the Project site. This impact would be **less than significant**.

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and planned residential, commercial, and infrastructure development projects in Dublin, Livermore, and elsewhere around the study area (see **Chapter 4.0, Introduction to Environmental Analysis**).

Construction of the Project, along with past, present, and reasonably foreseeable projects, would temporarily increase the regional use, transport, and disposal of hazardous materials and petroleum products commonly used at construction sites, such as diesel fuel, welding materials, lubricants, paints and solvents, and cement products containing strong acidic or basic chemicals. Demolition, ground-disturbing, and construction activities could disturb hazardous media – such as contaminated soil – that would require removal and off-site disposal. Such materials would incrementally contribute to the regional transportation and disposal of hazardous substances.

While hazardous materials handling may increase during construction and operation of past, present, and reasonably foreseeable projects, existing regulations, including CERCLA, RCRA, OSHA, and TSCA, require strict safety procedures and regulatory oversight related to hazardous materials and waste. Facilities and construction sites that use, store, generate, or dispose of hazardous materials or wastes and transporters of hazardous material and waste are required to comply with various federal, state, and local regulations to minimize the risk of a hazardous materials spill or accidental release. Furthermore, past, present, and reasonably foreseeable projects within areas of known contamination would be required by federal, state, and local statues to develop management plans to ensure the safe removal and disposal of contaminated media prior to development.

There are no planned or reasonably foreseeable hazardous uses within the study area, or other transportation projects that would notably increase transportation of hazardous materials. Implementation of the Grand View project is anticipated to occur after this Project. Therefore, concurrent construction periods are not reasonably anticipated. Construction of the Grand View project could encounter soil contamination similar to that which is anticipated on the Project site. The Grand View project would be subject to mitigation from prior EIRs such as the Dublin General Plan EIR, EDSP EIR, and the Fallon Village Supplemental Environmental Impact Report (SEIR) and be subject to all regulations regarding hazardous materials. In addition, future projects would be required to prepare an independent evaluation of hazards and hazardous material impacts. Therefore, the Project would result in a less than cumulatively considerable contribution to any significant cumulative impact. No cumulative impact would occur.

Development intensification in fire-prone areas exacerbates the threat of wildland fires. Although most past, present, and future foreseeable projects in the study area would generally occur as infill development within urbanized communities, some projects could develop along the urban fridge within the FHSZ north of the Project site. Such development would marginally increase risks posed by wildfire on a project-by-project basis. Future projects would be subject to approval by Dublin and review for General Plan and ESDP consistency, and would be required to prepare an independent evaluation of hazards and hazardous material impacts. The Project would not directly or incrementally contribute to wildfire hazards, as it includes an extension of the roadway network

and no habitable structures or other features which would exacerbate wildfire risks. Therefore, the Project would not substantially increase risks associated with wildland fires on a cumulative basis. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact. No cumulative impact would occur.

Intensified development surrounding the Livermore Municipal Airport could locally increase airport safety hazards. The Project would not directly or incrementally contribute to airport safety hazards, as it is a project type that is compatible with the established ALUCP. Future projects within the Livermore Municipal Airport AIA would be required to comply with the ALUCP policies and other relevant Federal Aviation Administration requirements. Conformity with the ALUC would ensure that cumulative development within the study area would not result in cumulative impacts associated with airport hazards. Therefore, the Project would result in a less than cumulatively considerable contribution to any significant cumulative impact associated with airport hazards. No cumulative impact would occur.

REFERENCES

Alameda County, 2012. Alameda County Airport Land Use Compatibility Plan, Livermore Municipal Airport. Available: https://www.acgov.org/cda/planning/generalplans/documents/LVK_ALUCP_082012_FULL.pdf. Accessed: January 17, 2019.

Alameda County Environmental Health, 2018. Alameda County Hazardous Materials/Waste Program. Available: https://www.acgov.org/aceh/hazard/. Accessed: June 7, 2018.

Alameda County Community Development Agency, 2013. Alameda County Safety Element: Chapter 2 Man Made Hazards. Amended 2014. Available: https://www.acgov.org/cda/planning/generalplans/documents/SafetyElementAmendmentFinal.pdf . Accessed: June 7, 2018.

California Department of Forestry and Fire Protection. 2007. California Fire Hazard Severity Zone Map. Available: http://egis.fire.ca.gov/FHSZ/. Accessed: November 5, 2018.

California Department of Water Resources. 1981. California Well Standards - Bulletin 74-81.

California Department of Water Resources. 1991. California Well Standards - Bulletin 74-90.

City of Dublin, 2016. City of Dublin General Plan: Chapter 4 Land Use and Circulation: Schools, Public Lands, and Utilities Element. Available: https://www.dublin.ca.gov/DocumentCenter/View/7798/Chapter-4-March-2016. Accessed: June 7, 2018.

City of Livermore, 2014. City of Livermore General Plan*: Chapter 10 Public Safety Element, Hazardous Waste Management.* Available: http://www.cityoflivermore.net/civicax/filebank/documents/6101/ Accessed: June 7, 2018.

This Page Intentionally Left Blank

5.8 HYDROLOGY AND WATER QUALITY

INTRODUCTION

Hydrological information for this section is provided in the *Hydrology Report*[1] and *Water Quality Report*[2] prepared for the Project (see **Appendix H** of this Draft Environmental Impact Report (EIR)).

Scoping Issues Addressed

Public comments related to hydrology and water quality were received during the public scoping period for this Draft EIR. The comments were from individuals and presented concerns over the potential for the Project to change the hydrology of the Project site and surrounding area, resulting in flooding or indirect changes to habitat for protected species. As presented in the analysis below, the Project design includes cross culverts to preserve the existing hydrology of the Project site and includes stormwater detention facilities to avoid flooding. A discussion of hydrology and its connection to biological resources on the Project site is provided in **Section 5.3, Biological Resources**.

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 United States (US) from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit.[3] Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal, industrial, and construction point sources to comply with the NPDES permit program. Important CWA sections relevant to hydrology and water quality include the following[4]:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 402 establishes the NPDES, a permitting system for the discharge of any pollutant into waters of the US, except for dredge or fills material. Regional Water Quality Control Boards (RWQCBs) administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial uses, construction, and municipal separate storm sewer systems (MS4s).

[1] BKF, 2018a. Hydrology Report - Dublin Boulevard-North Canyons Parkway Extension Project.
[2] BKF, 2018b. Water Quality Report - Dublin Boulevard-North Canyons Parkway Extension Project.
[3] A point source of pollution is any discrete conveyance such as a pipe or a man-made ditch.
[4] Refer to **Section 5.3, Biological Resources**, for a discussion of CWA Sections 401 and 404.

Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires the issuance of NPDES permits for MS4 discharge.[5] The Project site is within the San Francisco Bay RWQCB jurisdiction and is under an existing MS4. The Project site is also subject to the *California Regional Water Quality Control Board San Francisco Bay Region Municipal Regional Stormwater NPDES Permit* (MRP).[6] This permit includes provisions for permanent post-construction stormwater treatments for development and roadway projects outside the Caltrans right-of-way. The MRP in Alameda County is administered by the Alameda Countywide Clean Water Program (ACCWP), and requires post-construction stormwater treatment and hydromodification management for all new impervious components of roadway projects.[7] Hydromodification is changes in the timing and volume of runoff from a site. The ACCWP developed the *C.3 Stormwater Technical Guidance* manual to assist designers and reviewers in complying with post-construction stormwater treatment requirements.[8]

Construction General Permit

By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit.[9] Operators of regulated construction sites are required to develop stormwater pollution prevention plans (SWPPPs) outlining sediment, erosion, and pollution prevention control measures.

State

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. Under the Porter-Cologne Water Quality Control Act, the State Water Resources Control Board (SWRCB) has the ultimate authority over state water rights and water quality policy. This act requires a "Report of Waste Discharge" for any discharge of waste to land or surface waters that may impair beneficial uses for surface or groundwater of the state. Discharges under the Porter-Cologne Act are allowed when in compliance with Waste Discharge Requirements (WDRs), which may be required even when the discharge is already permitted or exempt under the CWA.

[5] The US Environmental Protection Agency defines an MS4 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 stormwater, that is designed or used for collecting or conveying stormwater."
[6] NPDES Permit No. CAS612008, SWRCB Order R2-2015-0049
[7] ACCWP, 2017. About the Clean Water Program. Available: https://www.cleanwaterprogram.org/index.php/about-us.html. Accessed: November 13, 2018.
[8] ACCWP, 2018. C.3 Stormwater Technical Guidance. Available: https://www.cleanwaterprogram.org/images/uploads/C3_Technical_Guidance_v6_Oct_2017_FINAL_Errata_updated_04.20.18.pdf. Accessed: November 13, 2018.
[9] NPDES Permit No. CAS000002, SWRCB Order No. 2009- 0009-DWQ

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB and RWQCB establish water quality standards and regulate discharges to ensure compliance with water quality standards. In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, water quality standards are developed for specific water body segments based on the designated beneficial use of that water body segment. The RWQCB is also responsible for implementation of Section 402 of CWA, as discussed above.

In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines waters are impaired with one or more constituents and the water quality standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

Local

City of Dublin

City of Dublin General Plan

The City of Dublin General Plan, Chapter 12, Environmental Resources Management: Water Resources Management contains information and polices related to the conservation and management of water resources, riparian corridors, and watershed lands within Dublin.[10] This element includes Dublin's goals pertaining to water quality, flood protection, and stormwater management, including the following guiding policies:

- Protect the quality and quantity of surface water and groundwater resources that serve the community
- Protect water quality by minimizing stormwater runoff and providing adequate stormwater facilities
- Minimize flooding in existing and future development, and design stormwater facilities to handle design-year flows based on buildout of the General Plan

City of Dublin Municipal Code

Chapter 7.74 (Stormwater Management and Discharge) of the Dublin Municipal Code controls discharges to municipal storm sewers from spills, dumping, or disposal; and reduces pollutants in stormwater discharges.[11] The purpose of this chapter is to ensure public health, safety, and general welfare by:

[10] City of Dublin, 2017. City of Dublin General Plan, Ch. 12 Environmental Resources Management: Water Resources Element. Available: https://www.dublin.ca.gov/DocumentCenter/View/10560/Chapter-12. Accessed: June 5, 2018.
[11] City of Dublin, 2017. Dublin Municipal Code, Ch. 7.74 Stormwater Management and Discharge Control. Available: https://www.dublin.ca.gov/DocumentCenter/View/570/Muni-Code-Section-774-Stormwater. Accessed: June 5, 2018.

- Eliminating non-stormwater discharges to the municipal separate storm sewer
- Controlling the discharge to municipal separate storm sewers from spills, dumping or disposal of materials other than stormwater
- Reducing pollutants in stormwater discharges to the maximum extent practicable

Alameda County

Alameda County Flood Control and Water Conservation District, Zone 7

The development or encroachment of built structures within floodplains and floodways is subject to FEMA requirements for maintenance of flood flow conveyance and floodplain storage. Zone 7 manages stormwater conveyances and flood channels within the region and requires that activities within these channels, including discharges of stormwater, obtain an encroachment permit.

Alameda County Watercourse Protection Ordinance

For unincorporated areas within Alameda County (County), the Watercourse Protection Ordinance restricts the discharge of pollutants to watercourses and the encroachment of new development into watercourses without first obtaining a permit from the County.[12] Implementation of this ordinance serves to protect surface water and groundwater recharge areas from erosion, sedimentation, and sources of pollution.

City of Livermore

City of Livermore General Plan

The Livermore General Plan, Chapter 8, Open Space and Conservation Element ensures the comprehensive and long-range preservation and management of open space land for the protection of natural resources, economic uses, outdoor recreation, and as a scenic resource. The Open Space and Conservation Element contains goals and policies regarding watersheds, wetlands, creeks, surface water, and groundwater quality and preservation.[13]

City of Livermore Municipal Code

The Livermore Municipal Code, Chapter 16.12, Flood Control Regulations minimizes public and private losses due to flood conditions through:[14]

- Restricting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities
- Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction
- Controlling the alteration of natural floodplains, stream channels and natural protective barriers which help accommodate or channel floodwaters

[12] Alameda County, 2018. *Alameda County, California - Municipal Code, Ch 13.12 Water Course Protection.* Available: https://library.municode.com/ca/alameda_county/codes/code_of_ordinances?nodeId=TIT13PUSE_CH13.12WAPR. Accessed: June 6, 2018.
[13] City of Livermore. 2004. City of Livermore General Plan 2003-2025. Amended December 2014.
[14] City of Livermore, 2018. Livermore Municipal Code. Ch. 16.12 Flood Control Regulations. Available: http://www.codepublishing.com/CA/Livermore/Municipal/Livermore16/Livermore1612.html. Accessed: June 5, 2018.

- Controlling the filling, grading, dredging and other development which may increase erosion or flood damage; prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas

EXISTING CONDITIONS

The hydrologic and water quality study area includes the Project site and areas in its immediate vicinity that could be affected by the Project. This includes areas north of the Project site that drain across the Project site, as well as areas to the south where stormwater flows into drainage systems that run along and cross Interstate 580 (I-580).

Climate and Topography

The climate in eastern Alameda County is characterized by warm, dry summers and mild, wet winters. The mean annual precipitation in the study area is approximately 14 inches, with precipitation occurring mostly in the months of October through April. Soils in the Project site exhibit a slow infiltration rate and high runoff potential, resulting in overland sheet flow throughout the study area.[15]

The topography of the study area ranges from gently rolling hills (10-20 percent grades) to the north, to relatively flat (5 percent grades) at the southern portion near I-580. From west to east, elevations throughout the Project site vary from approximately 370 feet above mean sea level (AMSL) near Fallon Road, to an approximately 420-foot AMSL high point in the middle of study area, to approximately 415 feet AMSL near Doolan Road. Existing slope conditions throughout the eastern portion of the study area cause much of the stormwater to drain directly into Cottonwood Creek. Runoff from other sections of the Project site flows both southerly and southwesterly (downslope) towards flatter terrain near I-580.

Surface Hydrology

Regionally, the Project site is within the San Francisco Bay RWQCB jurisdiction, within the South Bay Hydrologic Unit.[16,17] Locally, the Project site is within the Arroyo Mocho watershed and Lower Arroyo Mocho sub-watershed. No man-made drainage improvements exist within the undeveloped Project site, although there are several planned or existing systems at the Dublin Boulevard/Fallon Road and North Canyons Parkway/Doolan Road intersections. Local drainage from the study area flows north-to-south as sheet flow or concentrated flow through intermittent or ephemeral drainage areas following the natural topography before entering one of the three drainage systems that cross I-580:

- An east-west culvert within the Caltrans I-580 right-of-way that enters a stormwater collection system beneath Fallon Road before crossing under I-580 to the west

[15] Overland sheet flow refers to stormwater runoff that flows within a thin, shallow layer over the ground surface.
[16] Alameda Creek hydrologic area, hydrologic sub-area 204.30
[17] United States Geological Survey, 2018. Hydrologic Unit Maps. Available: https://water.usgs.gov/GIS/huc.html. Accessed: June 26, 2018.

- A north-south culvert crossing under Collier Canyon Road that extends to the south under I-580
- Cottonwood Creek, which flows into Arroyo Las Positas south of I-580 before entering Arroyo Mocho

After crossing I-580, all runoff from the Project site discharges into Arroyo Mocho, then flows into Alameda Creek and ultimately empties into the San Francisco Bay.

Cottonwood Creek

Aside from minor tributaries, Cottonwood Creek is the only surface water resource within the Project site, located west of Doolan Road. Cottonwood Creek is a natural, perennial stream[18] that traverses active grazing land. This feature flows generally north-to-southwest through Doolan Canyon, crosses under I-580, and enters Arroyo las Positas near the Las Positas Golf Course. The stream channel is approximately 6 to 10 feet wide at the toe of slope near I-580. The bottom substrate in Cottonwood Creek consists of gravel and native soil.[19]

Floodplains

There is one existing floodplain within the Project site along Cottonwood Creek.[20] This area has a 0.2 percent annual chance flood discharge contained in channel, indicating that Cottonwood Creek could be subject to a 500-year storm event, but the creek channel would adequately convey floodwaters. A deep incision in the floodplain contains the ordinary high water mark (OHWM).[21] The remainder of the Project site does not overlie flood hazard zones.

Groundwater

The Project site is within the boundaries of the Livermore Valley groundwater basin, which extends from the Pleasanton Ridge east to the Altamont Hills and from the Livermore Upland north to the Orinda Upland.[22] Surface drainage features include Arroyo Valle, Arroyo Mocho, and Arroyo las Positas as principal streams, with Alamo Creek, South San Ramon Creek, and Tassajara Creek as minor streams.

The Livermore Valley groundwater basin provides municipal, domestic, industrial and agricultural water supply. Alameda County Flood Control and Water Conservation District, Zone 7 maintains an annual hydrologic supply and demand inventory. The groundwater budget is essentially in balance under average hydrologic conditions, which means that annual groundwater usage is completely

[18] Perennial streams generally convey water year-round, under average conditions.
[19] Bay Area Rapid Transit Agency, 2017. BART to Livermore Extension Project EIR, Chapter G: Geology, Soils, Seismicity, Mineral, and Paleontological Resources. Available: http://www.bart.gov/sites/default/files/docs/BLVX%20DEIR_Vol%201_0_Cover-TOC.pdf. Accessed: November 13, 2018.
[20] BKF, 2018a.
[21] The OHWM is a jurisdictional benchmark for administering the US Army Corps of Engineers regulatory program in navigable waterways.
[22] California Department of Water Resources, 2006. California's Groundwater Bulletin 118 - Livermore Valley Groundwater Basin. Available: https://water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/2-10.pdf. Accessed: November 28, 2018.

replenished with recharge and groundwater is not being depleted. Historical geotechnical testing in the study area encountered groundwater approximately 10-39 feet below grade, but shallower groundwater levels may be present throughout the Project site, particularly at the Cottonwood Creek crossing.[23]

Water Quality

Beneficial Uses

The San Francisco Bay RWQCB identifies beneficial uses for water bodies within its jurisdiction. **Table 5.8-1** lists the identified beneficial uses for the two surface waterbodies that receive runoff discharged from the study area: Cottonwood Creek and Arroyo Mocho.

Table 5.8-1 Beneficial Uses – Cottonwood Creek and Arroyo Mocho

Water Body	Beneficial Uses								
	Groundwater Recharge	Commercial and Sport Fishing	Fish Migration	Preservation of Rare and Endangered Species	Fish Spawning	Warm Freshwater Habitat	Wildlife Habitat	Contact Water Recreation	Noncontact Water Recreation
Cottonwood Creek	-	-	-	X	-	X	X	X	X
Arroyo Mocho	X	X	X	-	X	X	X	X	X

Source: BKF, 2018b

303(d) Impaired Waters

Cottonwood Creek is not listed as a 303(d) impaired waterbody. Arroyo Mocho is a 303(d) Category 5 waterbody, which means this watercourse does not meet SWRCB water quality standards and a TMDL is required, but not yet completed, for at least one of the pollutants listed for this segment. Listed pollutants in Arroyo Mocho include; diazinon[24] related to urban stormwater runoff and temperature related to channelization, habitat modification, and removal of riparian vegetation.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for hydrology and water quality were derived from the Environmental Checklist in the California Environmental Quality Act (CEQA) Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this Project.

[23] BKF, 2018c. Geotechnical Feasibility Summary - Dublin Boulevard-North Canyons Parkway Extension Project.
[24] Diazinon is an insecticide used in agriculture to control insects on fruit, vegetable, nut, and field crops.

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria:

A. Result in or be subject to damage from inundation by mudflow

B. Violate any water quality standards or waste discharge requirements, create any substantial new sources of polluted runoff, or otherwise degrade surface water or groundwater quality

C. Place within a watercourse or flood hazard area structures which would impede or redirect flood flows, or otherwise substantially alter the existing drainage pattern of an area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation, or flood-related damage on- or offsite

D. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite

E. Substantially deplete groundwater supplies or interfere with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)

Methodology

This analysis cites two Project-specific reports outlining hydrology and water resources in the study area: *Water Quality Report* and *Hydrology Report*. The purpose of the *Water Quality Repor*t is to fulfill the requirements of CEQA and to provide information for NPDES permitting. The document includes a discussion of the following:

- General environmental setting of the study area
- Regulatory framework with respect to water quality
- Data on surface water within the study area
- Water quality impairments and beneficial uses
- Identifies potential water quality impacts/benefits associated with the Project
- Avoidance and/or minimization measures for potentially adverse impacts

The purpose of the *Hydrology Report* is to document existing stormwater flows and summarize improvements necessary to address the drainage needs of the Project.

Impact Analysis

No Impact Summary

A. Result in or be subject to damage from inundation by mudflow.

There is not a significant potential for mudflow due to the overall flatness of the Project site (see **Section 5.6, Geology and Soils**). No impact would occur.

Impacts of the Project

B. Violate any water quality standards or waste discharge requirements, create any substantial new sources of polluted runoff, or otherwise degrade surface water or groundwater quality.

Construction

Construction of the Project would involve ground disturbing activities such as excavation, trenching, grading, demolition, and vegetation removal, which could result in runoff that contains sediment and other pollutants that could degrade water quality if not properly controlled. Fueling or maintenance of construction vehicles would occur within the construction footprint during construction, which poses a risk of accidental spills or releases of fuels, oils, or other potentially toxic materials. An accidental release of these materials could pose a threat to water quality if contaminants enter storm drains, open channels, or surface water receiving bodies (i.e., Cottonwood Creek). Construction activities that intrude into the groundwater table or require dewatering could also introduce loose soils and pollutants, resulting in increased sedimentation and a temporary impact to groundwater quality.

The Project would be subject to a NPDES General Construction Permit, issued by the RWQCB, which would stipulate water quality control requirements. These requirements include the implementation of a SWPPP to identify potential pollutant sources and prescribe best management practices (BMPs) to avoid impacts to surface water or groundwater quality during construction. Such BMPs could include the following:

- Provide for waste management
- Establish proper building material staging areas
- Designate paint and concrete washout areas
- Establish proper equipment/vehicle fueling and maintenance practices
- Control equipment/vehicle washing and allowable non-stormwater discharges
- Develop a spill prevention and response plan

With implementation of required permit conditions, this impact would be **less than significant**.

Operation

During Project operation, stormwater that encounters the roadway may be exposed to common pollutants such as motor oil and dust that collect on impervious surfaces. Other than stormwater exposure to low levels of pollutants that accumulate on the roadway, Project operation would not create any other source of polluted runoff.

The NPDES MRP includes provisions for permanent post-construction stormwater treatment requirements related to roadway projects. The ACCWP administers Alameda County's MRP, and developed the *C.3 Stormwater Technical Guidance* manual to assist compliance with post-construction stormwater treatment requirements. The ACCWP *C.3 Stormwater Technical Guidance* manual outlines BMPs to reduce water pollution, including on-site source control measures and

Low Impact Development (LID) features.[25] These required C.3 post-construction protocols would ensure stormwater conveyance and treatment systems proposed as a part of the Project adequately treat runoff prior to discharge offsite.

The Project would include facilities to collect and treat surface runoff from impervious surfaces prior to discharge into the stormwater system which would be installed beneath the roadway surface within the operational area of the Project. Stormwater treatment facilities would include biofiltration swales proposed in the median and parkway strips, and if needed, detention basins at the base of embankments. Biofiltration is a pollution control technique using living material (vegetation) and sub-surface media such as sand and gravel to capture sediment and pollutants from stormwater runoff. Biofiltration swales are vegetated ditches with a layer of biofiltration media/soil underneath and a layer of permeable material with an underdrain (perforated plastic pipe) further below.

The Project would include stormwater inlets and stormdrain laterals to collect stormwater from biofiltration areas and direct it to a storm drain main located beneath the new roadway. This storm drain main would route stormwater generated on impervious surfaces to two locations:

- Stormwater generated west of the roadway's highest elevation point (located approximately in the middle of the Project site) would route towards a stormwater transmission system located under Fallon Road
- Stormwater generated east of the roadway's highest elevation point would discharge to Cottonwood Creek

These facilities would ensure stormwater collection and treatment would not compromise surface water quality or result in increased, uncontrolled stormwater flows to existing stormwater drainage facilities or receiving water bodies. Once operational, these facilities would also minimize the potential for groundwater quality degradation. As discussed, polluted stormwater generated within the roadway would be treated prior to discharge into pervious areas or drainages that provide a connection to groundwater. As a result of Project biofiltration components and the proposed storm drain, stormwater would continue to ultimately discharge to the same water bodies as it does under existing conditions. Given the above, this impact would be **less than significant**.

C. Place within a watercourse or flood hazard area structures which would impede or redirect flood flows, or otherwise substantially alter the existing drainage pattern of an area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation, or flood-related damage on- or offsite

And

[25] LID refers to systems and practices that can reduce runoff and pollutant loadings by managing runoff as close to its source(s) as possible. LID includes overall site design approaches and individual small-scale stormwater management practices that promote the use of natural systems for infiltration, evapotranspiration, and the harvesting and use of rainwater.

D. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite

Construction

Grading and earthmoving during construction would alter upland topography across the Project site, which directly influences the direction and timing of stormwater and flood flows. Construction-induced erosion could also temporarily increase sedimentation in receiving water bodies throughout the construction period. However, construction activities would be subject to SWPPP erosion-control requirements, and temporary disturbance areas used for equipment access and staging would be restored to pre-Project topography upon the completion of construction activities. Construction of the Cottonwood Creek bridge would not take place within the watercourse, or have direct impacts on the Creek itself. Therefore, construction activities would not permanently alter existing drainage patterns resulting in substantial erosion, siltation, or flood-related damage. This impact would be **less than significant**.

Operation

Cottonwood Creek Floodzone

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, the western portion of Project site is located within an area of minimal flood hazard, which is an area outside the 100-year and 500-year flood zones.[26] The Cottonwood Creek channel is a floodplain within the 500-year floodzone, but is large enough to contain the discharge of 100-year and 500-year storm events.

The Project would include a new bridge spanning Cottonwood Creek perpendicular to the channel. At this crossing, the top width of flood waters during a base flood event would be approximately 167 feet. Three rows of 2-foot diameter piers would be installed in the floodway to support the bridge. The piers would remove 6 feet of flow area from the 167-foot wide floodway (approximately 3.5 percent of the flow area), but would be outside of the Ordinary High Water Mark.

The *Hydrology Report* prepared for the Project included a hydraulic study of Cottonwood Creek to measure floodwaters flows during a 100-year storm event with and without the bridge pier obstruction. This hydraulic study confirmed a slight raise in water surface elevation (from a depth of 3.68 feet to 3.85 feet) immediately south of the bridge pier locations. However, this raise in water surface elevation would not occur further downstream or further upstream of the proposed Cottonwood Creek bridge. Furthermore, hydraulic modeling results demonstrate approximately 5.8 feet of freeboard between the 100-year flood event water surface and the bottom of bridge, which exceeds the minimum 1-foot of freeboard requirement established by the Alameda County Flood Control and Water Conservation District. Therefore, the Project would not substantially impede or redirect flood flows in the Cottonwood Creek channel that would result in substantial erosion, siltation, or flood-related damage. This impact would be **less than significant**.

[26] BKF 2018a

Dam Inundation

A 'dam inundation zone' is the area downslope of a dam structure that would flood in the event of a failure (breach) or uncontrolled release of water from the dam. The southwest portion of the study area is within the northern limit of the dam failure inundation hazard area for the Del Valle Dam.[27] Del Valle Dam is located approximately 5 miles southeast of the Project site and stores an average of 44,000 acre-feet of water in its reservoir. Del Valle Dam is under the jurisdiction of the California Department of Water Resources, Division of Safety of Dams. Existing dams under Department of Water resources jurisdiction are periodically inspected to ensure adequate maintenance and to direct the owner to correct any deficiencies found.[28] Regular inspections and required maintenance of the dams substantially reduce the potential for catastrophic failure. There are no state or local restrictions for development within dam failure inundation areas; however, the Emergency Services Act (Government Code Section 8589.5) requires that dam inundation maps be prepared to identify flood risk and that local jurisdictions prepare evacuation procedures in the event of a catastrophic dam failure. This impact would be **less than significant**.

As a linear roadway Project, the Project would not substantially increase exposure of persons or habitable structures to flooding from dam inundation. Additionally, based on the location of the Project site – which is partially within the northern limit of the inundation zone, described as an "upland area" in the County's General Plan – in the event of dam failure the study area would be inundated by 0 to a few feet of water. This would not pose a significant flooding hazard, and this impact would be **less than significant**.

Stormwater Runoff

Overall, the new roadway would create a barrier for sheet runoff flowing north to south following the Project site's natural topography. In order to account for this runoff barrier, the Project would include cross-culverts installed perpendicularly to the roadway to convey stormwater across the proposed roadway alignment. Swales[29] would be built along the north side of the Project to direct runoff to the culvert systems. Stormwater discharged from the cross-culverts would follow the existing downslope pattern south towards I-580, thereby preserving the prevailing stormwater drainage pattern on the Project site.

Pavement and other hardscape associated with the Project would increase the total impervious surface within the Arroyo Mocho watershed area by approximately 19 acres. An increase in impervious surfaces could increase stormwater runoff timing and volume. When a site is developed, much of the rainwater can no longer infiltrate into the soils, so it flows offsite at a faster rate and in greater volume. As a result, erosion may occur in creeks and channels downstream of the Project.

[27] Alameda County, 2012. Alameda County General Plan 2012.
[28] City of Livermore. 2004. City of Livermore General Plan 2003-2025. Amended December 2014.
[29] Swales are engineered landscape features which collect and treat stormwater before conveying it to the stormwater system. In this case, swales would direct stormwater from north of the Project site to cross culverts under the roadway.

In the County, certain projects must incorporate hydromodification techniques focused on retaining, detaining, or infiltrating runoff to ensure that post-project stormwater flows match pre-project stormwater flow patterns. The Project is subject to hydromodification requirements because it meets the following applicability criteria:

- The Project would include creation or replacement of 1 acre or more of impervious surface,
- The Project improvements would increase impervious surface over pre-Project conditions, AND
- The Project is located in a susceptible area for stormwater-related erosion, as shown on the default susceptibility map.

The ACCWP *C.3 Stormwater Technical Guidance* manual outlines hydromodification controls to reduce post-construction stormwater flow, including source control measures, LID features, and on-site structural hydromodification facilities. The proposed stormwater treatment system (biofiltration swales discussed above) would also operate as hydromodification controls to capture and slow stormwater runoff. In the event that during final design it is determined that biofiltration areas would not sufficiently reduce stormwater flows off-site, there are two additional components which could be implemented to handle stormwater flows: detention basins and an oversized underground storm drain.

Detention basins temporarily hold stormwater, letting sediment in the stormwater settle to the bottom of the basin, before discharging the water through an outlet. These facilities would provide stormwater storage and would regulate the discharge to the collecting water bodies. The precise number, location, and design of detention basins have not yet been determined, and would be developed, if needed, during final design. Therefore, the preliminary concept design for detention basins was utilized for the purposes of this study: detention basins would be installed within the operational footprint, most likely at the base of roadway embankments. Based on preliminary design, detention basins would be constructed up to 50 feet from the edge of pavement. In addition to biofiltration areas, detention basins would provide ample space in which to accommodate and treat stormwater. Alternatively, stormwater could be accommodated through oversized underground storm drain lines or underground storage vaults.[30]

These proposed facilities would be vetted against the ACCWP hydromodification requirements to ensure that new stormwater drainage systems have the capacity to receive new stormwater flow generated by the Project, eliminating the possibility of flooding. This impact would be **less than significant**.

[30] To ensure the totality of Project impacts are captured in this Draft EIR, this Draft EIR includes supplemental storage areas along the roadway and an oversized underground storm drain as a part of the project site.

E. Substantially deplete groundwater supplies or interfere with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

As discussed above, the Project would include cross-culverts to allow stormwater from the north to travel across the Project site and discharge south of the proposed roadway alignment, as it does under existing conditions. This routing would allow most stormwater runoff in the study area to percolate through pervious soils and recharge the groundwater aquifer or discharge into existing drainage systems outside of the Project site, as it does under existing conditions.

The Project would include 19 acres of new impervious surface, slightly reducing available pervious areas that allow stormwater runoff to infiltrate into the soils and recharge the groundwater aquifer. However, the new impervious surface that would be created as a part of the Project – 19 acres – represents less than 0.1 percent of the 69,600-acre Livermore Valley groundwater basin. Further, Project design and implementation of LID features would contribute to groundwater recharge at the Project site. As such, impervious surfaces introduced as a component of the Project would not substantially interfere with groundwater recharge such that substantial depletion of groundwater supply would occur. Furthermore, Project operation would not increase water demand that would contribute to lowering of the groundwater table, as Project operation would not require the regular use of water. This impact would be **less than significant**.

CUMULATIVE IMPACTS

Construction and operation of the Project, in combination with past, present, and foreseeable future cumulative development, could encounter surface water and groundwater resources within the regional watersheds and groundwater basins. Other projects in the area include past and planned residential, commercial, and infrastructure development projects in Dublin, Livermore, and elsewhere around the study area (see **Chapter 4.0, Introduction to Environmental Analysis**).

In general, construction of past, present, and foreseeable future projects could alter surface water drainage patterns, modify watercourse capacity and water flow height, increase erosion and sedimentation, degrade surface water or groundwater quality, and increase flood risks by altering flood hazard areas. Potential long-term effects associated with past, present, and foreseeable future projects operation could increase stormwater runoff speed and rates, permanently alter watercourse hydraulic capacity, degrade surface water or groundwater quality, increase flood heights, or decrease groundwater recharge. However, all development in the vicinity of the Project site and within the watershed would be subject to federal, state, and local regulations designed to control stormwater runoff, require construction-period pollution controls, prevent floodplain development, ensure adequate groundwater recharge, and otherwise protect hydrologic resources and water quality. The Project would alter the hydrology along the 1.5 mile roadway alignment, resulting in stormwater from the Project being directed to the west (to Fallon Road drainage system) or east (to Cottonwood Creek). However, the Project has been designed to ensure the greater hydrology of the study area, in which stormwater moves generally from north to south, would be preserved through culverts. Future development would be independently responsible for

evaluating hydrology and water quality impacts, and would be subject to mitigation from prior EIRs such as the Dublin General Plan EIR, EDSP EIR, and the Fallon Village SEIR. These EIRs evaluated future development in the study area holistically, including cumulative analysis. Due to existing regulatory and permitting requirements, the Project design, and mitigation requirements from prior EIRs, the Project would not result in a cumulatively considerable contribution to any significant cumulative impacts associated with hydrology or water quality. No cumulative impact would occur.

REFERENCES

ACCWP, 2017. *About the Clean Water Program*. Available: https://www.cleanwaterprogram.org/index.php/about-us.html. Accessed: November 13, 2018.

ACCWP, 2018. *C.3 Stormwater Technical Guidance*. Available: https://www.cleanwaterprogram.org/images/uploads/C3_Technical_Guidance_v6_Oct_2017_FINAL_Errata_updated_04.20.18.pdf. Accessed: November 13, 2018.

Alameda County, 2018. *Alameda County, California - Municipal Code, Ch 13.12 Water Course Protection.* Available: https://library.municode.com/ca/alameda_county/codes/code_of_ordinances?nodeId=TIT13PUSE_CH13.12WAPR. Accessed: June 6, 2018.

Bay Area Rapid Transit Agency, 2017. *BART to Livermore Extension Project EIR, Chapter G: Geology, Soils, Seismicity, Mineral, and Paleontological Resources.* Available: http://www.bart.gov/sites/default/files/docs/BLVX%20DEIR_Vol%201_0_Cover-TOC.pdf. Accessed: November 13, 2018.

California Department of Water Resources, 2006. *California's Groundwater Bulletin 118 - Livermore Valley Groundwater Basin*. Available: https://water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/2-10.pdf. Accessed: November 12, 2018.

City of Dublin, 2017. *City of Dublin General Plan*. Available: https://www.dublin.ca.gov/DocumentCenter/View/10560/Chapter-12. Accessed: June 5, 2018.

City of Dublin, 2017. *Dublin Municipal Code, Ch. 7.74 Stormwater Management and Discharge Control*. Available: https://www.dublin.ca.gov/DocumentCenter/View/570/Muni-Code-Section-774-Stormwater. Accessed: June 5, 2018.

City of Livermore, 2018. *Livermore Municipal Code. Ch. 16.12 Flood Control Regulations.* Available: http://www.codepublishing.com/CA/Livermore/Municipal/Livermore16/Livermore1612.html. Accessed: June 5, 2018.

United States Geological Survey, 2018. *Hydrologic Unit Maps*. Available: https://water.usgs.gov/GIS/huc.html. Accessed: June 26, 2018.

This Page Intentionally Left Blank

5.9 LAND USE AND PLANNING

INTRODUCTION

This section evaluates impacts associated with land use and planning that could occur with implementation of the Project. Sources of information used to prepare the analysis in this section include:

- City of Dublin General Plan (2016)
- Eastern Dublin Specific Plan (2016)
- City of Dublin Zoning Ordinance
- Alameda County General Plan, East County Area Plan (2002)
- City of Livermore General Plan (2014)
- Livermore Municipal Airport Land Use Compatibility Plan (2012)
- *Community Impact Assessment* (CIA) prepared for the Project[1]

These documents are available on file with the City of Dublin at 100 Civic Plaza, Dublin, California.

Scoping Issues Addressed

During the public scoping period for this Draft environmental impact report (EIR), comments regarding land use and planning were raised. Comments were from individuals and local groups and generally relate to the following concerns:

- Urban growth limits of Dublin and Livermore and how would they change as a result of the Project
- If the Project would indirectly allow for development of County lands along the proposed road alignment, which are zoned for Resource management and Large Parcel Agriculture use
- That the Project would indirectly or cumulatively result in the decline of agricultural use on land within the County adjacent to the Project
- That the Project would encourage development in eastern Dublin

[1] A Community Impact Assessment (CIA) evaluates land use, growth, and community character, traffic and transportation/pedestrian and bicycle facilities, and public involvement that may result from the implementation of the project.

As discussed below, the Project would not result in any change to existing land use, and would support implementation of long-range planning documents adopted by Dublin, the County, and Livermore. Agricultural resources are discussed in detail in **Section 4.2, Effects Not Found to be Significant**.

REGULATORY SETTING

Federal

There are no applicable federal regulations.

State

State Aeronautics Act

The State Aeronautics Act requires each county with an airport to establish an Airport Land Use Commission to regulate land use around airports, to protect public safety and ensure that land uses near airports do not interfere with aviation operations. The Livermore Municipal Airport Land Use Compatibility Plan (ALUCP) regulates land use around Livermore Municipal Airport by requiring compliance with the applicable policies. In certain circumstances, local governments have the ability to override the decisions of the Airport Land Use Commission by a two-thirds vote. The Livermore Municipal Airport and ALUCP are discussed in more detail in **Section 5.7, Hazards and Hazardous Materials**.

Local

City of Dublin

City of Dublin General Plan

Dublin's General Plan is the comprehensive planning document which governs development within the City. The plan sets forth goals, policies, and programs for the growth and development of Dublin. The General Plan is composed of 12 elements and identifies policies to protect and enhance the features and services which signify the quality of life of the community which it serves. The General Plan includes the extension of Dublin Boulevard eastward through Dublin to connect with North Canyons Parkway. The following policies are relevant to the Project[2]:

Policy 2.7.4.2:	All non-residential development must be consistent with the policies and guidelines set forth in applicable Specific Plans.
Guiding Policy 3.2.1.A.1:	Preservation of oak woodlands, riparian vegetation, and natural creeks as open space for their natural resource value is of the highest importance. Limited modifications may be permitted on a case-by-case basis with adequate mitigation to replace disturbed resources.

[2] Each topic discussion in this Draft EIR includes a summary of relevant policies. Some policies are applicable to multiple environmental topics, and are therefore listed in multiple sections.

Implementing Policy 3.2.1.B.2:	Encourage an efficient and higher intensity use of the flat and gently sloping portions of the planning areas a means of minimizing grading requirements and potential impacts to environmental and aesthetic resources.
Guiding Policy 3.4.1.A.3:	Restrict structures on the hillsides that appear to project above major ridgelines. The present undisturbed natural ridgelines as seen from the Primary Planning Area and key travel corridors are an essential component of Dublin's appearance as a freestanding city ringed by open hills.
Implementing Policy 3.4.1.B.4:	Use subdivision design and site design review process to preserve or enhance the ridgelines that form the skyline as viewed from freeways (I-580 or I-680) or major arterial streets (Dublin Boulevard, Amador Valley Boulevard, San Ramon Road, Village Parkway, Dougherty Road, Tassajara Road, and Fallon Road).
Guiding Policy 3.4.2A.3:	Using the natural stream corridors and major ridgelines, establish a comprehensive, integrated trail network within the Planning Area that permits safe and convenient pedestrian and bicycle access within urban areas and between urban areas and open space areas. Per the 2005 Fallon Village amendment, in order to preserve biological resources, trails in Fallon Village will not be placed along ridgelines and in stream corridors.
Guiding Policy 5.2.2.A.1:	Design streets to (1) include sufficient capacity for projected traffic, (2) minimize congested conditions during peak hours of operation at intersections, (3) serve a variety of transportation modes including vehicles, bicycles, pedestrians and transit, and variety of users including people with disabilities, children, and seniors, (4) provide continuity with existing streets, and (5) allow convenient access to planned land uses.
Guiding Policy 5.2.2.A.3:	The goals, policies, and implementation measures for street design in Section 10.8 of the Community Design and Sustainability Element should be consulted when new streets are being designed and/or existing streets are being modified.
Guiding Policy 5.2.2.A.4:	Reserve right-of-way and construct improvements necessary to allow streets to accommodate projected vehicular traffic with the least friction.

Guiding Policy 5.2.2.A.5:	The City shall consider the Tri-Valley Transportation Plan and Action Plan and the City of Dublin Complete Streets Policy when adopting or amending the Circulation Element of the General Plan, Specific Plans, Zoning Ordinances or the Capital Improvement Program.
Implementing Policy 5.2.2.B.1:	Design streets according to the forecasted demand and maximum design speeds listed above, and to the detailed standards set forth in the City of Dublin's Street Design Standards and Standard Plans which are maintained by the Public Works Department, as well as the listed Additional Policies.
Implementing Policy 5.2.2.B.2:	Design and construct all roads in the City's circulation network as defined in Figure 5-1 as well as bicycle and pedestrian networks as defined in the City of Dublin Bicycle and Pedestrian Master Plan.

Eastern Dublin Specific Plan

The Eastern Dublin Specific Plan (EDSP) is a planning and regulatory tool which implements the City's General Plan by providing a framework to guide future land use and development decisions in eastern Dublin. The EDSP includes policies and programs, and includes regulations that provide an intermediate level of detail between the general plan and individual development projects. The EDSP includes the extension of Dublin Boulevard eastward through the plan area to connect with North Canyons Parkway in Livermore. The following goals and policies are relevant to the Project:

Goal: To provide a circulation system for eastern Dublin that is convenient and efficient, and encourages the use of alternative modes of transportation as a means of improving community character and reducing environmental impacts.

Policy 5-4:	Provide four, six and eight lane arterial streets to carry major community and sub-regional traffic through the Specific Plan area.

Additional discussion of EDSP policies as they relate to the Project is provided in **Section 5.14, Transportation and Traffic**.

City of Dublin Zoning Ordinance

The Dublin Zoning Ordinance implements the land use designations discussed in the General Plan. The land use study area land use designations include residential, industrial, office, open space, and commercial uses in Dublin; resource management and large parcel agricultural uses in the County; and business and commercial uses in Livermore. In Dublin, residential, industrial, office, and commercial land uses have not yet been developed in the immediate land use study area, and existing agricultural land uses are permitted non-conforming uses.

Alameda County

Alameda County General Plan, East County Area Plan

The East County Area Plan is a portion of the Alameda County General Plan adopted by the County's Board of Supervisors in 1994. Since adoption, the East County Area Plan has been amended several times, most recently in 2002. The East County Area Plan is a long-range planning document that serves to present a clear vision of the County's intent for future development and resource conservation in the eastern part of the County. As stated in the East County Area Plan, policies presented in the document remain in effect in perpetuity, or until modified by County voters.

The East County Area Plan includes the extension of Dublin Boulevard through unincorporated County land between Dublin and Livermore. The following East County Area Plan policies are relevant to the Project:

Urban and Rural Development

Policy 11: The County shall support phased development in East Dublin to provide for the efficient planning of infrastructure and prevent urban sprawl in the Dublin Hills. The County shall encourage the City of Dublin to include the 600 acre Santa Rita property in the first phase of development.

General Open Space

Policy 51: The County shall work with East County cities to preserve a continuous open space system outside the Urban Growth Boundary with priority given to the permanent protection of the Resource Management area between Dublin and North Livermore and the area north of the Urban Growth Boundary in North Livermore, as established through Program 19.

Policy 52: The County shall preserve open space areas for the protection of public health and safety, provision of recreational opportunities, production of natural resources (e.g., agriculture, windpower, and mineral extraction), protection of sensitive viewsheds (see definition in Table 1), preservation of biological resources, and the physical separation between neighboring communities.

Community Separators

Policy 109: The County shall preserve community separators largely in open space in the following locations:

1. The Resource Management area of approximately 7,400 acres separating East Dublin and North Livermore

Viewsheds

Policy 112: The County shall require development to maximize views of the following prominent visual features: The major ridgelines listed in Policy 105

Landscaping

Policy 114: The County shall require the use of landscaping in both rural and urban areas to enhance the scenic quality of the area and to screen undesirable views. Choice of plants should be based on compatibility with surrounding vegetation, drought-tolerance, and suitability to site conditions; and in rural areas, habitat value and fire retardance.

Policy 115: In all cases appropriate building materials, landscaping and screening shall be required to minimize the visual impact of development. Development shall blend with and be subordinate to the environment and character of the area where located, so as to be as unobtrusive as possible and not detract from the natural, open space or visual qualities of the area. To the maximum extent practicable, all exterior lighting must be located, designed and shielded so as to confine direct rays to the parcel where the lighting is located.

Alteration of Landforms

Policy 116: To the maximum extent possible, development shall be located and designed to conform with rather than change natural landforms. The alteration of natural topography, vegetation, and other characteristics by grading, excavating, filling or other development activity shall be minimized. To the extent feasible, access roads shall be consolidated and located where they are least visible from public view points.

Grading

Policy 117: The County shall require that where grading is necessary, the off-site visibility of cut and fill slopes and drainage improvements is minimized. Graded slopes shall be designed to simulate natural contours and support vegetation to blend with surrounding undisturbed slopes.

City of Livermore

City of Livermore General Plan

The City of Livermore General Plan 2003-2025 provides long-range land use planning goals, objectives, and policies for Livermore. Livermore's General Plan includes the connection of North Canyons Parkway and Dublin Boulevard. As such, the following objectives and policies are relevant to the Project:

Policy LU-4.4-P2: Development in the Airport Influence Area, depicted in Figure 3-5.1, shall be in conformance with the Livermore Airport Land Use Compatibility Plan ("ALUCP"), dated August 2012. Land uses shall be consistent with this General Plan, the Livermore Development Code, and the Land and Use and Safety Compatibility Criteria contained in Table 2-3 and Table 3-2 of the

ALUCP. Existing Land Uses, as defined in Section 2.4 of the ALUCP, are not subject to the policies of the ALUC. ALUCP Section 2.7.5.7 lists other special conditions where ALUC authority may be limited. (Resolution 2013-113)

Objective LU-5.1: Maintain an Urban Growth Boundary to protect open space and agricultural uses in North Livermore.

Objective LU-5.5: Coordinate land use planning for the area north of I-580 between Livermore and Dublin with Alameda County and the City of Dublin so as to increase certainty over future land uses, to reduce speculation, and to enhance preservation of open space.

Policy LU-5.5-P1: Encourage the cooperation of Alameda County, Livermore, and Dublin in coordinating land uses adjacent to the Doolan Canyon-North Livermore area.

Livermore Municipal Airport Land Use Compatibility Plan

As described above, the Livermore Municipal ALUCP governs development within the vicinity of the Livermore Municipal Airport. The ALUCP guides the Airport Land Use Commission and local jurisdictions by providing compatibility criteria for noise, safety, and airspace protection.

EXISTING CONDITIONS

Existing Land Uses and Zoning

The land use study area, as shown in **Figure 3-3a, Figure 3-3b**, and **Figure 3-4,** encompasses parcels intersected by the Project site, as well as adjacent land uses. The land use study area primarily consists of undeveloped grazing ranchland and open space, with intermittent rural development such as private paved and unpaved roads, fences, barns, corrals, wells, water tanks, and various outbuildings. Properties associated large plots of grazing ranchland are located off of Croak Road, Collier Canyon Road, and North Canyons Parkway.

The Project site traverses several land use designations, including commercial, office, and industrial designations in Dublin – which represent planned future uses as described in Dublin's General Plan and the EDSP – and resource management and large parcel agriculture designations in the County. In Livermore, adjacent to the eastern terminus of the Project site, land use designations include hillside conservation and commercial. The Livermore General Plan has requirements for Planned Development (PD) zones in Livermore; however, there are no PD zones near the Project site or surrounding areas. **Figure 3-3a**, **Figure 3-3b**, and **Figure 3-4** depict land uses in the land use study area. Within Dublin, the Project site and surrounding areas are zoned PD. The purpose of the PD zone is to:

- Establish a Planned Development Zoning District through which one or more properties are planned as a unit with development standards tailored to the site.
- Provide maximum flexibility and diversification in the development of property.

- Maintain consistency with, and implement the provisions of, the Dublin General Plan and applicable Specific Plans.
- Protect the integrity and character of both residential and non-residential areas of the City.
- Encourage efficient use of land for preservation of sensitive environmental areas such as open space areas and topographic features.
- Provide for effective development of public facilities and services for the site.
- Encourage use of design features to achieve development that is compatible with the area.
- Allow for creative and imaginative design that will promote amenities beyond those expected in conventional developments

Land Uses in the Project Vicinity

West

The Fallon Gateway shopping center is located southwest of the Fallon Road/Dublin Boulevard intersection. Operating businesses include Target, Dick's Sports, Panera Bread, Guitar Center, and BJ's Restaurant and Brew House, among others.

North

Residential communities are located along Central Parkway and Fallon Road. Communities to the northwest are composed of single-family residential and medium-density residential development.

East

The areas east of Doolan Road and south of I-580 are primarily commercial and industrial developments. Land dedicated to Hillside Conservation is located north of North Canyons Parkway.

South

I-580 is located directly south of the land use study area. The San Francisco Premium Outlets are located south of I-580. General commercial and commercial/campus office land uses are located southeast of the Project site, adjacent to eastbound I-580.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for land use and planning were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this Project.

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria:

A. Physically divide an established community

B. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect

Methodology

As listed above, several planning documents were used to establish the land use study area, which was then surveyed during a site visit and photographed in order to determine existing conditions onsite. To determine potential impacts, the impact significance criteria identified above were applied to construction and operation of the Project.

Impact Analysis

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. Physically divide an established community

During Project construction, no changes to access between or within existing communities would occur. The Project site is primarily in an undeveloped area, but includes the Dublin Boulevard/Fallon Road, Doolan Road/North Canyons Parkway and the new Croak Road intersections. These intersections are at the edge of developed areas in Dublin and Livermore. Temporary intersection closures may be required during construction, and detour routes would be provided within each jurisdiction.

The Project would improve east-west local roadway connectivity between Dublin and Livermore and improve mobility, multimodal access, and efficiency for all roadway users. Once operational, the Project would provide local access between Dublin and Livermore for pedestrians, bicyclists, transit users, and drivers. The Project would contribute to connectivity between Priority Development Areas (PDAs) in Dublin, Livermore, and Pleasanton. Additionally, the Project would provide roadway access to developable parts of eastern Dublin, as specified in Dublin's General Plan and the EDSP. Under existing conditions, there are no urban uses developed to the immediate north or south of the Project site, and therefore the construction and addition of a roadway and ancillary components would not divide an established community. Given this, implementation of the Project would have a beneficial impact to local connectivity, and would not divide an established community. This impact would be **less than significant**.

B. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect

The extension of Dublin Boulevard from its current terminus in eastern Dublin to the intersection of Doolan Road/North Canyons Parkway in Livermore is described in various regional and local land use planning documents, including:

- Plan Bay Area 2035
- City of Dublin General Plan (2016)
- Eastern Dublin Specific Plan (2016)
- Fallon Village SEIR (2005)
- Alameda County General Plan, East County Area Plan (2002)
- Livermore's General Plan Circulation Element (2014)

The documents listed above describe a four to six lane roadway extension of Dublin Boulevard from Fallon Road to Doolan Road/North Canyon Parkway. The Project was envisioned to satisfy an unmet need for additional local circulation and access to potentially developable areas in Dublin, as first established in the Dublin General Plan EIR (1984) and consecutive planning documents prepared since that time. The Project would allow for the extension of bus service, would connect future development areas to regional transit (BART), and would include bike lanes and a multi-use pathway. Indirectly, the Project would support local and regional efforts to relieve traffic congestion on I-580 by providing a local route for intra- and inter-city trips.

Dublin will review and approve the final Project design and will be responsible for issuing building permits within their jurisdiction. As a part of the Project review process, City staff and decision makers will review the final Project design to ensure consistency with applicable General Plan and EDPS policies. Similarly, the County will separately review and approve of the Project and issue building permits within their jurisdiction. The Project site would end at the border of the County and Livermore; however, construction may require temporary closure of the Doolan Road/North Canyons Parkway intersection in Livermore. The intersection would generally remain operational for the construction period. This would be coordinated with Livermore, and would require their approval. Construction of the new Croak Road intersection would also create a temporary closure in this area of Dublin. See **Section 5.14, Transportation and Traffic** for a detailed discussion regarding construction access. As the physical improvements of the Project are within Dublin and the County, consistency with Livermore plans and policies is generally limited to consideration of indirect effects and construction-period effects such as aesthetics, noise, air quality, and traffic. An analysis of these topics is provided in their respective sections of this document and takes into consideration Livermore's General Plan and municipal code. A policy consistency analysis for Dublin, the County, and Livermore is provided in **Table 5.9-1** below.

Table 5.9-1 Land Use Policy Consistency

Policy		Project Consistency
Dublin		
General Plan		
2.7.4.2	All non-residential development must be consistent with the policies and guidelines set forth in applicable Specific Plans.	Consistent: The Project is consistent with the EDSP, and will include roadway features such as street trees as discussed in the EDSP.
3.2.1.A.1	Preservation of oak woodlands, riparian vegetation, and natural creeks as open space for their natural resource value is of the highest important. Limited modifications may be permitted on a case-by-case basis with adequate mitigation to replace disturbed resources.	Consistent: The Project design takes into consideration the riparian areas around Cottonwood Creek to minimize disruption to the area.
3.2.1.B.2	Encourage an efficient and higher intensity use of the flat and gently sloping portions of the planning areas a means of minimizing grading requirements and potential impacts to environmental and aesthetic resources.	Consistent: The proposed roadway alignment has been selected with careful consideration to minimize the need for grading while balancing a variety of other factors, including maintaining useful and acceptable parcel sizes in the Eastern Extended Planning Area (EEPA). This indirectly supports future development of the flatter areas in the EEPA.
3.4.1.A.3	Restrict structures on the hillsides that appear to project above major ridgelines. The present undisturbed natural ridgelines as seen from the Primary Planning Area and key travel corridors are an essential component of Dublin's appearance as a freestanding city ringed by open hills.	Consistent: The Project would not include any structures which would project above any ridgeline.
3.4.1.B.4	Use subdivision design and site design review process to preserve or enhance the ridgelines that form the skyline as viewed from freeways (I-580 or I-680) or major arterial streets (Dublin Boulevard, Amador Valley Boulevard, San Ramon Road, Village Parkway, Dougherty Road, Tassajara Road, and Fallon Road).	Consistent: See response to Policy 3.4.1.A.3 above.

Policy		Project Consistency
3.4.2.A.3	Using the natural stream corridors and major ridgelines, establish a comprehensive, integrated trail network within the Planning Area that permits safe and convenient pedestrian and bicycle access within urban areas and between urban areas and open space areas. Per the 2005 Fallon Village amendment, in order to preserve biological resources, trails in Fallon Village will not be placed along ridgelines and in stream corridors.	Consistent: The Project would provide pedestrian and bicycle access between developed areas of Dublin and Livermore. Access would be adjacent to the roadway travel lanes, and would not allow pedestrians or bicyclists to access ridgelines or stream corridors.
5.2.2.A.1	Design streets to (1) include sufficient capacity for projected traffic, (2) minimize congested conditions during peak hours of operation at intersections, (3) serve a variety of transportation modes including vehicles, bicycles, pedestrians and transit, and variety of users including people with disabilities, children, and seniors, (4) provide continuity with existing streets, and (5) allow convenient access to planned land uses.	Consistent: The Project has been designed to provide the optimal number of travel lanes based on traffic demand analysis (see **Appendix D**), and would include a four-lane segment and six-lane segment. The Project would include multi-modal elements to serve all users. The Project would include a roadway extension that provides continuity with existing Dublin Boulevard, and would provide access to planned land uses in eastern Dublin.
5.2.2.A.3	The goals, policies, and implementation measures for street design in Section 10.8 of the Community Design and Sustainability Element should be consulted when new streets are being designed and/or existing streets are being modified.	Consistent: As required by this policy, the final Project design would be consistent with street design standards.
5.2.2.A.4	Reserve right-of-way and construct improvements necessary to allow streets to accommodate projected vehicular traffic with the least friction.	Consistent: See response to Policy 5.2.2.A.1 above.
5.2.2.A.5	The City shall consider the Tri-Valley Transportation Plan and Action Plan and the City of Dublin Complete Streets Policy when adopting or amending the Circulation Element of the General Plan, Specific Plans, Zoning Ordinances or the Capital Improvement Program.	Consistent: Before final Project approval, Dublin would adopt a General Plan amendment to specify the number of travel lanes proposed. As required, Dublin will take into consideration the listed planning and policy documents.
5.2.2.B.1	Design streets according to the forecasted demand and maximum design speeds listed above, and to the detailed standards set forth in the City of Dublin's Street Design Standards and Standard Plans which are maintained by the Public Works Department, as well as the listed Additional Policies.	Consistent: See response to Policy 5.2.2.A.1 and Policy 5.2.2.A.3 above.

Policy		Project Consistency
5.2.2.B.2	Design and construct all roads in the City's circulation network as defined in Figure 5-1 as well as bicycle and pedestrian networks as defined in the City of Dublin Bicycle and Pedestrian Master Plan.	Consistent: The Project would implement the extension of Dublin Boulevard as indicated in the General Plan, and would be consistent with planned facilities in the Bicycle and Pedestrian Master Plan through inclusion of bicycle and pedestrian facilities.
Eastern Dublin Specific Plan		
Goal	To provide a circulation system for eastern Dublin that is convenient and efficient, and encourages the use of alternative modes of transportation as a means of improving community character and reducing environmental impacts.	Consistent: See response to Policy 3.2.1.A.1, Policy 3.2.1.B.2, Policy 3.4.2.A.3, and Policy 5.2.2.A.1 above.
Policy 5-4	Provide four, six and eight lane arterial streets to carry major community and sub-regional traffic through the Specific Plan area.	Consistent: See response to Policy 5.2.2.A.1 above. The Project would provide new circulation access for local traffic between developed areas of Dublin and eastern Dublin, as well as access between Dublin and Livermore.
County		
Policy 51:	The County shall work with East County cities to preserve a continuous open space system outside the Urban Growth Boundary with priority given to the permanent protection of the Resource Management area between Dublin and North Livermore and the area north of the Urban Growth Boundary in North Livermore, as established through Program 19.	Consistent: The Project would not alter existing land use or compromise open space uses in the County. The Project would include implementation of a planned roadway connection between Dublin and Livermore, traversing unincorporated areas of the County, as described in the County's planning documents (East County Area Plan).
Policy 52:	The County shall preserve open space areas for the protection of public health and safety, provision of recreational opportunities, production of natural resources (e.g., agriculture, wind power, and mineral extraction), protection of sensitive viewsheds (see definition in Table 1), preservation of biological resources, and the physical separation between neighboring communities.	Consistent: See response to Policy 51 above.
Policy 109:	The County shall preserve community separators largely in open space in the following locations: 1. The Resource Management area of approximately 7,400 acres separating East Dublin and North Livermore	Consistent: See response to Policy 51 above.

Policy		Project Consistency
Policy 112:	The County shall require development to maximize views of the following prominent visual features: 1. The major ridgelines listed in Policy 105	Consistent: The Project would not impede upon views of the ridgeline to the north of the Project site; Project features would primarily be at ground level with the exception of trees and streetlights. These vertical features would not block views of the ridgeline.
Policy 114:	The County shall require the use of landscaping in both rural and urban areas to enhance the scenic quality of the area and to screen undesirable views. Choice of plants should be based on compatibility with surrounding vegetation, drought-tolerance, and suitability to site conditions; and in rural areas, habitat value and fire retardance.	Consistent: The Project design includes landscaping in bioretention areas and street trees. Final species selection would be coordinated with the County and subject to County approval.
Policy 115:	In all cases appropriate building materials, landscaping and screening shall be required to minimize the visual impact of development. Development shall blend with and be subordinate to the environment and character of the area where located, so as to be as unobtrusive as possible and not detract from the natural, open space or visual qualities of the area. To the maximum extent practicable, all exterior lighting must be located, designed and shielded so as to confine direct rays to the parcel where the lighting is located.	Consistent: The finishes and final landscaping choices for the Project would be subject to County approval. The Project design is intended to minimize changes to the landscape. For a further discussion of aesthetics and aesthetic treatments, refer to **Section 5.1, Aesthetics**.
Policy 116:	To the maximum extent possible, development shall be located and designed to conform with rather than change natural landforms. The alteration of natural topography, vegetation, and other characteristics by grading, excavating, filling or other development activity shall be minimized. To the extent feasible, access roads shall be consolidated and located where they are least visible from public view points.	Consistent: The proposed roadway alignment and design has been selected to minimize the need for grading and topographical alterations, while balancing the need for functional and appropriate parcel sizes and avoidance of existing structures.
Policy 117:	The County shall require that where grading is necessary, the off-site visibility of cut and fill slopes and drainage improvements is minimized. Graded slopes shall be designed to simulate natural contours and support vegetation to blend with surrounding undisturbed slopes.	Consistent: See response to Policy 116 above. For a further discussion of aesthetic treatments, refer to **Section 5.1, Aesthetics**.

Policy		Project Consistency
Livermore		
Policy LU-4.4-P2	Development in the Airport Influence Area, depicted in Figure 3-5.1, shall be in conformance with the Livermore Airport Land Use Compatibility Plan ("ALUCP"), dated August 2012. Land uses shall be consistent with this General Plan, the Livermore Development Code, and the Land and Use and Safety Compatibility Criteria contained in Table 2-3 and Table 3-2 of the ALUCP. Existing Land Uses, as defined in Section 2.4 of the ALUCP, are not subject to the policies of the ALUC. ALUCP Section 2.7.5.7 lists other special conditions where ALUC authority may be limited. (Resolution 2013-113)	Consistent: The Project site is located within the Livermore Municipal Airport Influence Area, including the Zone 6 and Zone 7. As a roadway development, the Project is classified as a 'Utilities' land use, which is considered a permitted use in Zones 6 and 7 according the Safety Compatibility Criteria.
Objective LU-5.1	Maintain an Urban Growth Boundary to protect open space and agricultural uses in North Livermore.	Consistent: The Project would not alter existing land use or compromise open space or agricultural land uses in Livermore. The Project would include implementation of a planned roadway connection between Dublin and Livermore, traversing unincorporated areas of the County, as described in Livermore's General Plan.
Objective LU-5.5	Coordinate land use planning for the area north of I-580 between Livermore and Dublin with Alameda County and the City of Dublin so as to increase certainty over future land uses, to reduce speculation, and to enhance preservation of open space.	Consistent: All three jurisdictions have worked in close coordination on the development of this Project, including establishment of the MOU between Dublin and Livermore pertaining to Project design implementation.
Policy LU-5.5-P1	Encourage the cooperation of Alameda County, Livermore, and Dublin in coordinating land uses adjacent to the Doolan Canyon-North Livermore area.	Consistent: See response to Policy 51, Objective LU-5.1, and Objective LU-5.5 above.

Source: City of Dublin, 2016; Alameda County, 2002; Circlepoint, 2018

The Project is described as a four lane or six lane roadway in the general plan documents of Dublin, the County, and Livermore. Following completion of the EIR and as a part of final Project approval, Dublin will amend its General Plan to specify the Project includes a four lane segment and a six lane segment. With City Council approval of the Project and certification of the EIR, the Project would be consistent with the General Plan. At their discretion, the County and Livermore may amend their General Plans based on their independent determination of whether the final Project design warrants an amendment. Based on the foregoing, the Project would not conflict with any applicable land use plan, policy, or regulation, and the impact would be **less than significant**.

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and planned residential, commercial, and infrastructure development projects in Dublin, Livermore, and elsewhere around the study area (see **Chapter 4.0, Introduction to Environmental Analysis**). As discussed above, development of the study area has been discussed in applicable plans and regulatory documents locally and within the region. The Project would not include any change in land use, but would support implementation of Dublin's General Plan and the EDSP. The Project would be consistent with applicable land use goals, policies, and objectives of each jurisdiction's General Plan and the EDSP, as demonstrated in **Table 5.9-1**. With implementation of an amendment to Dublin's General Plan to specify the precise number of travel lanes proposed, the Project would be entirely consistent with the General Plan. The County and Livermore will independently review and approve the Project, and may elect to amend their General Plans to specify the final number of lanes for the Project.

Implementation of future projects requiring a change to planning documents, such as a General Plan amendment, would require discretionary approval, similar to this Project review and approval process. It is reasonably assumed that these projects would be designed or otherwise conditioned to maintain consistency with adopted land use plans and ordinances or be amended with the appropriate mitigation and conditions of approval. Given the Project's consistency, as well as reasonable assumption for other projects in the cumulative impacts scenario to be generally consistent with the land use policy framework, cumulative land use impacts would not occur. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact.

REFERENCES

Alameda County, 2000. East County Area Plan. Available: https://www.acgov.org/cda/planning/generalplans/index.htm. Accessed: November 22, 2018.

Alameda County Community Development Agency, 2012. *Livermore Municipal Airport: Airport Land Use Compatibility Plan*. Available: https://www.acgov.org/cda/planning/generalplans/airportlandplans.htm. Accessed: November 22, 2018.

City of Dublin, 2017. *City of Dublin General Plan*. Available: https://www.dublin.ca.gov/171/General-Plan. Accessed: November 22, 2018.

City of Dublin, 2016. *Eastern Dublin Specific Plan*. Available: https://www.dublin.ca.gov/175/Specific-Plans. Accessed: November 22, 2018.

City of Dublin, 2018. Title 8 of the Dublin Municipal Code. Available: https://www.dublin.ca.gov/1627/Zoning. Accessed: November 22, 2018.

City of Livermore, 2014. *City of Livermore General Plan 2003-2025*. Available: http://www.cityoflivermore.net/civicax/filebank/documents/6089/. Accessed: November 22, 2018.

This Page Intentionally Left Blank

5.10 NOISE AND VIBRATION

INTRODUCTION

This section evaluates noise and vibration associated with implementation of the Project. Information in this section is primarily drawn from the *Noise Study Report* (NSR) prepared for the Project (see **Appendix I** of this Draft Environmental Impact Report (Draft EIR)).

Scoping Issues Addressed

No public or agency comments related noise or vibration were received during the public scoping period for this Draft EIR.

REGULATORY SETTING

Federal

Occupational Safety and Health Act

Under the Occupational Safety and Health Act of 1970 (29 U.S.C. §651 et seq.), the US Department of Labor, Occupational Safety and Health Administration (OSHA) adopted regulations (29 Code of Federal Regulation [CFR] §1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list limits on noise exposure levels as a function of the amount of time during which the worker is exposed. The regulations further specify requirements for a hearing conservation program, a monitoring program, an audiometric testing program, and hearing protection. There are no federal laws governing community noise.

State

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act, find that excessive noise is a serious hazard to public health and welfare, and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The Act also finds that there is a continuous and increasing bombardment of noise in urban, suburban, and rural areas. The California Noise Control Act declares that the State has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians that is free from noise that jeopardizes their health or welfare.

Local

City of Dublin

City of Dublin General Plan

The Noise Element of the Dublin General Plan aims to ensure appropriate noise levels considered compatible for community noise environments. The City's normally acceptable exterior noise exposure standard is 60 A-weighted decibels (dBA) community noise equivalent level (CNEL) or less for residential and hotels and 70 dBA CNEL or less for office, retail, industrial, and commercial uses. A detailed explanation of A-weighted decibels is provided in the Principals of Acoustics sub-section below.

The following policies in the General Plan are applicable to Project-related potential noise impacts:

Guiding Policy 9.2.1.A.1:	Where feasible, mitigate traffic noise to levels indicated by Table 9.1: Land Use Compatibility for Community Noise Environments.
Implementing Policy 9.2.1.B.4:	Noise impacts related to all new development shall be analyzed by a certified acoustic consultant.

Eastern Dublin Specific Plan

The Eastern Dublin Specific Plan (EDSP) includes a holistic look at the existing noise environment within the planning area, and identifies Interstate 580 (I-580) as the major noise source in eastern Dublin. The EDSP provides noise policy requiring future hotel and retail developments near I-580 to conform to State Land Use Compatibility Standards, along with Dublin's General Plan Noise Element.

City of Dublin Municipal Code

The Dublin Municipal Code includes standards pertaining to noise control within the City. Municipal Code Section 5.28.020 prohibits any person within the City to make any loud, disturbing, unnecessary, unusual, habitual noise; or any noise which annoys, disturbs, injures, or endangers the health, repose, peace or safety of any reasonable person of normal sensitivity present in the area.

Alameda County

Alameda County General Plan, East County Area Plan

The East County Area Plan includes policies and programs related to noise, with the goal of minimizing the exposure of workers and residents to excessive noise. Policies applicable to the Project include:

Policy 288:	The County shall endeavor to maintain acceptable noise levels throughout East County.

Program 104: The County shall require the use of noise reduction techniques (such as buffers, building design modifications, lot orientation, soundwalls, earthberms, landscaping, building setbacks, and real estate disclosure notices) to mitigate noise impacts generated by transportation-related and stationary sources as specified in the *California Office of Noise Control Land Use Compatibility Guidelines*.

Alameda County Municipal Code

Construction is exempt from the noise limits specified in Alameda County's Municipal Code, provided that construction activities are limited to the hours between 7:00 am to 7:00 pm, Mondays through Fridays, and 8:00 am to 5:00 pm on Saturdays and Sundays.

City of Livermore

City of Livermore General Plan

Livermore's normally acceptable exterior noise exposure standard is 60 dBA CNEL or less for single-family residential, 65 dBA CNEL or less for multi-family and hotels, and 70 dBA CNEL or less for office buildings, commercial, and retail. The following policies are applicable to the Project:

N-1.2.5 During all phases of construction, the City shall take measures to minimize the exposure of neighboring properties to excessive noise levels from construction related activity.

Objective N-1.4 Reduce noise levels from traffic, which is the single largest continual source of unacceptable noise in the City.

N-1.4.2 The City shall minimize potential transportation noise through proper design of street circulation, coordination of routing, and other traffic control measures.

City of Livermore Municipal Code

Livermore prohibits the operation of any loud equipment used in construction, demolition or other repair work between the hours of 6:00 p.m. Saturday to 7:00 a.m. Monday; 8:00 p.m. to 7:00 a.m. on Monday, Tuesday, Wednesday and Thursdays; 8:00 p.m. Friday to 9:00 a.m. on Saturday; and on city-observed holidays.

Additionally, the city engineer and/or building official shall have the authority to authorize construction activities during the hours specified above for the following reasons:

- A public agency, other than the city, requires as a condition of a permit that the construction be done during the restricted hours.
- Public health, safety or welfare requires the work to be done during the restricted hours.

EXISTING CONDITIONS

Principles of Acoustics

Noise is defined as loud, unexpected, or annoying sound. In the science of acoustics, the fundamental model used to describe noise consists of a sound (or noise) source, a receptor, and the propagation path between the two. The loudness of the noise source and obstructions between the noise and the receptor determine sound levels and characteristics of the noise perceived by the receptor.

In order to describe environmental noise and to assess impacts on areas sensitive to noise, a frequency weighting measure[1] that simulates human perception is customarily used. The frequency weighting scale known as A-weighting best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The A-weighting network approximates the response of the average young ear when listening to most ordinary sounds. When people make a judgment of the relative loudness or annoyance of a sound, their judgment correlates with the A-scale sound levels of those sounds. Noise levels for traffic noise reports are typically reported in terms of A-weighted decibels or dBA. **Table 5.10-1** describes typical A-weighted noise levels for various noise sources.

The human ear is able to begin to detect sound level increases of 3 decibels (dB) in typical noisy environments. A 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound, would generally be barely detectable.

Noise in our daily environment fluctuates over time. Some fluctuations are minor, but some are substantial. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used in traffic noise analysis:

- **Equivalent Sound Level (L_{eq}):** L_{eq} represents an average of the sound energy occurring over a specified period. The 1-hour A-weighted equivalent sound level (L_{eq}) is the energy average of A-weighted sound levels occurring during a one-hour period.
- **Percentile-Exceeded Sound Level (L_{xx}):** L_{xx} represents the sound level exceeded for a given percentage of a specified period (e.g., L10 is the sound level exceeded 10 percent of the time, and L90 is the sound level exceeded 90 percent of the time).
- **Maximum Sound Level (L_{max}):** L_{max} is the highest instantaneous sound level measured during a specified period.
- **Day-Night Level (L_{dn}):** L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10:00 p.m. and 7:00 a.m.

[1] The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network.

Table 5.10-1 Typical A-Weight Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	- 110 -	Rock band
Jet fly-over at 1000 feet		
	- 100 -	
Gas lawn mower at 3 feet		
	- 90 -	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	- 80 -	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	- 70 -	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	- 60 -	
		Large business office
Quiet urban daytime	- 50 -	Dishwasher next room
Quiet urban nighttime	- 40 -	Theater, large conference room (background)
Quiet suburban nighttime		
	- 30 -	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	- 20 -	
		Broadcast/recording studio
	- 10 -	
Lowest threshold of human hearing	- 0 -	Lowest threshold of human hearing

Source: Caltrans 2013

- **Community Noise Equivalent Level (CNEL)**: Similar to L_{dn}, CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during the nighttime hours between 10:00 p.m. and 7:00 a.m., and a 5-dB penalty applied to the A-weighted sound levels occurring during evening hours between 7:00 p.m. and 10:00 p.m.

Principles of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves. At certain levels, vibration can result in irritation to nearby people and building damage. Several different methods are typically used to quantify vibration. For the purposes of this Draft EIR, a Peak Particle Velocity (PPV) descriptor with units of millimeters per second (mm/sec) or inches per second (in/sec) is used to evaluate construction-generated vibration for building damage. The PPV is defined as the maximum instantaneous peak of a vibration wave. The general human response to different levels of groundborne vibration levels is shown below in **Table 5.10-1**.

Table 5.10-2 Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Threshold at which there is a risk of damage to fragile buildings with no risk of damage to most buildings
0.25	Strongly perceptible to severe	Threshold at which there is a risk of damage to historic and some old buildings.
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential structures
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to new residential and modern commercial/industrial structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, September 2013

Acoustical Setting

Noise Study Area

The noise study area includes the Project site plus a surrounding 500-foot buffer, and the nearest sensitive receptors, as shown in **Figure 5.10-1**.

Sensitive Receptors

Sensitive receptors are defined as land uses that are sensitive to noise impacts as determined by noise exposure standards and guidelines. Sensitive receptors include but are not limited to hospitals, schools, churches, libraries, auditoriums, public meeting rooms, motels, hotels, residences, recreational facilities, and lands on which serenity and quiet are of extraordinary importance and which serve an important public need.

A field investigation was conducted at the Project site from December 12 to 14, 2017 to identify land uses that could be subject to traffic and construction noise impacts from the Project. Sensitive receptors were identified along the Project corridor through a review of mapping, aerial photos, and field reconnaissance. The nearest sensitive receptors are residential land uses to the north of the Project site approximately 700 to 1,300 feet from the proposed right-of-way.

Existing Ambient Noise Measurements

The primary existing noise source in the area is vehicles traveling on I-580 and local roads. Local non-traffic related noise sources include aircraft, sounds of nature, and agricultural operations. To quantify existing ambient noise levels in the study area, six short-term noise measurements (S1-S6)[2] were taken within the Project vicinity concurrent with two long-term noise measurements. Noise measurement locations were selected to be representative of sensitive receptor locations, and are shown on **Figure 5.10-1**. Two or more consecutive 10-minute measurements were made at each short-term noise measurement site. At short-term locations, noise levels were measured 5 feet above the ground surface and at least 10 feet from structures or barriers. Short-term noise measurement locations were used as noise modeling receptors for the prediction of existing and future loudest-hour traffic noise levels. As summarized in **Table 5.10-3**, the ambient recorded noise levels ranged from 45 dBA to 60 dBA L_{eq} near the Project site. The maximum loudest-hour noise levels in the Project vicinity ranged from 48 L_{eq} dBA to 65 L_{eq} dBA. Traffic counts and speed observations were made along I-580 and local roads during the short-term noise measurements for model calibration purposes.

Long-term noise measurements were completed at two locations to quantify the overall trend in existing noise levels and to establish the peak traffic noise hour. These long-term noise measurements were taken along the existing portion of Dublin Boulevard to the west of the Project (L1) and along the existing portion of North Canyons Parkway to the east of the Project (L2). Locations L1 and L2 were selected to be representative of traffic noise levels occurring along existing continuous portions of the local roadways. The noise measurements were made over an approximate 48-hour period, from midday on Tuesday, December 12th, 2017 to midday on Thursday, December 14th, 2017. Measurements were taken at heights of about 12 feet above ground level. As summarized in **Table 5.10-4**, the loudest hour was 8:00 a.m. and ambient noise was measured at 70 L_{eq} dBA. The trends in ambient noise levels measured at long-term locations are summarized graphically in **Appendix I** of this Draft EIR.

[2] Results from measurement location S4 were used to determine the existing loudest hour at the adjacent sensitive land use represented by R4.

Table 5.10-3 Summary of Short-Term Noise Measurement Data

Site	Location (see Figure 5.10-1)	Start Time	Measured Noise Levels, dBA				Primary Noise Source
			L10	L50	L90	Leq	
S1	2601 Alliston Loop, Dublin	11:30 a.m.	63	60	56	60	Traffic on Fallon Road
		11:40 a.m.	63	60	56	60	
S2	3899 Camino Loop, Dublin	11:20 a.m.	49	45	43	52	Distant traffic (I-580), intermittent aircraft, occasional local traffic
		11:30 a.m.	47	45	43	46	
S3	Croak Road, north of Central Parkway, Dublin	10:50 a.m.	45	39	35	45	Distant traffic (I-580), intermittent aircraft, occasional local traffic
		11:00 a.m.	48	42	38	45	
S4[1]	Croak Road, 730 feet north of I-580, Dublin	10:10 a.m.	61	58	53	58	Traffic on I-580, police sirens
		10:20 a.m.	58	56	54	57	
S5	500 feet north of I-580, Dublin	10:00 a.m.	60	59	57	59	Traffic on I-580
		10:10 a.m.	62	59	58	61	
S6	901 Doolan Road, Livermore	10:30 a.m.	61	52	50	59	Traffic on I-580 and Doolan Road
		10:40 a.m.	61	51	49	60	

[1] Measurement location S4 was selected to be representative of the adjacent residence, but was not located at the noise sensitive land use due to access restrictions. Measurement results were used to determine the existing loudest hour at the adjacent sensitive land use represented by R4.
Source: Illingworth & Rodkin, Inc., 2018

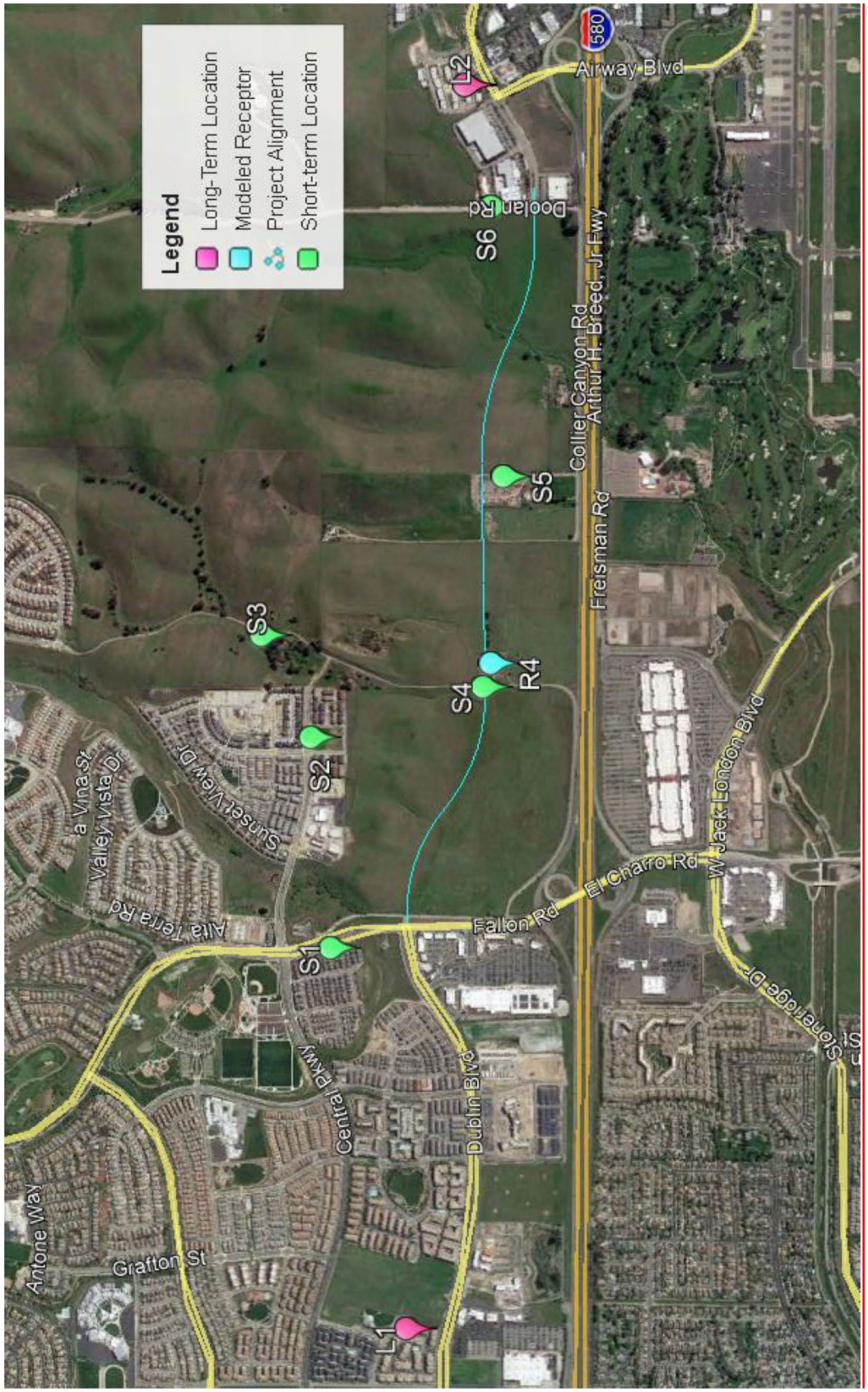


Figure 5.10-1

Noise Measurement Locations

Source: Illingworth & Rodkin, 2018

Table 5.10-4 Summary of Long-Term Noise Measurements

Receptor ID	Location (See Appendix I for Photos)	Date	Loudest Hour(s)	Loudest Hour $L_{eq[h]}$, dBA
L1[1]	3637 Dublin Boulevard, 75 feet north of the center of Dublin Boulevard	12/13/2017	8:00 a.m.	70
L2[1]	1051 Airway Boulevard, 60 feet south of the center of North Canyons Parkway	12/13/2017	7:00 a.m.	70

[1] Location is more than 500 feet from the roadway in the Project limits.
Source: Illingworth & Rodkin, Inc., 2018

IMPACTS AND MITIGATION MEASURES

Significance Criteria

California Environmental Quality Act (CEQA) does not define what construction or operational noise level increase would be considered substantial. A 3 dBA increase represents a doubling of sound energy, and can be perceived by people as a degradation of their noise environment when existing noise is below 65 dBA Ldn.[3] Therefore, a noise increase of 3 dBA Ldn or greater at a residential receptor is typically considered significant when existing ambient noise levels are between 60 and 65 dBA Ldn. A noise increase of 5 dBA Ldn or greater at the receptor would be considered a significant impact when existing ambient noise levels are less than 60 dBA Ldn.[4] Noise due to construction activities is usually considered to be less than significant in terms of CEQA compliance if the construction activity is temporary and the use of heavy construction equipment and noisy activities are limited to daytime hours. As indicated above, Dublin does not have separate noise standards for construction.

Dublin does not provide numerical vibration standards for construction activities. Therefore, the impact discussion uses the Caltrans standard of 0.30 in/sec PPV as the threshold for a significant impact relating to vibration (see **Table 5.10-2**). A significant impact would be identified if Project construction activity or Project-related vehicle traffic would result in vibration levels of 0.3 in/sec PPV or greater at nearby structures.

Quantitative thresholds for the impact of temporary increases in noise due to construction are not specified by Dublin, Livermore, the County, or the state. The threshold for speech interference indoors is 45 dBA. Assuming a 15 dB exterior-to-interior reduction for standard residential construction with windows open and a 25 dB exterior-to-interior reduction for standard commercial construction, assuming windows closed, this would correlate to an exterior threshold of 60 dBA Leq at residential land uses. Therefore, the Project would be considered to generate a

[3] FICON, 1992.
[4] *Ibid.*

significant temporary construction noise impact if Project construction activities exceeded 60 dBA Leq at nearby residences and exceeded the ambient noise environment by 5 dBA Leq or more for a period longer than one year.

The following significance criteria for noise were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this Project.

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria:

A. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies

B. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

C. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

D. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels

F. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels

Methodology

To determine potential impacts, the impact significance criteria identified above were applied to construction and operation of the Project. Baseline noise conditions (2017) were compared to noise that would be generated by construction and operation of the Project. For cumulative analysis, the projected noise environment in the year 2040 without the Project was compared to projected noise in 2040 with implementation of the Project. Traffic noise was calculated using data from the *Transportation Impact Report* (TIA) prepared for the Project (see **Appendix D** of this Draft EIR). **Chapter 4.0, Introduction to Environmental Analysis**, provides a detailed discussion of baseline conditions and the cumulative scenario.

Construction

The Federal Highway Administration (FHWA) has developed the Roadway Construction Noise Model (RCNM), which has become the industry accepted standard model for calculating construction noise levels at specific receptor locations. The FHWA's RCNM was used to calculate the

maximum and average noise levels anticipated during each phase of construction, as shown in **Table 5.10-5**. This construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment that were developed. The usage factors represent the percentage of time that the equipment would be operating at full power. Vehicles and equipment anticipated during each type of construction were input into RCNM to calculate noise levels at a distance of 100 feet. The modeled receptor locations represent the closest existing receiving land uses to the east, north, west, and south of the Project site. The construction modeling assumptions and outputs are provided in **Appendix I** of this Draft EIR.

Operation

Traffic noise impacts 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.[5]

TNM calculates traffic noise levels based on the geometry of the site, which includes the positioning of travel lanes, receptors, barriers, terrain, ground type, buildings, etc. The noise source is the traffic flow, as defined by the user, in terms of hourly volumes of automobiles, medium-duty trucks, heavy-duty trucks, buses, and motorcycles. Model input data for local roads included existing traffic and future peak hour traffic volume data and speed estimates. Traffic volumes for I-580 were based on traffic counts available from Caltrans. Traffic volumes and speeds for the Project were based on the TIA prepared for the Project in August 2018. The proposed roadway, existing and future receptors, terrain lines, ground zones, and noise barriers were digitized and input into the traffic noise model. The detailed traffic model input assumptions are presented in **Appendix D** of this Draft EIR.

Impact Analysis

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. <u>Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies</u>

And

B. <u>A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project</u>

[5] FHWA 1998a, 1998b.

Impact NOI-1: The Project would result in temporary noise increases during construction, which could exceed local standards. **(Less than Significant with Mitigation)**

There are two types of short-term noise impacts associated with construction: noise generated from construction equipment and increase in traffic flow on local streets. Without proper controls, construction could result in temporary, excessive noise levels. Construction would not result in a permanent increase in noise levels. Quantitative measures of construction-related noise impacts are analyzed in **Impact NOI-2**.

Construction Equipment Noise

The Project would be constructed in largely undeveloped areas of Dublin and the County. Some construction activities would take place immediately adjacent to Livermore and may require construction access at the Doolan Road/North Canyons Parkway intersection in Livermore. Construction activities would include but are not limited to demolition, earthwork, paving, pile driving/grinding, concrete/rebar/formwork, utility trenching, and roadway striping. Construction staging would be located at the eastern end of the Project site, south of the roadway extension and north of Collier Canyon Road, as shown in **Figure 3-11**. Land uses along the Project site would be exposed to temporary construction noise.

Noise generated by Project-related construction activities would be a function of the noise levels generated by individual pieces of construction equipment, the type and amount of equipment operating at any given time, the timing and duration of construction activities, the proximity of nearby sensitive land uses, and the presence or lack of shielding at these sensitive land uses. Construction noise levels would vary on a day-to-day basis during each phase of construction depending on the specific task being completed.

Although the overall construction schedule is anticipated to occur in a single phase lasting 1.5 years, roadway construction activities typically occur for relatively short periods of time in any specific location as construction proceeds along the proposed roadway alignment. Most construction activities would be located more than 500 feet from any noise sensitive receptors and residences are located 4,000 feet or greater from pile driving activities.

Construction noise would mostly be of concern in areas where impulse-related noise levels from construction activities would be concentrated for extended periods of time in areas adjacent to noise sensitive receptors, where noise levels from individual pieces of equipment are substantially higher than ambient conditions, or when construction activities would occur during noise-sensitive early morning, evening, or nighttime hours.

With the exception of construction phases involving impact tools, noise levels would not be expected to exceed the quantitative noise limits established in local noise ordinances for the County or Livermore, or qualitative limits established in Dublin. Please refer to **Table 5-10.5** for estimated noise levels from the types of construction equipment that would be used for the Project.

Livermore and the County prohibit construction noise during certain times of day. Project construction activities within those jurisdictions would be limited to the timing windows established by Livermore and the County (see discussion under Regulatory Setting above). As provided for in Livermore's municipal code, construction outside of the hours specified can be allowed with proper approval. Construction within Dublin would be required to adhere to Dublin's General Plan and municipal code policies and standards for noise.

Although construction-period noise would be required to adhere to local regulations and would be limited to the hours described for the County and Livermore above, temporarily increased noise levels within the noise study area above local standards represent a potentially significant impact. The incorporation of Best Management Practices required by **Mitigation Measure NOI-1** would limit unnecessary noise generation. Implementation of **Mitigation Measure NOI-1** would reduce temporary construction noise impacts by restricting the hours of construction, eliminating unnecessary noise such as idling, requiring the use of quiet equipment where possible, limiting the proximity of construction equipment to sensitive receptors, and establishing a noise management plan and noise disturbance coordinator to respond to any complaints. This impact would be less than significant with **Mitigation Measure NOI-1** incorporated.

Mitigation for Impact NOI-1

Mitigation Measure NOI-1: The following measures will be implemented during Project construction.

- The Project contractor shall submit a Construction Noise Management Program that identifies measures proposed to minimize construction noise impacts on existing residents.
- All construction equipment will conform to Section 14-8.02, Noise Control, of the latest Standard Specifications.
- In Dublin, all construction operations shall comply with local noise standards and be limited to normal daylight hours where feasible. All stationary equipment shall be adequately muffled and located away from sensitive receptors. The construction contractor shall limit all on-site noise-producing construction activities, including deliveries and warming up of equipment, to the daytime hours of 7:00 a.m. to 7:00 p.m., daily, where feasible. If work is necessary outside of these hours, the contractor shall acquire appropriate permits from the local jurisdiction and implement a construction noise monitoring program, providing additional mitigation where practical and feasible.
- In the County and Livermore, construction activities generating excessive noise will be limited to the hours specified in the appropriate local ordinance, where feasible. If work is necessary outside of these hours, the contractor shall acquire appropriate permits from the local jurisdiction and implement a construction noise monitoring program, providing additional mitigation where practical and feasible.

- Pile driving activities in all jurisdictions will be limited to daytime hours only, when feasible. If pile driving outside of typical construction hours specified in this measure is required, the contractor shall acquire appropriate permits from the local jurisdiction and implement a construction noise monitoring program, providing additional mitigation where practical and feasible.
- Equip all internal combustion-engine driven equipment with manufacturer recommended intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise generating equipment and self-powered lighting systems as far as possible from sensitive receptors when sensitive receptors adjoin or are near the construction footprint.
- Utilize "quiet" air compressors and other "quiet" equipment where such technology exists.
- Prohibit unnecessary idling of internal combustion engines within 100 feet of residences.
- Avoid staging of construction equipment within 200 feet of noise-sensitive uses.
- The construction contractor shall designate a noise disturbance coordinator who would be responsible for responding to any local complaints about construction noise. When a complaint is received, the disturbance coordinator shall notify Dublin within 24 hours of the complaint and determine the cause of the noise complaints (starting too early, bad muffler, etc.) and institute reasonable measures warranted to correct the problem, as deemed acceptable by the City of Dublin Community Development Department. The construction contractor shall conspicuously post the contact name and telephone number for the noise disturbance coordinator at the construction site.

C. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

Impact NOI-2: Project construction activities could result in substantial temporary and periodic noise increases as a result of construction equipment operation and construction activities in the vicinity of sensitive receptors. **(Less than Significant with Mitigation)**

As described under **Impact NOI-1**, construction activities would include demolition, earthwork, paving, pile driving, concrete/rebar/formwork, utility trenching, and roadway striping. Anticipated construction activities and resulting noise are qualitatively discussed in **Impact NOI-1**. Although the overall construction schedule is anticipated to occur in a single phase lasting 1.5 years, roadway construction activities typically occur for relatively short periods of time in any specific location as construction proceeds along the proposed roadway alignment.

Existing short-term noise levels along the Project site were measured between 45 and 60 dBA Leq (**Table 5.10-3**), with the long-term loudest hour measuring 70 dBA Leq (**Table 5.10-4**). Much of construction would be located more than 500 feet from any noise sensitive receptors, resulting in noise levels that are 14 dBA or more below the levels indicated in **Table 5.10-5**. As indicated in **Table 5.10-5**, most construction activities would generate average noise levels that would exceed ambient daytime noise levels at adjacent land uses (noise measurement locations S4, S5, and S6) by 10 to 15 dBA Leq.

Unshielded noise levels at 100 feet from the center of construction activities would generally range from 76 to 85 dBA Leq during peak periods without pile driving and about 88 dBA Leq during periods with pile driving. Residences are located 4,000 feet or greater from pile driving activities proposed to construct the bridge over Cottonwood Creek. At a distance of 4,000 feet, pile driving activities would generate hourly average noise levels of about 56 dBA Leq and maximum instantaneous noise levels of about 63 dBA Lmax. Noise produced by construction equipment typically attenuates over distance at a rate of about 6 dB per doubling of distance.

Table 5.10-5 Noise Levels by Construction Activity at 100 feet

Construction Phase	Construction Noise		Existing Noise Levels		
	Maximum Noise Level (Lmax, dBA)	Hourly Average Noise Level (Leq[h], dBA)	Location S4: 57-58 dBA	Location S5 59-60 dBA	Location S6 59-61 dBA
			Temporary Construction Noise Increase		
Site Preparation	84	85	*28*	*26*	*26*
Grading and Excavation	79	82	*25*	*23*	*23*
Sewer Trenching and Installation	75	79	*22*	*20*	*20*
Utility Trenching and Installation	75	79	*22*	*20*	*20*
Bridge Foundations	75	77	*20*	*18*	*18*
Impact Pile Driving	95	88	*31*	*29*	*29*
Bridge Abutment and Piers	75	76	*19*	*17*	*17*
Bridge Superstructure/ Barriers	75	76	*19*	*17*	*17*
Landscaping, Irrigation, and Lighting	75	76	*19*	*17*	*17*
Paving	77	80	*23*	*21*	*21*

*Detailed equipment assumptions for each construction activity are provided in Appendix I.
Source: Illingworth & Rodkin, Inc., 2018

Existing peak-hour noise levels are in the range of 48 to 63 dBA Leq at adjacent residences. Construction noise levels at these residences, which are located between 300 to more than 4,000 feet from Project construction, would range from:

- 66 to 75 dBA Leq at noise measurement location R4
- 60 to 69 dBA Leq at noise measurement location S1
- 52 to 61 dBA Leq at noise measurement location S2
- 50 to 59 dBA Leq at noise measurement location S3

Average noise levels could exceed ambient daytime noise levels at adjacent residential land uses by 0 to 6 dBA Leq during most construction phases and by 6 to 15 dBA Leq during site preparation. Pile driving activities at Cottonwood Creek bridge would generally be below 60 dBA Leq at residences due to the large distance between residences and Cottonwood Creek. Maximum instantaneous noise levels generated by typical construction activities would generally be 5 to 10 dBA above existing maximum noise levels generated by traffic on I-580. Maximum instantaneous noise levels generated by impact pile driving activities would generally be 20 to 30 dBA above existing maximum noise levels generated by traffic on I-580.

Hourly average construction noise levels would exceed 60 dBA Leq and ambient noise levels by as much as 15 dBA Leq during short periods of site preparation work located closest to residences, but would be 5 dBA Leq or less above ambient levels during most phases of construction. Although construction is anticipated to occur in one phase with a maximum duration of 1.5 years of continuous construction, the duration of noise generating activities at individual locations along the Project site would be significantly shorter as construction moves along the proposed roadway alignment. Therefore, construction noise levels at residences would not be anticipated to exceed 60 dBA Leq and the ambient noise environment by 5 dBA Leq or more for a period longer than one year. However, without proper controls on the timing of construction to avoid disruptive night time construction noise, temporary noise associated with construction could be considered substantial. This is a potentially significant impact. With implementation of **Mitigation Measure NOI-1**, construction work would comply with construction work hours within each jurisdiction, as feasible, and additional noise reduction and prevention measures such as mufflers would ensure temporary construction noise is not substantial. With implementation of **Mitigation Measure NOI-1**, this impact would be less than significant.

Mitigation for Impact NOI-2

Mitigation Measure NOI-1 (described above)

Less than Significant Impacts

Construction Traffic Noise

Construction noise may be generated by large trucks moving materials to and from the Project site. Large trucks would be necessary to deliver building materials and remove excavated soil.

Excavation and cut and fill would be required, resulting in approximately 100,000 net cubic yards exported from the site. Construction period truck trips were computed using the RoadMod Version 8.1.3 emissions model along with projected construction activity, as analyzed in **Section 5.2, Air Quality**. Soil import and export, concrete truck trips, and asphalt truck trips were input to the model. The model estimates that the Project would generate an average of 83 truck trips per day during the most intensive phases of construction. Construction would occur in a single phase lasting up to a maximum of 1.5 years of continuous construction, but these intensive phases would be much shorter in duration. Because of the logarithmic nature of noise levels, a doubling of the traffic volume (assuming that the speed and vehicle mix do not also change) would result in a noise level increase of 3 dBA. As shown in the existing traffic conditions discussion, intersections in the immediate Project vicinity have traffic volumes ranging from approximately 1,300 to 4,500 vehicles during the morning and evening peak periods. Therefore, Project construction trips would not double the existing traffic volumes, and would not result in a noticeable or significant increase in noise. This impact would be **less than significant**.

Operation

Traffic noise increases were analyzed throughout the roadway network in the vicinity of the Project. Typically, a permanent increase in the day-night average noise level of 3 dBA CNEL or greater at noise-sensitive receptors would be considered significant, as described above. An increase of 5 dBA CNEL or greater would be considered significant when projected noise levels would continue to meet those considered satisfactory for the affected land use. Both Dublin and Livermore define a noise level of 60 dBA CNEL or less to be normally acceptable for residential land use, and 60 dBA CNEL or less to be normally acceptable for commercial land uses.

Traffic data from the TIA (see **Appendix D** of this Draft EIR) was reviewed to calculate potential traffic noise level increases attributable to the Project along the adjacent roadway network and the Project itself. Roadways evaluated in the analysis included Dublin Boulevard, North Canyons Parkway, Hacienda Drive, Tassajara Road, Fallon Road, the I-580 ramps, El Charro Road, Airway Boulevard, Doolan Road, Isabel Avenue, Portola Avenue, and Murrieta Boulevard.

As shown in **Table 5.10-6**, traffic noise increases at existing land uses along the Project site are calculated to increase by 0 to 2 dBA Leq. This analysis takes into consideration future traffic noise increases (in year 2040) not attributable to the Project, to demonstrate noise increases specifically attributable to the Project. As the increase is below the applicable significance threshold of an increase of 3 dBA CNEL, this impact would not be considered significant. All other existing land uses would be considered compatible with the noise environment and would experience Project generated noise increases of less than the applicable significance threshold of an increase in 5 dBA CNEL. Therefore, this impact would be **less than significant**.

Table 5.10-6 Existing and Future Traffic Noise Levels

Receiver	Calculated CNEL, dBA			Noise Increase Over Existing, dBA		Future Plus Project 2040 Noise Increase Over Future (No Project), dBA
	Existing	Future (No Project) 2040	Future Plus Project 2040	Future (No Project) 2040	Future Plus Project 2040	
S1	63	64	65	1	2	**1**
S2	50	50	51	0	1	**1**
S3	48	48	48	0	0	**0**
R4	63	63	64	0	1	**1**
S5	67	67	67	0	0	**0**
S6	63	63	65	0	2	**2**

Source: Illingworth & Rodkin, 2018
Notes: R=Residential, A=Agricultural, O=Office

D. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels

Project-related vehicle traffic is not anticipated to generate perceptible levels of groundborne vibration at nearby structures. Project construction equipment would include concrete saws, excavators, graders, dozers, backhoes, forklifts, cement mixers, bore/drill rigs, aerial lifts, cranes, welders, generators, pavers, paving equipment, rollers, and pick-up trucks. Additionally, pile driving may take place during construction of the Cottonwood Creek bridge. Construction activities with the greatest potential of generating perceptible vibration levels would include pile driving, the removal of pavement and soil, the movement of heavy tracked equipment, and vibratory compacting of roadway base materials by use of a roller. Table 5.10-7 summarizes typical vibration levels associated with varying pieces of construction equipment at a distance of 25 feet.

Table 5.10-7 Vibration Source Levels for Construction Equipment at 25 feet

Equipment		PPV at 25 ft. (in/sec)
Pile Driver (Impact)	upper range	1.158
	typical	0.644
Pile Driver (Sonic)	upper range	0.734
	typical	0.170
Clam shovel drop		0.202
Hydromill (slurry wall)	in soil	0.008
	in rock	0.017
Vibratory Roller		0.210
Hoe Ram		0.089
Large bulldozer		0.089
Caisson drilling		0.089
Loaded trucks		0.076
Jackhammer		0.035
Small bulldozer		0.003

Source: Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, May 2006

Vibration levels generated by proposed activities and equipment other than pile driving would not exceed the 0.3 in/sec PPV criteria when construction occurs at distances of 25 feet or more from structures. Pile driving activities would be below the 0.3 in/sec PPV criteria when construction occurs at distances of 100 feet or greater from structures. There are no existing structures located within 100 feet of the Project site and architectural or structural damage to normal structures greater than 100 feet away would not be anticipated. Therefore, impacts related to vibration would be **less than significant**.

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels

And

F. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels

The Project is located within the 55 CNEL noise contour for the Livermore Municipal Airport. However, the Project does not propose noise sensitive land uses and would therefore not contribute to the exposure of persons to excessive noise levels. During Project operation, traffic

noise levels due to the Project are anticipated to increase by up to 1 dBA Leq during the worst-hour along all existing roadways in the network. Traffic noise increases at existing land uses along the Project site are calculated to increase by up to 2 dBA Leq. These noise increases would not be considered significant because the noise increases would be less than 3 dBA CNEL. Therefore, the Project would not expose existing sensitive receptors to excessive noise levels. Given this, implementation of the Project would result in a **less-than-significant** impact associated with an airport or private airstrip.

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and planned residential, commercial, and infrastructure development projects that could increase ambient noise levels (see **Chapter 4.0, Introduction to Environmental Analysis**). Future development activities in Dublin, Livermore, and elsewhere around the noise study area would result in similar construction and operational noise and vibration impacts that would occur during implementation of the Project.

Cumulative Construction Noise and Vibration

The Project's construction activities would result in a temporary increase in ambient noise levels that would cease upon completion of construction activities. If other developments near the Project site are under construction concurrent with Project construction, the Project could contribute to a cumulative noise impact. However, based on the noise analysis above, impacts from Project construction noise would be less than significant with mitigation. It is reasonably assumed that other projects in the area would be similarly subject to local regulations for noise control, and would implement similar construction noise attenuation measures as typically required by Dublin, the County, and Livermore. Therefore, with **Mitigation Measure NOI-1**, no cumulative impact would occur. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact.

As discussed above, Project construction would not result in vibration levels which could result in damage to nearby structures. However, if nearby projects are under construction concurrent with the Project, the combined vibration levels could potentially result in an impact. It is reasonably assumed that other projects would be subject to the same or similar thresholds for construction vibration impacts, and would reduce, avoid, or mitigate appropriately, ensuring that the combined vibration levels at nearby structures would not exceed the established threshold. Therefore, no cumulative impact would occur. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact.

Cumulative Operational Noise

Cumulative operational noise impacts describe the extent to which noise levels are anticipated to increase over existing conditions with the development of the Project and other foreseeable projects. Cumulative operational noise increases would occur primarily as a result of increased

traffic on local roadways due to buildout of the Project and other projects within the vicinity. Cumulative increases in traffic noise levels were estimated by comparing existing conditions (2017), Future Plus Project 2040, and Future (No Project) 2040 scenarios.

A cumulative impact would occur if a 3.0 dB increase over "Existing" conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive use. **Table 5.10-6** compares existing conditions against Future Plus Project 2040 and Future (No Project) 2040 scenarios and demonstrates that a 3.0 dB increase over existing conditions would not occur. Therefore, the Project, in combination with cumulative background traffic noise levels, would not result in a cumulative impact. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact.

REFERENCES

Alameda County, 2000. East County Area Plan. Available: https://www.acgov.org/cda/planning/generalplans/index.htm. Accessed: November 22, 2018.

City of Dublin, 2017. *City of Dublin General Plan*. Available: https://www.dublin.ca.gov/171/General-Plan. Accessed: November 22, 2018.

City of Dublin, 2016. *Eastern Dublin Specific Plan*. Available: https://www.dublin.ca.gov/175/Specific-Plans. Accessed: November 22, 2018.

City of Livermore, 2014. *City of Livermore General Plan 2003-2025*. Available: http://www.cityoflivermore.net/civicax/filebank/documents/6089/. Accessed: November 22, 2018.

Federal Interagency Committee on Noise. 1992. Federal Agency Review of Selected Airport Noise Analysis Issues. Available: http://www.gsweventcenter.com/GSW_RTC_References/1992_0801_FICON.pdf. Accessed: December 5, 2018.

Illingworth & Rodkin, Inc. 2018. *Dublin Boulevard-North Canyons Parkway Environmental Noise and Vibration Assessment.*

Kittelson & Associates, Inc. 2018. *Dublin Boulevard-North Canyons Parkway Extension Transportation Impact Analysis*.

5.11 POPULATION AND HOUSING

INTRODUCTION

This section describes effects on population and housing that would result from implementation of the Project. Sources of information used to prepare the analysis in this section include:

- City of Dublin General Plan (2016)
- Eastern Dublin Specific Plan (2016)
- Alameda County General Plan, East County Area Plan (2002)
- City of Livermore General Plan (2014)
- *Community Impact Assessment* (CIA) prepared for the Project[1]

These documents are available on file with the City of Dublin at 100 Civic Plaza, Dublin, California.

Scoping Issues Addressed

Public comments related to population and housing were received during the public scoping period for this Draft environmental impact report (EIR). Comments from individuals included:

- Concerns the Project would result in new development in eastern Dublin, and a related population increase
- Concerns that the urban growth limits of Dublin, Alameda County (County), and Livermore would change or be disregarded as a result of the Project

REGULATORY SETTING

Federal

There are no applicable federal regulations.

State

Senate Bill 375

Senate Bill 375 (SB 375) directs the California Air Resources Board (CARB) to set regional targets for reducing greenhouse gas emissions. Aligning these regional plans is intended to help California achieve greenhouse gas reduction goals for cars and light trucks under Assembly Bill 32 (AB 32), the state's landmark climate change legislation. SB 375 requires each metropolitan planning organization to include a "Sustainable Communities Strategy" (SCS) in the regional transportation

[1] A Community Impact Assessment (CIA) evaluates land use, growth, and community character, traffic and transportation/pedestrian and bicycle facilities, and public involvement that may result from the implementation of the project.

plan that demonstrates how the region will meet the greenhouse gas emission targets. The SCS is a growth strategy for the region which, in combination with transportation policies and programs, strives to reduce greenhouse gas emissions and, if it is feasible, help meet CARB's targets for the region. Within a SCS, the general location of uses, residential densities, and building intensities within the region are identified. This includes areas within the region sufficient to house all the population of the region, including all economic segments of the population, over the course of the planning period of the regional transportation plan.

Local

Association of Bay Area Governments

The Association of Bay Area Governments (ABAG) is the official comprehensive regional planning agency for the San Francisco Bay area, which is composed of nine counties, including Alameda County. ABAG produces growth forecasts on four-year cycles so that other regional agencies, including the Metropolitan Transportation Commission (MTC) and the Bay Area Air Quality Management District (BAAQMD), can use the forecast to make funding and regulatory decisions. ABAG projections are also the basis for the Regional Transportation Plan and regional Ozone Attainment Plan. The general plans, zoning regulations, and growth management programs of local jurisdictions inform ABAG projections. ABAG projections are also developed to reflect the impact of "smart growth" policies and incentives that could be used to shift development patterns from historical trends toward a better jobs-housing balance, increased preservation of open space, and greater development and redevelopment in urban core and transit-accessible areas throughout the ABAG region.

In July 2017, ABAG and the MTC adopted Plan Bay Area 2040. The second such regional housing and transportation plan adopted by MTC and ABAG, Plan Bay Area 2040 is a long-range blueprint to guide transportation investments and land-use decisions through 2040, while meeting the requirements of California's landmark 2008 Senate Bill 375, which calls on each of the state's 18 metropolitan areas to develop a Sustainable Communities Strategy to accommodate future population growth and reduce greenhouse gas emissions from cars and light trucks. The Project is included in the final project list for Plan Bay Area 2040.[2]

City of Dublin

<u>City of Dublin General Plan, Housing Element</u>

The City of Dublin updated its Housing Element in November 2014. The Housing Element focuses on the regional housing needs for the period between 2015 and 2023, includes all the mandatory sections as identified by California law, including an inventory of land parcels that could accommodate its Regional Housing Needs Allocation (RHNA) as set by ABAG. The element outlines housing production objectives, describes strategies to achieve those objectives, examines the local need for special needs populations, identifies adequate sites for housing production serving various

[2] MTC, 2017. Available at: http://projects.planbayarea.org/explore

income levels, analyzes constraints to new development, and evaluates the Housing Element's consistency with other General Plan elements. The Project is included in the General Plan, and would facilitate goals outlined in the housing element by improving connectivity in eastern Dublin.

Eastern Dublin Specific Plan

The Eastern Dublin Specific Plan (EDSP) was adopted in May 1993 and updated in September 2016, and plans for the development of eastern Dublin over a 20 to 30-year period. The buildout potential of the EDSP includes 13,913 dwelling units and 29,424 jobs. The Project is included in the EDSP as a planned road improvement that would facilitate the buildout of the EDSP.

Alameda County

Alameda County General Plan, East County General Plan

The *East County General Plan* was adopted in 1994 to present a clear statement of the County's intent concerning future development and resource conservation within the eastern part of the County. The plan provides programs and specific actions the County will undertake to achieve the goals and policies of the plan. Adoption of the plan included the creation of a permanent urban growth boundary. The urban growth boundary, along with phased development requirements, prevents new development in agricultural areas and prevents urban sprawl from encroaching on undeveloped County land. The following policies are relevant to the Project:

Policy 11: The County shall support phased development in East Dublin to provide for the efficient planning of infrastructure and prevent urban sprawl in the Dublin Hills. The County shall encourage the City of Dublin to include the 600 acre Santa Rita property in the first phase of development.

Policy 51: The County shall work with East County cities to preserve a continuous open space system outside the Urban Growth Boundary with priority given to the permanent protection of the Resource Management area between Dublin and North Livermore and the area north of the Urban Growth Boundary in North Livermore, as established through Program 19.

City of Livermore

City of Livermore General Plan, Housing Element

The *City of Livermore General Plan Housing Element* is updated every five years and includes specific components such as analysis of the existing housing stock, analysis of existing and projected housing needs, and quantification of the number of housing units that will be developed, preserved, and improved. The Housing Element includes the protection of Livermore's urban growth boundary, which is intended to protect existing agricultural uses and natural resources within and outside Livermore from urban development. The following objective is relevant to the Project:

Objective LU-5.1: Maintain an Urban Growth Boundary to protect open space and agricultural uses in North Livermore.

EXISTING CONDITIONS

The entire cities of Dublin and Livermore, and the entire County comprise the study area for this section. A description of each jurisdiction's population and housing characteristics is provided below.

Population

City of Dublin

As of 2017, Dublin has a population of approximately 57,022 persons. Development in the Eastern Extended Planning Area (as identified in Dublin's General Plan) is anticipated to generate the largest percentage of Dublin's future growth, with a maximum buildout of 5,421 residential units and 19,277 persons by 2040. As shown in **Table 5.11-1**, the population in Dublin grew by approximately 34 percent from 2010 to 2017. As shown in **Table 5.11-2**, Dublin's population is projected to grow 29 percent from 2017 to 2040.[3] The Association of Bay Area Governments (ABAG) estimates that the population of Dublin will increase to approximately 73,800 by 2040.[4] As Dublin's population grows, its housing stock will need to grow as well. As shown in in **Table 5.11-3**, Dublin had approximately 15,782 residential units in 2010, and has an estimated 18,804 housing units as of 2017. This represents a 19 percent increase between 2010 and 2017. The City Development Plan Core Strategy has a target to provide 4,200 new housing units per annum up to 2022, and up to 3,000 rental units.

Alameda County

Alameda County is the second most populous county in the Bay Area region and the seventh most populous county in the state. The County has a population of approximately 1.6 million people. As shown in **Table 5.11-1**, the population in Alameda County grew by approximately 10 percent from 2010 to 2017, and the population is projected to grow 19.5 percent from 2017 to 2040 (see **Table 5.11-2**). ABAG estimates the County's population will increase to approximately 1,987,900 persons by 2040. As shown in **Table 5.11-3**, the County had approximately 582,549 housing units in 2010. Alameda County has an estimated 596,898 housing units as of 2017, which represents a 2.5 percent increase from 2010.

City of Livermore

As of 2017, Livermore's population is approximately 88,232 persons. As shown in **Table 5.11-1**, the population in Livermore grew by approximately 9 percent from 2010 to 2017. ABAG estimates that the population of Livermore will increase to approximately 104,300 persons by 2040, a change of 18 percent (see **Table 5.11-2**). Livermore has an estimated 31,789 housing units as of 2017. As shown in **Table 5.11-3**, Livermore's housing stock grew approximately 5 percent between 2010

[3] ABAG, 2013.
[4] *Ibid.*

and 2017. As mentioned above, the Housing Element of Livermore's General Plan helps guide development and plans for housing needs in Livermore. To meet the General Plan's housing goals, Livermore will need to provide 2,729 new housing units by 2022.

Table 5.11-1 2010-2017 Population and Household Growth

Geographic Area	Population			Households		
	2010[a]	2017[b]	Percent Change	2010[a]	2017[b]	Percent Change
Alameda County	1,510,271	1,663,190	+10%	545,138	569,070	+4%
Dublin	42,657	57,022	+34%	14,913	19,023	+27.5%
Livermore	80,968	88,232	+9%	29,134	31,347	+7.5%

[a]U.S. Census, 2010; [b]ACS, 2017; Circlepoint, 2018

Table 5.11-2 Projected Population and Household Growth (2040)

Geographic Area	Population			Households		
	2017[b]	2040[b]	Percent Change	2017[a]	2040[b]	Percent Change
Alameda County	1,663,190	1,987,900	+19.5%	596,898	705,330	+18%
Dublin	57,022	73,800	+29%	19,587	23,620	+20.5%
Livermore	88,232	104,300	+18%	32,458	40,880	+26%

[a]ACS, 2016; [b]ABAG, 2013; Circlepoint, 2018

Table 5.11-3 Housing Stock Growth

Jurisdiction	Number of Units in 2010[a]	Number of Units in 2017[b]	Percent Increase 2010-2016
Alameda County	582,549	596,898	2.5%
Dublin	15,782	18,804	19%
Livermore	30,342	31,789	5%

[a]U.S. Census, 2010; [b]ACS, 2017; Circlepoint, 2018

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for population and housing were derived from the Environmental Checklist in the California Environmental Quality Act (CEQA) Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this Project.

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria:

A. Displace substantial numbers of people and existing housing, necessitating the construction of replacement housing elsewhere

B. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)

Methodology

To determine potential impacts, the impact significance criteria identified above were applied to construction and operation of the Project. The evaluation is based on existing conditions and applicable planning documents listed above. The analysis takes into consideration both the potential direct impacts of the Project, as well as indirect impacts of the Project in the context of the General Plans and EDSP.

Impact Analysis

No Impact Summary

A. Displace substantial numbers of people and existing housing, necessitating the construction of replacement housing elsewhere

The Project site does not include any existing housing and therefore the Project would not displace existing housing or people, and would not necessitate the construction of replacement housing elsewhere. The existing residences north of the Project site in Dublin would remain and would not be changed as a result of the Project. Therefore, no impact would occur.

Impacts of the Project

B. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)

An evaluation of the Project's direct and indirect impacts is provided below, addressing both construction-period and operational impacts. Construction of the Project would result in a temporary increase in construction-related job opportunities in the local area. Since the opportunities provided by construction would be temporary, construction of the Project would not reasonably result in the relocation of construction workers to the region. Construction employment is, by its nature, an employment type that requires workers to commute or travel to changing job sites, as workers may be employed on several jobs simultaneously. Therefore, the employment opportunities provided by the Project are not anticipated to result in population growth. The Project would not include new employment opportunities beyond those created during the construction period, and would not include any new housing. The Project would not directly affect the rate, type, or amount of growth in eastern Dublin, the County, or Livermore, as the Project includes a roadway extension only. Therefore, the Project would not directly result in substantial population growth.

The Project is consistent with existing and planned land uses in the study area, and would not directly or indirectly induce unplanned population growth. Rather, the Project would indirectly support a planned increase in population and housing in eastern Dublin by providing roadway access and an extension of existing utility lines to developable areas, consistent with local and regional planning documents. The Project would support implementation of Dublin's General Plan and the EDSP, which include the extension of Dublin Boulevard to the Doolan Road/North Canyons Parkway intersection in Livermore. The Project would indirectly support the rate, type, and amount of population growth planned in eastern Dublin. See **Chapter 7.0, Other CEQA Considerations**, for a detailed discussion regarding growth inducement.

The Project would support implementation of the East County Area Plan by providing a connection from eastern Dublin to Livermore through the County. The Project would not connect to or extend existing roadway networks within unincorporated areas of the County. As the Project site is outside the County's urban growth boundary, land use development other than minor agricultural and single-family residential uses associated with agricultural uses, are prohibited. The Project would not include or result in a change in any zoning or land use designation, or alteration of the urban growth boundary. Therefore, the Project would not indirectly induce unplanned population growth in the County. Similarly, the Project would be consistent with Livermore's General Plan, which includes the extension of Dublin Boulevard to the Doolan Road/North Canyons Parkway intersection. The Project would connect to developed areas of Livermore that include existing office and industrial uses, and would add to the larger transportation network to increase access to Priority Development Areas in Livermore. Therefore, the Project would not indirectly induce unplanned population growth in Livermore. For the above reasons, this impact would be **less than significant**.

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and planned residential, commercial, and infrastructure development projects in Dublin, Livermore, and elsewhere around the study area (see **Chapter 4.0, Introduction to Environmental Analysis**).

As mentioned above, planned population growth in each jurisdiction has been fully evaluated in the applicable CEQA clearances for applicable General Plans and individual development projects. The Project would indirectly support development of planned uses and associated planned growth in eastern Dublin, consistent with local and regional planning documents, and would not indirectly induce unplanned growth in any jurisdiction. Future developments in Dublin would be subject to mitigation from prior EIRs such as the Dublin General Plan EIR, EDSP EIR, and the Fallon Village Supplemental EIR. Future development in Livermore would be subject to General Plan consistency and mitigation from the General Plan EIR. Therefore, a cumulative impact would not occur. The Project would not result in a cumulatively considerable contribution to a significant cumulative impact.

REFERENCES

Alameda County, 2000. *East County Area Plan*. Available: https://www.acgov.org/cda/planning/generalplans/index.htm. Accessed: November 22, 2018.

City of Dublin, 2017. *City of Dublin General Plan*. Available: https://www.dublin.ca.gov/DocumentCenter/View/10560/Chapter-12. Accessed: June 5, 2018.

City of Dublin, 1994. *Eastern Dublin Specific Plan*, Amended 2016. Available: https://www.dublin.ca.gov/DocumentCenter/View/7776/EDSP-2016-Update-Full-PDF?bidId=. Accessed: November 2, 2018.

City of Livermore, 2004. *City of Livermore General Plan 2003-2025*. Amended December 2014. Available: http://www.cityoflivermore.net/citygov/cdd/planning/general.htm. Accessed: November 22, 2018.

5.12 PUBLIC SERVICES

INTRODUCTION

This section describes the Project's effect on public services. The following resources were used to prepare this section:

- City of Dublin General Plan (2016)
- Eastern Dublin Specific Plan (2016)
- Alameda County General Plan, East County Area Plan (2002)
- City of Livermore General Plan (2014)
- *Community Impact Assessment* (CIA) prepared for the Project[1]

These documents are available on file with the City of Dublin at 100 Civic Plaza, Dublin, California.

Scoping Issues Addressed

No public or agency comments related to public services were received during the public scoping period for this Draft environmental impact report (EIR).

REGULATORY SETTING

Federal

There are no applicable federal regulations.

State

Police Services

All law enforcement agencies within California are organized and operate in accordance with the applicable provisions of the California Penal Code. This code sets forth the authority, rules of conduct, and training for police officers.

Fire Protection

California Occupational Safety and Health Administration

In accordance with the California Code of Regulations, Title 8, Sections 1270 (Fire Prevention) and 6773 (Fire Protection and Fire Equipment), the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical

[1] A Community Impact Assessment (CIA) evaluates land use, growth, and community character, traffic and transportation/pedestrian and bicycle facilities, and public involvement that may result from the implementation of the project.

services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all fire-fighting and emergency medical equipment.

California Fire Code

The California Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. Fire hazards are addressed mainly through the application of the State Fire Code that addresses access, including roads, and vegetation removal in high fire hazard areas, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, and many other general and specialized fire safety requirements.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code. This includes regulations for building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

Emergency Response

The state passed legislation authorizing the Office of Emergency Services to prepare a Standard Emergency Management System program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with the State Emergency Management Systems could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

Local

City of Dublin

City of Dublin General Plan

Dublin's General Plan establishes the following guiding and implementing policies associated with public services that are relevant to the Project:

Implementing Policy 2.6.4.B.2.a	Utilities and public safety services will be provided at urban standards without financial burden to Dublin residents and businesses outside the Eastern Extended Planning Area.
Guiding Policy 4.2.1.A.2	Cooperate with the Dublin Unified School District to ensure provision of school facilities in the Extended Planning Areas.

Eastern Dublin Specific Plan

Dublin's Eastern Dublin Specific Plan (EDSP) contains the following goal and policies related to public services, utilities and service systems, which are relevant to the Project:

Goal: To ensure that fire protection services in eastern Dublin are consistent with standards maintained in the rest of the city.

Policy 8-5: Time the construction of new facilities to coincide with new service demand in order to avoid periods of reduced service efficiency. The first station will be sited and construction completed prior to completion of initial development in the planning area.

Goal: Provide adequate police services to the eastern Dublin planning area to ensure the health, safety and welfare of existing and future residents, workers, and visitors.

Policy 8-4: Provide additional personnel and facilities and revise "beats" as needed in order to establish and maintain City standards for police protection service in eastern Dublin.

Program 8E: Incorporate into the requirements of project approval Police Department recommendations on project design that affects traffic safety and crime prevention.

Goal: To provide a full complement of community services and facilities as needed in eastern Dublin.

Alameda County

Alameda County General Plan, East County Area Plan

The main goal of the East County Area Plan is to ensure the prompt and efficient provision of police, fire, and emergency medical facility and service needs. Relevant policies include:

Policy 241: The County shall provide effective law enforcement, fire, and emergency medical services to unincorporated areas.

Alameda County Emergency Operations Plan

The purpose of the County's Emergency Operations Plan is to establish policies and procedures and assign responsibilities to effective management of emergency operations within the County.

The County's response to disasters is based on five phases:

1. Prevention
2. Preparedness
3. Response
4. Recovery
5. Mitigation

During each phase, there are specified activities, operational capabilities, and effective responses to a given disaster. The Alameda County Emergency Management Program complies with federal guidance to use the National Incident Management System and state guidance to use the Standardized Emergency Management System. The National Incident Management System provides a comprehensive approach to emergency management for all hazards and creates a consistent approach to domestic emergency management at all jurisdictional levels. The Standardized Emergency Management System is used to manage multi-agency and multi-jurisdictional responses to emergencies in California. The Standardized Emergency Management System consists of five hierarchical levels: Field, Local Government, Operational Area, Regional, and State. The Local Government level for Alameda County consists of the 14 incorporated cities, the County, and special districts. Local governments manage and coordinate the overall emergency response and recovery activities within their jurisdiction.

Livermore

City of Livermore General Plan

Livermore's General Plan, Infrastructure Element provides information and policy guidance related to community infrastructure including police services, fire services, and schools. The following goals, policies, and objectives are relevant to the Project:

Goal INF-5	Maintain a safe environment in Livermore through enforcement of the law, prevention of crime and the function of partnerships with the community.
Policy INF-5.1-P2.	The City shall request notification from the County of development projects within the unincorporated part of the Planning Area that could call for law enforcement services from the City.
Objective INF-5.2	Maintain and improve law enforcement and crime prevention services to keep pace with Livermore's changing population.
Objective INF-6.2	Promote coordination between land use planning and fire protection.
Policy INF-6.2-P2.	The City shall request notification from the County of development projects within the unincorporated part of the Planning Area that could call for fire protection services from the City.

EXISTING CONDITIONS

This section presents information on public services in the study area. The discussion is divided by the type of public service, and further organized by jurisdiction. The public services study area includes the Project site, as well as the entire service district for each public service provider.

Police Services

City of Dublin

The Alameda County Sheriff's Office provides law enforcement to the City of Dublin on a contract basis, known locally as Dublin Police Services. Dublin Police Services have 60 sworn officers and four Sheriff's technicians assigned to the duty station at Dublin Civic Center. Four Dublin civilian employees provide additional support services for Dublin Police Services. The average response time to an emergency call from the time of dispatch to a life-or-death emergency averages 3.5 minutes. The Dublin Police Services responded to 38,551 calls for service in 2018with an average response time to priority calls in 3.5 minutes. This response time meets the Alameda County Sheriff's Office standards and the industry average of five minutes.[2]

Alameda County

The Alameda County Sheriff's Office, in addition to providing police services to Dublin, provides patrol and investigation services to unincorporated areas of the County. The Alameda County Sheriff's Office serves out of locations throughout the County. Criminal investigations, crime prevention, and some business office functions are performed at Dublin Civic Center (100 Civic Center), while dispatch and some data processing functions are handled at Sheriff's Office facilities in Oakland and San Leandro. The Sheriff's Office has over 1,500 authorized positions, including in excess of 1,000 sworn personnel. In addition to the Sheriff's Office, the California Highway Patrol has jurisdiction over public roadways in unincorporated areas of the County.

City of Livermore

The Livermore Police Department (LPD) has 90 officers and 45 full-time personnel. LPD headquarters is located at 1110 South Livermore Avenue, approximately 8 miles southeast of the study area. The average response time to an emergency call is about 4.5 minutes.[3]

Fire Protection and Emergency Response Services

State of California

The California Department of Forestry and Fire Protection (CAL FIRE) is responsible for fire protection and stewardship of over 31 million acres of California's privately-owned wildlands. The CAL FIRE Air Program has aircrafts strategically placed throughout California in order to provide aerial firefighting services. CAL FIRE's groundborne services include an array of fire protection and prevention programs, including general firefighting equipment, wildlife engineering programs, and vegetation management programs.

[2] Alameda County Sherriff's Office. Emergency Services Dispatch. Available: https://www.alamedacountysheriff.org/les_dispatch.php. Accessed: December 4, 2018.
[3] City of Livermore. Livermore Police Department. Available: http://www.cityoflivermore.net/citygov/police/. Accessed: December 5, 2018.

State Responsibility Areas (SRAs) are areas where the state has primary financial responsibility for prevention and suppression of wildfires. The portion of the Project site in unincorporated County land is a SRA.[4] The nearest CAL FIRE station to the Project site is Sunol Fire Station 14, located approximately 8 miles southwest of the Project site. The SRA Fire Prevention Fee is a fee applied to all habitable structures within a given SRA and serves to fund a variety of important fire prevention services in the SRA. Such activities include fuel reduction activities that lessen risk of wildfire to communities and evacuation routes. Other activities include fire prevention engineering, emergency evacuation planning, fire prevention education, fire hazard severity mapping, implementation of state and local Fire Plans and fire-related law enforcement activities such as arson investigation. CAL FIRE may support or supplement local fire response efforts.

City of Dublin

Fire protection services within Dublin are provided by the Dublin Fire Prevention Bureau (DFPB), under The Alameda County Fire Department (ACFD). The ACFD provides Dublin with 36 personnel and operates 3 firehouses.[5] Fire Station 18 is the closest fire station to the Project site, located at 4800 Fallon Road, about .25 miles northwest of the western terminus of the Project site.

Alameda County

The ACFD would provide fire protection to the Project site in unincorporated areas of the County. The ACFD serves approximately 508 square miles and operates 29 fire stations and 35 companies serving a population of 394,000.[6] ACFD serves densely populated urban areas, waterways, industrialized centers, extensive urban interface, agricultural and wildland regions. With over 400 personnel and 100 Reserve Firefighters, ACFD provides a wide variety of services, including three specialized response teams: Hazardous Materials Unit, Urban Search and Rescue Unit, and Water Rescue Team Unit.

The ACFD has mutual aid agreements with the Livermore-Pleasanton Fire Department (LPFD), the San Ramon Valley Fire Department, and the Camp Parks Fire Department.[7] These agreements help to ensure service is sent based on shortest response times and may result in a mix of different agencies responding to a particular call. In the case of a wildland fire within the SRA of the County, CAL FIRE's ground and air resources are available to provide support and fire suppression.

The Alameda County Emergency Operations Plan identifies Emergency Operation Centers (EOCs) responsible for providing extended emergency response operations across the County. Extended emergency operations involve the coordination and management of personnel and resources to mitigate an emergency and facilitate the transition to recovery operations. Alameda County's

[4] CAL FIRE, 2018. Available: http://www.fire.ca.gov/. Accessed: December 4, 2018.
[5] Alameda County, 2018. Alameda County Fire Department, Fire Stations/Facilities. Available: https://www.acgov.org/fire/about/statistics.htm. Accessed: December 4, 2018.
[6] Alameda County, 2018. Alameda County Fire Department, About Us. Available: https://www.acgov.org/fire/about/statistics.htm. Accessed: December 4, 2018.
[7] Alameda County, 2013. *Alameda County General Plan, Safety Element*. Amended 2014. Available: https://www.acgov.org/cda/planning/generalplans/documents/SafetyElementAmendmentFinal.pdf. Accessed: December 4, 2018.

Primary EOC is in Dublin at 4985 Broder Boulevard, approximately 1 mile northwest of the western terminus of the Project site. The EOC is equipped with emergency power generators, radios, telephones, maps, and is staffed 24-hours per day.[8]

City of Livermore

The LPFD is the fire, emergency response, and community service organization serving Livermore. The LPFD operates 10 fire stations, 8 engines, and has 121 employees. The average fire response time is just over 6 minutes as of 2017. The closest fire station to the Project site is Station 10, approximately 4 miles east at 330 Airway Boulevard.[9]

Schools

City of Dublin

The Alameda County Office of Education oversees Dublin Unified School District (DUSD). According DUSD, over 11,500 students from preschool through adult education attend Dublin's schools. Dublin offers 8 elementary schools, 2 middle schools, 1 high school, and 1 alternative high school. The closest DUSD schools to the Project are Cottonwood Creek Elementary School about .25 miles north, Amador Elementary School about 4 miles north, and Fallon Middle school about 5 miles northwest.

Alameda County

The Alameda County Office of Education oversees 18 Unified School District within the County. This agency has oversight responsibilities for district budgets and educational plans, and serves as a district providing school programs for the County's most vulnerable students.

City of Livermore

The Livermore Valley Joint Unified School District (LVJUSD), overseen by the Alameda County Office of Education, serves more than 13,900 of Livermore's students in transitional kindergarten through 12th grade at 11 elementary campuses, 5 middle schools, 2 comprehensive high schools, and 2 alternative schools. LVJUSD also serves the unincorporated County land between Dublin and Livermore. The closest LVJUSD schools to the Project site are Rancho Las Positas Elementary School about 5 miles southeast and Marylin Avenue Elementary School about 6 miles southeast of the Project site.

[8] Alameda County Sheriff's Office of Homeland Security and Emergency Services. 2012. *Alameda County Emergency Operations Plan*. Available: https://www.acgov.org/ready/documents/EmergencyOperationsPlan.pdf. Accessed: December 3, 2018.
[9] Livermore-Pleasanton Fire Department. Available: http://www.cityoflivermore.net/citygov/fire/about/default.htm. Accessed: December 5, 2018.

Community Facilities

City of Dublin

Dublin provides a variety of community facilities, including:

- The Dublin Public Library
- The Dublin Senior Center
- The Civic Center
- Shannon Community Center
- Heritage Park and Museums
- Emerald Glen Park
- "The Wave" Water Park

The Dublin Senior Center is about 8 miles west of the study area, located at 7600 Amador Valley Boulevard. The Senior Center offers a variety of classes, activities, programs, and a large ballroom for events. The Dublin Civic Center is a 53,000 square-foot building about 7 miles west of the Project site and is home to Dublin's administrative offices and Dublin Police Services. The Shannon Community Center is a 19,700 square-foot building that provides a banquet hall for 300 people, a teaching kitchen, two preschool classroom, and meeting spaces. The Center is located about 9 miles northwest from the Project. Dublin Heritage Park and Museums is a 10-acre park with historic buildings, lawns, a historic cemetery, and picnic areas. Two museums are on the site: the 1856 Murray Schoolhouse and the Kolb House. Emerald Glen Park is a 48.2-acre park located at Tassajara Road and Central Parkway. The park features the Emerald Glen Recreation and Aquatic Complex ("The Wave"), which features two pools, a waterslide tower, a Splash Zone, and a community room.

Alameda County

The Alameda County Recreation Plan is a plan for beaches, parks and recreation areas in the County. The Recreation Plan also includes policies for community facilities in the County. All community facilities in the County are under the jurisdiction of the cities they are located in. The Recreation Plan is discussed further in **Section 5.13, Recreation**.

City of Livermore

Livermore's community facilities include the Robert Livermore Community Center (RLCC), swim centers, and sports parks. The RLCC serves as the area's recreation destination and offers 71,000 square feet of indoor space with a community building, recreation building, and a 45,000-square-foot aquatics center. The RLCC provides activities for kids, adults, and seniors. Fairs and showcases are also held at the RLCC. The RLCC is about 5 miles southeast of the Project site.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criterion for public services was derived from the Environmental Checklist in CEQA Guidelines Appendix G. The significance criterion has been amended or supplemented, as appropriate, to address lead agency requirements and the full range of impacts of the Project.

An impact of the Project would be considered significant and would require mitigation if it would meet the following criteria:

A. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, other public facilities

Methodology

To determine potential impacts, the impact significance criteria identified above were applied to construction and operation of the Project. The local and regional planning documents outlined above were used to guide the Project's impact analysis, along with independent research on relevant police, fire, and emergency services.

Impact Analysis

Physical impacts to public services are usually associated with population in-migration and growth in an area, which increase the demand for a particular service, leading to the need for expanded or new facilities.

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: Fire protection, Police protection, schools, parks, other public facilities

The Project would not include the provision of new or physically altered government facilities. There are no government facilities within the Project site or adjacent to the Project. Therefore, the Project would not result in direct physical impacts related to the construction or expansion of government facilities. The Project's potential indirect effects on the need for new or expanded government facilities and response times are described below.

As discussed in **Chapter 3.0, Project Description** and **Chapter 7.0, Other CEQA Considerations**, reasonably foreseeable indirect growth resulting from the Project is already planned for and forecasted in land use regulating documents (i.e., Dublin's General Plan, EDSP, Livermore's General Plan, and the East County Area Plan). Because the Project would not encourage growth beyond what is already planned for and forecasted, the propose improvements would not result in an indirect increased demand for public services. Each type of public service is discussed below.

Fire Protection and Police Protection

Impact SERV-1: Project construction could temporarily result in interference with emergency services access as a result of construction work at the intersections of Dublin Boulevard/Fallon Road and Doolan Road/North Canyons Parkway. **(Less than Significant with Mitigation)**

Construction of the Project may require temporary detouring at the Dublin Boulevard/Fallon Road intersection and Doolan Road/North Canyons Parkway intersection, and temporary closures at the new intersection of Dublin Boulevard and Croak Road. This could result in interference with emergency vehicle access. This impact would be addressed through **Mitigation Measure TRAF-1**, as described in **Section 5.14, Transportation and Traffic**. This measure requires preparation of a traffic management plan (TMP), which would include press releases to notify and inform emergency services of upcoming road closures and detours, and coordination with emergency service providers to ensure that adequate service to the entire service area would be maintained during construction. For the above reasons, this impact would be less than significant with mitigation.

Mitigation for Impact SERV-1:

Mitigation Measure TRAF-1 (described in **Section 5.14, Transportation and Traffic**)

Less than Significant Impacts

Fire Protection and Police Protection

The Project would provide motorists, bicyclists, and pedestrians an alternative local route through an area of eastern Dublin and the County that is presently served by the police and fire services listed above. As discussed in **Chapter 7.0, Other CEQA Considerations**, the Project would primarily redirect existing vehicle trips. As a new roadway, the Project would introduce the opportunity for vehicle accidents, which could require police and fire services. Given that the Project would allow existing travelers to use an alternate route within existing service areas, the overall increase in demand for emergency services is reasonably anticipated to be minimal. Implementation of the Project would potentially improve access and response times for emergency

services traveling within the vicinity of the Project, as emergency vehicles would have an alternative route to use and would have improved access to eastern Dublin and the unincorporated part of the County between Dublin and Livermore.

Dublin, the County, and Livermore have taken the Project into account in planning for the future expansion or addition of police and fire facilities, as each jurisdiction's General Plan (and related EIR) includes the extension of Dublin Boulevard to the Doolan Road/North Canyons Parkway intersection in Livermore. Therefore, the Project would indirectly support implementation of Dublin's General Plan, the EDSP, the East County Area Plan, and Livermore's General Plan. The Project would not result in unplanned demand for police or fire services, or an incremental increase in demand that would reasonably be expected to necessitate new or expanded government facilities. For the above reasons, this impact would be **less than significant**.

Schools

The Project would not include any residential or major employment uses and therefore would not directly result in increased demand for schools. Dublin, the County, and Livermore have taken the Project into account in each jurisdiction's General Plan (and related EIRs). Therefore, the Project would indirectly support implementation of Dublin's General Plan, the EDSP, the East County Area Plan, and Livermore's General Plan. These documents and their related EIRs account for future demand for schools and the provision of schools. Therefore, the Project would not indirectly result in increased demand for schools or result in impacts related to new or expanded schools. For the above reasons, this impact would be **less than significant**.

Parks

The Project would not include any residential or major employment uses that would increase demand for parks in the study area, nor would the Project impact any existing parks. See **Section 5.13, Recreation**, for a detailed discussion regarding Project impacts to parks and recreation facilities. This impact would be **less than significant.**

Other Public Facilities

Open space and other public facilities such as libraries and community centers are typically provided to serve the residents of their respective jurisdictions. Given the Project has no residential component, Project implementation would not directly increase demand for open space or other public facilities. As mentioned above, the Project would indirectly support planned land uses in eastern Dublin by providing roadway access to developable areas, consistent with local and regional planning documents. The Project would not induce demand for other public facilities in unincorporated areas of the County, as the Project would not include any land use changes that would allow residential uses or promote growth in the County. The Project would improve accessibility to open space and other public facilities for existing residents of Dublin and Livermore. Based on the above, this impact would be **less than significant.**

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and planned residential, commercial, and infrastructure development projects in Dublin, Livermore, and elsewhere around the study area (see **Chapter 4.0, Introduction to Environmental Analysis**). The cumulative year for the Project is 2040, and includes the growth projections of Plan Bay Area and jurisdiction's General Plans, along with specific development projects determined to be reasonably foreseeable by each jurisdiction.

The Project would indirectly support the development of planned residential and employment uses in eastern Dublin by providing roadway access to developable areas, consistent with local and regional planning documents. Therefore, an increased demand for public services indirectly resulting from the Project has been accounted for in the EDSP, General Plan, and their respective EIRs, which include provisions to provide adequate public services at projected buildout. The Project, combined with past, present, and reasonably foreseeable future projects, would not exceed those projections, and a cumulative impact to public services would not occur. Land use development other than minor agricultural-related uses is prohibited in unincorporated areas of the County, consistent with the County's urban growth boundary. For the above reasons, a cumulative impact would not occur. The Project would not result in a cumulatively considerable contribution to a significant cumulative impact.

REFERENCES

Alameda County, 2000. *East County Area Plan*. Available: https://www.acgov.org/cda/planning/generalplans/index.htm. Accessed: November 22, 2018.

City of Dublin, 2017. *City of Dublin General Plan*. Available: https://www.dublin.ca.gov/DocumentCenter/View/10560/Chapter-12. Accessed: June 5, 2018.

City of Dublin, 1994. *Eastern Dublin Specific Plan*, Amended 2016. Available: https://www.dublin.ca.gov/DocumentCenter/View/7776/EDSP-2016-Update-Full-PDF?bidId=. Accessed: November 28, 2018.

City of Livermore. 2004. *City of Livermore General Plan 2003-2025*. Amended December 2014.

5.13 RECREATION

INTRODUCTION

This section describes the Project's effect on parks and recreation. Sources of information used to prepare the analysis in this section include:

- City of Dublin General Plan (2016)
- Eastern Dublin Specific Plan (2016)
- Alameda County General Plan, East County Area Plan (2002)
- City of Livermore General Plan (2014)
- *Community Impact Assessment* (CIA) prepared for the Project[1]

These documents are available on file with the City of Dublin at 100 Civic Plaza, Dublin, California.

Scoping Issues Addressed

A comment letter from the East Bay Regional Parks District (EBRP) was received during the public scoping period. Comments in the letter generally pertained to biological resources, induced growth, and the existing urban growth boundaries of Dublin and Alameda County (County). These comments are addressed in **Section 5.3, Biological Resources**; **Section 5.9, Land Use**; and **Chapter 7.0, Other CEQA Considerations**.

REGULATORY SETTING

Federal

There are no applicable federal regulations.

State

There are no applicable state regulations.

Local

Regional

East Bay Regional Parks District Master Plan

East Bay Regional Parks (EBRP) provides and manages the regional parks in Alameda and Contra Costa counties. This includes a 1,400 square mile area with a population of 2.6 million people. The

[1] A Community Impact Assessment (CIA) evaluates land use, growth, and community character, traffic and transportation/pedestrian and bicycle facilities, and public involvement that may result from the implementation of the project.

Master Plan defines the overall mission and vision of the EBRP. The Master Plan contains policies and descriptions of existing programs focusing on providing a high standard of resource conservation, management, interpretation, public access, and recreation.

The Master Plan specifies Doolan Canyon as a future regional preserve. Regional preserves are defined as "an area with outstanding natural or cultural features that are protected for their intrinsic value and for the enjoyment and education of the public." Doolan Canyon is just over 1 mile north of the Project site, and is a publicly accessible regional preserve as of 2017.

City of Dublin

City of Dublin General Plan, Parks and Open Space Element

The Parks and Open Space Element of Dublin's General Plan focuses on methods of conserving open space for the preservation of natural resources and public health. The Parks and Open Space Element includes the following policies that are relevant to the Project:

Guiding Policy A.1	Expand park area throughout the Primary and Extended Planning Areas to serve new development.
Guiding Policy A.1	Provide active parks and facilities which are adequate to meet citywide needs for open space, cultural, and sports facilities, as well as the local needs of the Eastern Extended Planning Area.
Guiding Policy A.2	Establish a trail system with connections to planned regional and sub-regional systems, including north-south corridors such as East Bay Regional Park District's trail along Tassajara Creek north to Mt. Diablo State Park.
Guiding Policy A.3	Using the natural stream corridors and major ridgelines, establish a comprehensive, integrated trail network within the Planning Area that permits safe and convenient pedestrian and bicycle access within urban areas and between urban areas and open space areas. Per the 2005 Fallon Village amendment, in order to preserve biological resources, trails in Fallon Village will not be placed along ridgelines and in stream corridors.
Implementing Policy B.2	Require land dedication and improvements for trails along designated stream corridors. Per the 2005 Fallon Village amendment, in order to preserve biological resources, no land dedication for trails along designated stream corridors outside the open space corridor, shall be required for projects in Fallon Village.

Eastern Dublin Specific Plan

The Eastern Dublin Specific Plan (EDSP) includes goals to develop a comprehensive, integrated park and recreational open space system in eastern Dublin. To do so, the EDSP includes the policies and programs requiring new development to dedicate land to parks, trails, and open space, among other policies.

City of Dublin Recreation and Parks Master Plan

Dublin's *Parks and Recreation Master Plan* was adopted in 2015 by the City Council. The goal of the plan is to build and maintain parks and recreation facilities that both enhance the positive image of Dublin and meet the needs of Dublin into the future. The plan establishes goals, standards, guiding policies, and action programs to guide the acquisition, development, operations, and maintenance of Dublin's park and recreation facilities through the ultimate build-out of the City in accordance with the General Plan.

City of Dublin Bicycle and Pedestrian Master Plan

Dublin's *Bicycle and Pedestrian Master Plan* was adopted in 2014 by the City Council. The plan provides policies, network plans, prioritized project lists, programs, and best practice design guidelines for biking and walking in Dublin. This document seeks to institutionalize the accommodation of the needs of bicyclists and pedestrians. Implementation will include the addition of bicycle and pedestrian facilities as roadways are upgraded and when new roadways are constructed. The following policies are relevant to the project:

Policy 2-1: Implement and maintain an integrated transportation network that allows safe and convenient travel along and across streets for all users, including pedestrian and bicyclists' needs and access at key destinations, such as Downtown Dublin, transit stations, and other major destinations.

Policy 2-2: Expand the existing bicycle network on the basis of access to key destinations to provide low-stress, bicycle facilities if right of way allows, such as buffered bicycle lanes on arterial and collector roadways where appropriate and bicycle routes with sharrows on low-volume residential streets.

Policy 3-3: Install pedestrian countdown signals, modify pedestrian clearance intervals on actual walking speed observed in the field, implement density operations (Flash Do Not Walk timing extension for slow walkers, etc.), and install, replace, and upgrade bicycle signal detectors, as necessary, per the California Manual Uniform of Traffic Control Devices (CA MUTCD) with new signal installation and signal modification projects, whenever possible.

Alameda County

Alameda County General Plan, East County Area Plan

The East County Area Plan was adopted in 1994 to present a clear statement of the County's intent concerning future development and resource conservation within the eastern part of the County. The plan provides programs and specific actions the County will undertake to achieve the goals and policies of the plan. One of the plan's goals is to ensure the development of plentiful and well-designed local and regional parks throughout the County. The following policy is relevant to the project:

Policy 224: The County shall require new developments to provide trails consistent with EBRP and Livermore Area Recreation and Parks District (LARPD) regional trail plans.

Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas

The Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas was adopted in 2012. The plan describes existing conditions for biking and walking, identifies needs for capital and program improvements to support these modes, and recommends improvement projects to enhance biking and walking in unincorporated areas. The following goal and policies are relevant to the project:

GOAL 2: Create and maintain a comprehensive system of bicycle and pedestrian facilities in the local and sub-regional transportation network in order to establish a balanced multi-modal transportation system.

Policy 1.1: Work to ensure that all streets in the Unincorporated Areas are bicycle and pedestrian-friendly providing access for all users, particularly disabled users, seniors, transit users, and children.

Policy 2.1: Continue to support and execute Complete Streets policies in the planning, design, construction, operation, and maintenance of the entire roadway right-of- way to enable safe access for all users in the rural, suburban, and urban Unincorporated Areas. Complete streets are for drivers, pedestrians, bicyclists, and transit riders, as well as for older adults, children, and people with disabilities.

City of Livermore

City of Livermore General Plan, Open Space and Conservation Element

The Open Space and Conservation Element of Livermore's General Plan focuses ensuring the comprehensive and long-range preservation and management of open space land for the protection of natural resources, for economic uses, for outdoor recreation and as a scenic resource. Objective OSC-1.4 of the General Plan prioritizes coordination with other levels of government and interested agencies to preserve natural resources, such as the LARPD. The Open Space and Conservation Element includes the following policy that is relevant to the Project:

Policy OSC-1.4-P3 The City shall encourage and cooperate with the County, EBRPD, LARPD, and other agencies and organizations to establish a program to preserve representative examples of natural and near-natural landscape communities, such as the Springtown Alkali Sink, Brushy Peak, Corral Hollow, Cedar Mountain and Sycamore Grove.

City of Livermore Bicycle, Pedestrian, and Trails Active Transportation Plan

The City of Livermore envisions a vibrant community where people can comfortably walk, bicycle, and access trails for transportation and recreation. The Active Transportation Plan identifies challenges and recommends implementation strategies to improve walking, biking, and trails in Livermore. The following policies are relevant to the Project:

Policy 1.1 Develop and implement projects and improvements to address bicycle and pedestrian safety

Policy 1.3 Build cross town connections for the bicycle, pedestrian, and trail network

Policy 1.6 Coordinate with other agencies, adjacent jurisdictions, and regional partners to plan and implement projects that improve Livermore's network and connections to the region

EXISTING CONDITIONS

Parks and recreation resources may serve local populations, and may also serve the larger region. Users may travel between jurisdictions to access parks and trails. To capture effects from the Project on a regional level, the study area for evaluation of parks and recreation resource impacts includes Dublin, the County, Livermore, and Pleasanton.

Existing Public Parks and Recreational Facilities

Dublin, the County, and Livermore have an extensive park system offering a diverse range of outdoor facilities to meet the needs of the communities. **Table 5.13-1** lists public parks located within 2 miles of the Project site (see **Figure 5.13-1**). Of these, three parks are within 0.5 miles of the Build Alternative: Fallon Sports Park, Jordan Ranch Park, and Bray Commons. All three parks are located in Dublin. Las Positas Golf Club, a public golf course in Livermore, is located 0.2-mile south of the proposed roadway extension, beyond I-580. There are no existing parks on unincorporated County land within 2 miles of the Project; however, Doolan Canyon Regional Preserve is just over 1 mile north of the Project site.

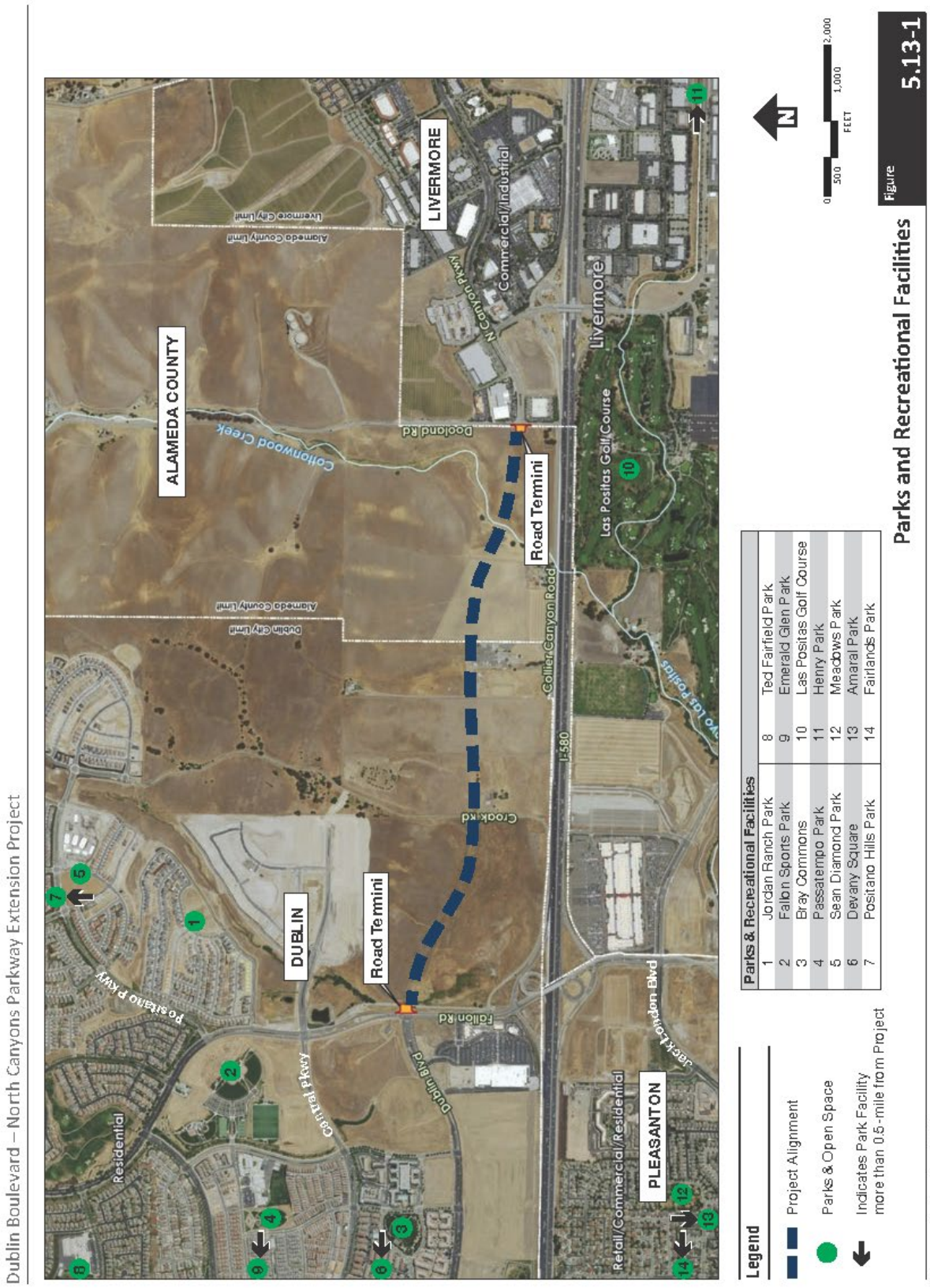

Dublin Boulevard – North Canyons Parkway Extension Project
ALAMEDA COUNTY
LIVERMORE
DUBLIN
PLEASANTON
Road Termini
Road Termini
Livermore
Residential
Positano Pkwy
Central Pkwy
Dublin Blvd
Fallon Rd
Crook Rd
Collier Canyon Road
I-580
Las Positas Golf Course
Las Positas
Dooland Rd
Cottonwood Creek
Alameda County Limit
Dublin City Limit
Livermore City Limit
N Canyon Pkwy
Commercial/Industrial
Jack London Blvd
Retail/Commercial/Residential
Legend
Project Alignment
Parks & Open Space
Indicates Park Facility more than 0.5-mile from Project
Parks & Recreational Facilities
1 Jordan Ranch Park
2 Fallon Sports Park
3 Bray Commons
4 Passatempo Park
5 Sean Diamond Park
6 Devany Square
7 Positano Hills Park
8 Ted Fairfield Park
9 Emerald Glen Park
10 Las Positas Golf Course
11 Henry Park
12 Meadows Park
13 Amaral Park
14 Fairlands Park
N
0 500 1,000 2,000
FEET
Figure 5.13-1
Parks and Recreational Facilities
Source: Circlepoint, 2018

Table 5.13-1 Public Parks within 2 Miles of Project Site

Number[a]	Name of Park	Address	Size	Approximate Distance from Build Alternative
	Dublin			
1	Jordan Ranch Park	4299 Jordan Ranch Dr.	4.4 acres	0.5 mile
2	Fallon Sports Park	4605 Lockhart St.	60 acres	0.3 mile
3	Bray Commons	3300 Finnian Way	4.8 acres	0.6 mile
4	Passatempo Park	3200 Palermo Way	5.1 acres	0.6 mile
5	Sean Diamond Park	4801 La Strada Drive	5.0 acres	0.8 mile
6	Devany Square	4405 Chancery Lane	2 acres	0.7 mile
7	Positano Hills Park	2301 Valentano Dr.	5.1 acres	1.2 miles
8	Ted Fairfield Park	3400 Antone Way,	6.9 acres	1.1 miles
9	Emerald Glen Park	4201 Central Pkwy.	48.2 acres	1.3 miles
	Livermore			
10	Las Positas Golf Course	917 Clubhouse Dr.	200 acres	0.2 mile
11	Henry Park	1525 Mendocino Rd.	5.3 acres	1.8 miles

Source: City of Dublin, 2018, City of Livermore, 2018, Google Earth, 2018; Circlepoint, 2018
[a]Numbering refers to Figure 5.13-1

The existing trail system within Dublin, the County, and Livermore consists primarily of regional trails under the jurisdiction of EBRP and the LARPD. The Iron Horse Trail is a regional trail that traverses Dublin, running in a generally northwest-southeast direction that parallels I-680 before crossing under I-580 into Pleasanton near Owens Drive. The trails closest to the Project site follow the natural waterways in the region, which consist of the Tassajara Creek Trail and the Arroyo Mocho Trail. The Tassajara Creek Trail connects to the Iron Horse Trail just north of I-580 in Dublin and travels east before turning north, following along Tassajara Creek. The Arroyo Mocho Trail provides access from Interstate 680 to the area near the intersection of El Charro Road and Jack London Boulevard in Pleasanton, southwest of the Project site. These trails are located more than 0.5-mile from the Project site.

Planned Public Parks and Recreational Facilities

The Dublin Parks and Recreation Master Plan identifies four general locations for possible future parks north of the Project site. The Master Plan also plans for a Class II bicycle lane and a Class I shared use path along the proposed roadway alignment. The EBRP Master Plan does not include any planned parks or preserves within the Project site, Dublin, Livermore, or unincorporated County areas within 2 miles of the Project. The Master Plan also identifies a possible future regional trail

connecting the San Francisco Bay to the San Joaquin Delta Trail, including access through eastern Alameda County, possibly between Dublin and Livermore. The trail alignment is not specified in the Master Plan.

The Dublin Bicycle and Pedestrian Master Plan presents over 37 miles of proposed bikeways throughout Dublin. The Project is identified in the plan for implementation of a Class IIA Bikeway as a long-term solution to lack of connectivity between Dublin and Livermore. Specific recommendations for proposed Class IIA Bikeways are discussed in the Master Plan.

The Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas identifies needs for capital and program improvements to support these modes, and recommends improvement projects to enhance biking and walking in the Unincorporated Areas. The Master Plan requires that proposed bicycle network additions add signage, striping, and pavement markings. The Master Plan identifies the Project as a proposed addition to the bicycle network.

The Livermore Active Transportation Plan identifies several proposed access and network improvements across Livermore. The Active Transportation Plan reflects the City of Dublin's planned extension of Dublin Boulevard and identifies proposed bicycle, pedestrian, and trail network improvements. As identified in the Active Transportation Plan, the Dublin Boulevard extension would provide crosstown route improvements and trail connection improvements for multimodal travelers between Dublin and Livermore.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for recreation impacts were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of impacts of the Project.

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria:

A. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated

B. Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment

Methodology

To determine potential impacts, the impact significance criteria identified above were applied to construction and operation of the Project. The local and regional planning documents outlined above were used to guide the Project's impact analysis, along with independent research on relevant regional parks or recreational facilities.

Impact Analysis

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated

   and

B. Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment

Physical impacts to parks and recreation facilities are usually associated with population in-migration and growth in an area, which increase the demand parks and recreation services, leading to the need for expanded or new facilities. The Project does not include the construction or expansion of any recreational facilities, nor does it include any housing or major employment uses, and therefore would not directly generate new users or demand for local parks or other recreational facilities.

The Project would provide a connection from the Dublin Boulevard/Fallon Road intersection in Dublin to the Doolan Road/North Canyons Parkway intersection in Livermore, through unincorporated areas of the County. This connection would improve overall local access to local and regional parks such as Doolan Canyon Regional Preserve, accessible from Doolan Road. As discussed in **Section 5.14, Transportation and Traffic** and **Chapter 7.0, Other CEQA Considerations**, the Project would not generate new vehicle trips, but would instead provide alternative access for existing drivers, bicyclists, and pedestrians. Therefore, the Project would not indirectly increase demand for existing parks and facilities.

Dublin, the County, and Livermore have taken the Project into account in planning for the future expansion or addition of parks and recreational facilities, as each jurisdiction's General Plan (and related EIR) includes the extension of Dublin Boulevard to the Doolan Road/North Canyons Parkway intersection in Livermore. Further, implementation of bicycle, pedestrian, and trail infrastructure for the Dublin Boulevard extension has been planned for in the Dublin Bicycle and Pedestrian Master Plan, the Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas, and Livermore's Active Transportation Plan. Therefore, the Project would indirectly support implementation of Dublin's General Plan, the EDSP, the East County Area Plan, Livermore's General Plan, Dublin's Bicycle and Pedestrian Master Plan, Alameda County's Bicycle and Pedestrian Master Plan, and Livermore's Active Transportation Plan. The Project would not result in unplanned demand for local and regional parks or recreational facilities, or an incremental increase in demand that would reasonably be expected to necessitate new or expanded recreational facilities. For the above reasons, this impact would be **less than significant.**

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and planned residential, commercial, and infrastructure development projects in Dublin, Livermore, and elsewhere around the study area (see **Chapter 4.0, Introduction to Environmental Analysis**).

As mentioned above, indirect increases in demand for parks have been accounted for in local planning documents, and the Project would support implementation of local and regional planning documents. Though the development of future land uses in Dublin may increase demand for parks and recreation facilities, Dublin's General Plan and the EDSP includes planned parks and open space to meet the needs of the community. The Project would not interfere with or prohibit the implementation of future parks or trails, such as the conceptual regional trail identified in the EBRP Master Plan. The Project would provide pedestrian facilities would have the potential to become a part of local or regional trail networks. For the above reasons, a cumulative impact would not occur. The Project would not result in a cumulatively considerable contribution to a significant cumulative impact.

REFERENCES

Alameda County, 2000. *East County Area Plan*. Available: https://www.acgov.org/cda/planning/generalplans/index.htm. Accessed: November 22, 2018.

Alameda County, 2012. Bicycle and Pedestrian Master Plan for Unincorporated Areas. Available: https://static1.squarespace.com/static/57573edf37013b15f0435124/t/57d09e1ac534a53f9d37842f/1473289762175/Bike-Ped-Plan-for-Unincorporated-Final.pdf. Accessed: March 1, 2019.

City of Dublin, 2017. *City of Dublin General Plan*. Available: https://www.dublin.ca.gov/DocumentCenter/View/10560/Chapter-12. Accessed: June 5, 2018.

City of Dublin, 1994. *Eastern Dublin Specific Plan*, Amended 2016. Available:https://www.dublin.ca.gov/DocumentCenter/View/7776/EDSP-2016-Update-Full-PDF?bidId=. Accessed: November 28, 2018.

City of Dublin, 2014. *Bicycle and Pedestrian Master Plan*. Available: http://www.ci.dublin.ca.us/DocumentCenter/View/7738/Bike-and-Ped-Plan-and-Guidelines-1?bidId=. Accessed: March 1, 2019.

City of Dublin, 2015. *Parks and Recreation Master Plan*. Available: http://ca-dublin.civicplus.com/DocumentCenter/View/5063/Park-and-Recreation-Master-Plan---2015-Update?bidId. Accessed: December 6, 2018.

City of Livermore, 2004. *City of Livermore General Plan 2003-2025*. Amended December 2014.

City of Livermore, 2018. Bicycle, Pedestrian, & Trails Active Transportation Plan. Available: http://www.cityoflivermore.net/civicax/filebank/documents/18254/. Accessed: March 1, 2019.

East Bay Regional Parks District, 2013. *East Bay Regional Parks District Master Plan*. Available: https://www.ebparks.org/civicax/filebank/blobdload.aspx?BlobID=23499. Accessed: December 6, 2018.

This Page Intentionally Left Blank

5.14 TRANSPORTATION AND TRAFFIC

INTRODUCTION

This section describes the Project's effect on transportation and traffic. Information in this section is drawn from the *Transportation Impact Assessment* (TIA) prepared by Kittelson & Associates in August 2018 (see **Appendix D** of this Draft Environmental Impact Report (EIR)).

Scoping Issues Addressed

During the public scoping period for this Draft EIR, comments regarding transportation and traffic were received from individuals and Caltrans. Comments generally related to the following:

- Support of the Project as a local connection between Dublin and Livermore
- Requests for the Project to include bicycle and pedestrian facilities, and specifically that bike lanes be protected from vehicles
- Request that the Project include transit facilities (such as bus stops and park-and-ride areas) and transit service
- Request that the Project traffic analysis include key intersections, queuing impacts, and funding requirements for roadway and intersection improvements
- Concerns that the Project will increase local congestion in Dublin and Livermore, and encourage development in eastern Dublin
- Concern that Bay Area Rapid Transit System (BART) overflow parking could affect the Project
- Request that a vehicle miles traveled (VMT) analysis be completed for the Project

As discussed in **Chapter 3.0, Project Description** and below, the Project design includes pedestrian and bicycle facilities. The Project design anticipates future transit service along the roadway, and allows for future implementation of transit infrastructure such as bus stops and optimization of signal timing. The analysis below includes a level of service (LOS) evaluation of key intersections that could be impacted by the Project, and a queuing impact analysis is also provided. These analyses provide information on how the Project would effect congestion in the local area. Parking impacts are not discussed, as the Project would not create or remove parking, and would not indirectly increase demand for parking. Additionally, evaluation of parking impacts is not a requirement of California Environmental Quality Act (CEQA). A VMT analysis is provided for informational purposes in **Chapter 7.0, Other CEQA Considerations**.

REGULATORY SETTING

Federal

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) prohibits discrimination toward people with disabilities and guarantees that they have equal opportunity to participate in government programs and services. The ADA includes requirements pertaining to transportation infrastructure. The 2010 ADA Standards for Accessible Designs set minimum requirements for new and altered state and local government facilities, public accommodations, and commercial facilities. These standards apply to accessible walking routes, curb ramps, and other transportation facilities and require these facilities to be readily accessible and usable by individuals with disabilities.

State

California Complete Streets Act of 2008

This act requires circulation elements of local general plans to accommodate a multimodal transportation network that meets the needs of all users in a manner that is suitable to context of the jurisdiction. Users are defined to include all users of the transportation network, including pedestrians, bicyclists, transit riders, and drivers, along with specific groups of users such as persons with disabilities, seniors, and children.

Regional

Alameda County Transportation Commission Congestion Management Program

The Alameda County Transportation Commission (ACTC) manages the county's transportation sales tax and services as the county's congestion management agency. ACTC requires projects that generate more than 100 PM peak hour trips to analyze Project impacts to the Metropolitan Transportation System (MTS) roadways.

Local

City of Dublin

<u>City of Dublin General Plan</u>

The City of Dublin General Plan establishes the following guiding and implementing policies associated with transportation that are relevant to the Project:

Guiding Policy 5.2.2.A.1:	Design streets to (1) include sufficient capacity for projected traffic, (2) minimize congested conditions during peak hours of operation at intersections, (3) serve a variety of transportation modes including vehicles, bicycles, pedestrians and transit, and variety of users including people

	with disabilities, children, and seniors, (4) provide continuity with existing streets, and (5) allow convenient access to planned land uses.
Guiding Policy 5.2.2.A.3:	The goals, policies, and implementation measures for street design in Section 10.8 of the Community Design and Sustainability Element should be consulted when new streets are being designed and/or existing streets are being modified.
Guiding Policy 5.2.2.A.4:	Reserve right-of-way and construct improvements necessary to allow streets to accommodate projected vehicular traffic with the least friction.
Guiding Policy 5.2.2.A.5:	The City shall consider the Tri-Valley Transportation Plan and Action Plan and the City of Dublin Complete Streets Policy when adopting or amending the Circulation Element of the General Plan, Specific Plans, Zoning Ordinances or the Capital Improvement Program.
Guiding Policy 5.2.2.A.6:	The City shall strive to phase development and roadway improvements so that the operating Level of Service (LOS) for intersections in Dublin does not exceed LOS D. However, intersections within the Downtown Dublin Specific Plan area (including the intersections of Dublin Boulevard/San Ramon Road and Village Parkway/Interstate 680 onramp) are excluded from this requirement and may operate at LOS E or worse as long as the safety for pedestrians and bicyclists is maintained and impacts to transit travel speeds are minimized.
Guiding Policy 5.2.2.A.7:	The City will comply with all provisions of the Alameda County Congestion Management Program and will review proposed development projects to ensure compliance with this Program.
Implementing Policy 5.2.2.B.1:	Design streets according to the forecasted demand and maximum design speeds listed above, and to the detailed standards set forth in the City of Dublin's Street Design Standards and Standard Plans which are maintained by the Public Works Department, as well as the listed Additional Policies.

Implementing Policy 5.2.2.B.2:	Design and construct all roads in the City's circulation network as defined in Figure 5-1 [Exhibit 3.6-4a] as well as bicycle and pedestrian networks as defined in the City of Dublin Bicycle and Pedestrian Master Plan.
Guiding Policy 5.2.3.A.1:	Provide an integrated multi-modal circulation system that provides efficient vehicular circulation while providing a design that allows safe and convenient travel along and across streets for all users, including pedestrians, bicyclists, persons with disabilities, seniors, children, youth, and families; and encourages pedestrian, bicycle, transit, and other non-automobile transportation alternatives.
Implementing Policy 5.2.3.B.1:	Provide continuity with existing streets, include sufficient capacity for projected traffic, and allow convenient access to planned land uses.
Implementing Policy 5.2.3.B.2:	Require the following major circulation improvements in the Eastern Extended Planning Area: a. Provide for the extension of Dublin Boulevard from Fallon Road to North Canyons Parkway and for the construction of other streets designed in accordance with the City of Dublin's Designs Standards and Standard Plans and in compliance with Figure 5-1.
Implementing Policy 5.2.3.B.3:	Provide potential for additional future roadway connections linking existing Dublin to the Eastern Extended Planning Area.
Guiding Policy 5.3.1.A.1:	Support improved local transit as essential to a quality urban environment, particularly for residents who do not drive.
Guiding Policy 5.3.1.A.2:	Support the development of a community that facilitates and encourages the use of local and regional transit systems.
Implementing Policy 5.3.1.B.2:	Require dedication of land and the construction of improvements to support the use of public transit in the community. Improvements could consist of bus turnouts, shelters, benches, real time arrival information, and other facilities that may be appropriate.
Implementing Policy 5.3.1.B.4:	Capitalize on opportunities to connect into and enhance ridership on regional transit systems including BART, LAVTA and any future light rail systems.

Guiding Policy 5.4.3.A.1:	Plan for all users by creating and maintaining Complete Streets that provide safe, comfortable, and convenient travel along and across streets (including streets, roads, highways, bridges, and other portions of the transportation system) through a comprehensive, integrated transportation network that meets the requirements of currently adopted transportation plans and serves all categories of users.
Guiding Policy 5.4.3.A.3:	Make Complete Streets practices a routine part of everyday operations, approach every relevant project, program, and practice as an opportunity to improve streets and the transportation network for all categories of users in accordance with the City of Dublin's Complete Streets Policy.
Guiding Policy 5.4.3.A.4:	Complete Streets infrastructure sufficient to enable reasonably safe travel along and across the right of way for each category of users adhering to local conditions and needs will be incorporated into all planning, funding, design, approval, and implementation processes for all projects.
Guiding Policy 5.4.3.A.5:	Work with other jurisdictions in partnering to create a truly multi-modal transportation infrastructure within and across the City.
Guiding Policy 5.5.1.A.1:	Provide safe, continuous, comfortable and convenient bikeways throughout the City.
Guiding Policy 5.5.1.A.3:	Enhance the multi-modal circulation network to better accommodate alternative transportation choices including BART, bus, bicycle, and pedestrian transportation.
Implementing Policy 5.5.1.B.1:	Complete the bikeways systems illustrated on Figures 5-3a and 5-3b.
Implementing Policy 5.7.1.B.2:	Implement the Eastern Dublin Scenic Corridors Policies and Standards for projects within the Eastern Extended Planning Area.

Eastern Dublin Specific Plan

The Eastern Dublin Specific Plan (EDSP) contains the following goals and policies relevant to the Project:

Goal: To provide a circulation system for eastern Dublin that is convenient and efficient, and encourages the use of alternative modes of transportation as a means of improving community character and reducing environmental impacts.

Policy 5-2: Require all development to provide a balanced orientation toward pedestrian, bicycle, and automobile circulation.

Policy 5-3: Plan development in eastern Dublin to maintain Level of Service D or better as the average intersection level of service at all intersections within the Specific Plan area during AM, PM and midday peak periods. The average intersection level of service is defined as the hourly average.

Goal: To establish a vehicle circulation system which provides sufficient capacity for projected traffic and allows convenient access to land uses, while maintaining a neighborhood scale to the residential street system.

Policy 5-4: Provide four, six and eight lane arterial streets to carry major community and sub-regional traffic through the Specific Plan area.

Goal: To maximize opportunities for travel by public transit.

Goal: To provide a safe and convenient pedestrian circulation system in eastern Dublin, designed for functional and recreational needs.

Goal: To provide opportunities for safe, continuous, comfortable and convenient bikeways in eastern Dublin.

Policy 5-17: Establish a bicycle circulation system which helps to serve the need for non-motorized transportation and recreation in eastern Dublin that is consistent with the Dublin Bicycle and Pedestrian Master Plan.

2014 City of Dublin Bicycle and Pedestrian Master Plan

The *2014 City of Dublin Bicycle and Pedestrian Master Plan* combines an update to the *2007 Dublin Bikeways Master Plan* and Dublin's first pedestrian master plan into a comprehensive document. The plan includes policies, network plans, prioritized project lists, support programs, and best practice design guidelines for bicycling and walking in Dublin.[1] This document identifies the Dublin Boulevard Corridor as providing Class II Bicycle Lanes[2] along the extension of Dublin Boulevard between Fallon Road and North Canyons Parkway.

Alameda County

Alameda County General Plan, East County Area Plan

The East County Area Plan includes the future extension of Dublin Boulevard from eastern Dublin to Livermore at North Canyons Parkway. The Transportation section of the East County Area Plan includes goals and policies relevant to the Project. These include:

[1] City of Dublin. 2014. Bicycle and Pedestrian Master Plan.
[2] Class II bicycle lanes provide a striped lane for one-way bike travel on a street or highway.

Policy 176: The County shall allow development and expansion of transportation facilities (e.g., streets and highways, public transit, bicycle and pedestrian paths, airports, etc.) in appropriate locations inside and outside the Urban Growth Boundary consistent with the policies and Land Use Diagram of the East County Area Plan.

Policy 188: The County shall promote the use of transit, ridesharing, bicycling, and walking, through land use planning as well as transportation funding decisions.

Policy 195: The County shall design and locate intercity arterials to minimize impacts on adjacent uses and provide adequate local access to encourage local trips and reduce dependence on freeways. The County shall provide for street rights-of-way that are large enough to accommodate landscaping and street furniture such as bus shelters and light standards to maximize attractiveness to pedestrians, and where appropriate, to accommodate transit corridors.

Policy 201: The County shall promote (1) trunkline transit service to serve local trips between regional job centers, major shopping areas, Las Positas College, major recreational destinations, South Livermore Wine Country, the North Livermore Intensive Agriculture Area, and East Dublin BART, and (2) feeder transit service between East Dublin BART stations and major East County job centers to facilitate commuting from west Alameda County.

Policy 211: The County shall create and maintain a safe, convenient, and effective bicycle system that maximizes bicycle use.

Policy 212: The County shall create and maintain a safe and convenient pedestrian system that links residential, commercial, and recreational uses and encourages walking as an alternative to driving.

Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas

The *2012 Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas* provides a vision for bicycling and walking in the County as important alternative transportation modes.[3] The plan also identifies implementable projects that will contribute to a more bicycle- and pedestrian-friendly environment in unincorporated areas. This document identifies Class II bike lanes on Dublin Boulevard between Tassajara and Fallon Roads (partially completed), with a proposed extension of Dublin Boulevard between Fallon Road and Doolan Road, connecting in Livermore to Class II bike lanes on North Canyon Parkway.

As of December 2018, the Alameda County Public Works Agency is updating the *Bicycle and Pedestrian Master Plan*.[4] This updated plan will develop strategies to improve bicycle and

[3] Alameda County Public Works Agency. 2012. Bicycle and Pedestrian Master Plan.

[4] Alameda County Public Works Agency. 2018. Bicycle and Pedestrian Master Plan. https://www.acpwa.org/pas/bicycle-and-pedestrian-master-plan. Accessed: December 6, 2018.

pedestrian safety; increase access to work, school, shopping, recreation, and transit; and facilitate more walking and biking in unincorporated areas.

City of Livermore

City of Livermore General Plan

The Circulation element of Livermore's General Plan provides the policy framework for regulation and development of transportation systems in Livermore. It includes goals and policies for increasing multi-modal infrastructure, such as Complete Streets, throughout Livermore. The Circulation element includes policies focused on coordination across local jurisdictions, other agencies, and transit service providers to increase connectivity and multi-modal infrastructure across jurisdictions. The Circulation element also lists the Project as a planned roadway extension.

City of Livermore Bicycle, Pedestrian, and Trails Active Transportation Plan

The Livermore Bicycle, Pedestrian, and Trails Active Transportation Plan contains policies and strategies to help Livermore realize a safer, more comfortable active transportation environment with a thriving walking and biking culture. Livermore's major arterial streets carry multiple lanes of high speed vehicle traffic, creating high stress corridors and crossings for bicyclists and pedestrians. The Active Transportation Plan prioritizes projects that will create safer and more convenient routes for bicyclists and pedestrians. This document reflects the City of Dublin's planned extension of Dublin Boulevard and identifies proposed bicycle, pedestrian, and trail network improvements. The following policies are relevant to the Project:

Policy 1.1 Develop and implement projects and improvements to address bicycle and pedestrian safety

Policy 1.5 Establish safe crossings of barriers including high volume roadways, freeway interchanges, railroads, arroyos, and other barriers

EXISTING CONDITIONS

Information in this section is based on the TIA (see **Appendix D** of this Draft EIR) approved in August 2018. The study area for transportation and traffic includes local intersections in Dublin, Pleasanton, and Livermore which could be affected by the Project, shown in **Figure 5.14-1.**

Roadway System

The Project site is located north of Interstate 580 (I-580) between Fallon Road and Doolan Road. Roadway facilities of note in the study area include:

- **I-580.** I-580 is part of the interstate freeway system and extends in an east/west direction from San Rafael in the west to Tracy in the east. Near Dublin, I-580 forms the southern city boundary with four to five lanes in each direction. Express Lanes are available in the Project vicinity Monday through Friday 5:00 a.m. to 8:00 p.m. in both the eastbound and westbound directions. There are two eastbound express lanes from Hacienda Drive to Greenville Road

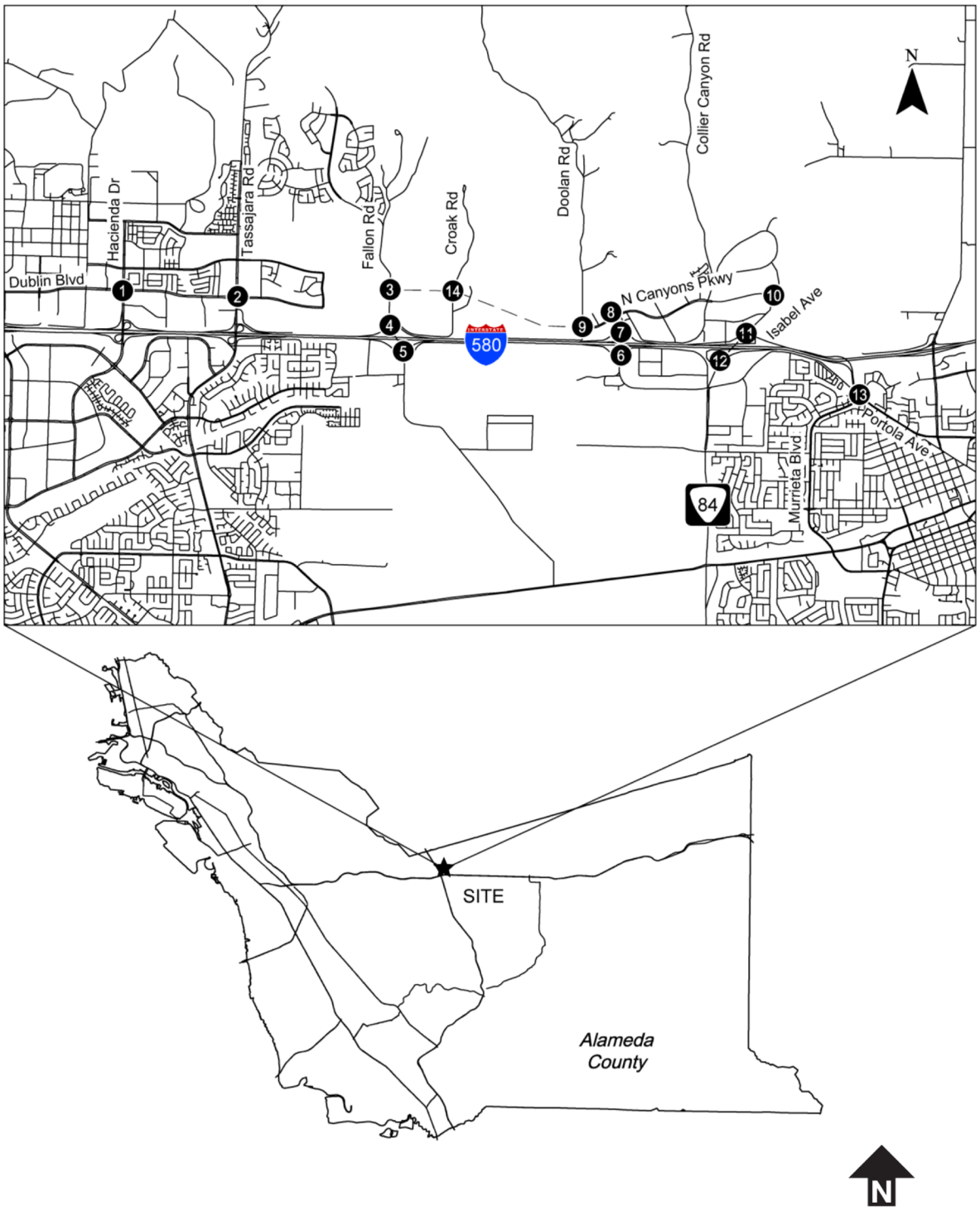
and one westbound lane from Greenville Road to west of the I-580/Interstate 680 (I-680) interchange. Carpools can use the lanes for free while solo drivers are able to use them by paying a toll. All drivers, even carpools, motorcycles, and clean-air vehicles, must use a FasTrak toll tag. I-580 is most directly accessible to the Project via the Fallon Road and Airway Boulevard interchanges.

- **I-680.** I-680 is a north/south designated scenic highway that is part of the interstate freeway system connecting San José to Interstate 80 (I-80) near Fairfield. This facility traverses Dublin with an interchange at I-580 in western Dublin, as well as on- and off-ramps near Dublin Boulevard. South of I-580 it is a six-lane freeway, and north of I-580 it generally provides eight lanes, including Express Lanes that were completed in Fall 2017, which adhere to the same hours and rules as those on I-580. The northbound express lane begins at Alcosta Boulevard and ends at Livorna Road near the State Route 24 interchange. The southbound lane begins at Rudgear Road and ends at Alcosta Boulevard.

- **Dublin Boulevard.** Dublin Boulevard is an east-west principal arterial roadway that extends from west of San Ramon Road to its current terminus at Fallon Road. Dublin's General Plan envisions the Project by extending Dublin Boulevard to North Canyons Parkway in Livermore. Existing Dublin Boulevard is generally a four- to six-lane facility with a landscaped median. No on-street parking is permitted. Bicycle lanes and sidewalks are provided on portions of Dublin Boulevard.

- **Fallon Road.** Fallon Road is a north-south minor arterial roadway that connects I-580 to Tassajara Road. It currently provides two travel lanes in each direction between I-580 and Central Parkway. This segment is ultimately planned to provide three lanes in each direction. Fallon Road is being upgraded as development occurs on parcels fronting the roadway and will ultimately provide sidewalks and bicycle facilities along its length.

- **North Canyons Parkway.** North Canyons Parkway is an east-west arterial roadway north of I-580. This arterial is primarily a four-lane divided roadway with left turn pockets where applicable. The street currently terminates at Doolan Road to the west and connects to Portola Avenue to the east.



Study Intersections Figure **5.14-1**

Source: Kittelson & Associates, 2018

- **Portola Avenue.** Portola Avenue is a major east-west arterial roadway in Livermore that operates north of downtown. South of I-580, this arterial is primarily a four-lane divided roadway with left turn pockets where applicable. North of I-580, this roadway varies from two lanes to six lanes. Portola Avenue connects several neighborhoods and businesses and provides direct connection to other major arterial roadways throughout northern Livermore. In 2012, as the final component of the Isabel/I-580 Interchange project, Portola Avenue was extended over I-580 to connect with North Canyons Parkway near Las Positas College, north of the Isabel Station site.

- **Isabel Avenue.** Isabel Avenue is a north-south arterial roadway, a portion of which is also designated as State Route 84 (SR-84). Isabel Avenue typically carries heavy commuter traffic along western Livermore. The arterial roadway traverses the entire length of Livermore, provides direct access to I-580, and connects several neighborhoods and commercial areas in western Livermore. Isabel Avenue provides two travel lanes in each direction near I-580 and reduces to one travel lane in each direction south of Jack London Boulevard, with left turn pockets at key locations. The roadway has two lanes with a painted median at major intersection locations. The SR-84 Expressway Widening project, currently under construction and due for completion in 2018, will upgrade Isabel Avenue to expressway standards. Upon completion, Isabel Avenue will feature three lanes in each direction between Jack London Boulevard and Stanley Boulevard and two lanes in each direction between Stanley Boulevard and Ruby Hill Drive. Isabel Avenue would provide access to the proposed Isabel transit station facilities north and south of I-580.

- **Murrieta Boulevard.** Murrieta Boulevard a north-south arterial roadway in western Livermore, and includes two lanes in each direction, with a raised median and left turn pockets at most intersections. The street connects to Portola Avenue in the north and Fourth Street in the south. The roadway provides access to I-580 from western Livermore.

Transit Services

Transit service in the area is provided by Wheels (Livermore-Amador Valley Transit Authority), The County Connection, the BART, and Altamont Commuter Express (ACE).

- Wheels provides fixed-route and paratransit service throughout Dublin, Pleasanton, and Livermore, and provides connections to other transit service providers. Wheels buses connect major destinations within the Dublin, Pleasanton and Livermore, including downtown areas, employment centers, and transit hubs such as BART and ACE stations. Wheels provides shuttle services between the ACE stations and major employment and residential areas in Pleasanton and Livermore. Wheels bus schedules are also coordinated with ACE and BART trains during peak commute hours.

- The County Connection provides transit service connecting destinations in Contra Costa County to the Tri-Valley area, including service from the East Dublin/Pleasanton BART station to the San Ramon Transit Center and Bishop Ranch Business Park. There is also a

route that connects the Walnut Creek BART station to the Downtown Pleasanton ACE station.

- BART provides regional transportation connections to much of the Bay Area and the Dublin/Pleasanton line provides direct access to San Francisco, with several stops in Oakland where connections may be made to other lines. The closest BART station is the Dublin/Pleasanton Station located approximately 3.5 miles west of the intersection of Fallon Road and Dublin Boulevard. BART train frequency ranges between 15 and 20 minutes from approximately 5:00 a.m. to 12:00 a.m. Based on 2015 data from BART, approximately 8,000 passengers per day enter and exit the BART system at the Dublin/Pleasanton station.
- ACE operates weekday train service between Stockton and San José with Tri-Valley stops in downtown Pleasanton and Livermore. During the morning commute period, only westbound service from San Joaquin County to San José is provided, while only eastbound service is provided in the evening commute period. There are four morning trains through Pleasanton between 5:33 a.m. and 8:18 a.m., and four evening trains between 4:28 p.m. and 7:31 p.m. Travel time from Stockton to Pleasanton is approximately one hour and fifteen minutes, while travel time from the Tri-Valley to San José is approximately one hour. ACE trains carry approximately 4,000 passengers on a typical weekday, with approximately 600 passengers boarding the ACE system at the downtown Pleasanton Station on a typical weekday.

Bicycle and Pedestrian Facilities

City of Dublin

While Dublin Boulevard and Fallon Road are designated as streets with bike lanes on Dublin's Bike Lanes and Trails Map, no striping or dedicated bike lanes currently exist on these roadways near the Project. Pedestrian facilities include sidewalks, pathways, crosswalks, and pedestrian signals. Sidewalks are provided along most roadways in Dublin where land uses have been developed adjacent to the roadway. Roadways near the Project with undeveloped parcels do not currently provide sidewalks.

Alameda County

The County portions of the transportation study area are generally undeveloped, and Collier Canyon Road is the only roadway within the County in this area. This segment of Collier Canyon Road does not provide formal bicycle or pedestrian facilities.

City of Livermore

According to the Livermore General Plan Circulation element, Livermore provides or plans to provide Class I Bike Lanes on North Canyons Parkway and Doolan Road. Sidewalks are also provided on the north side of this roadway segment.

Study Intersections

The transportation study area, determined in consultation between Dublin, Livermore, and the County, includes thirteen intersections that exist today and one intersection that would exist once the Project is implemented (shown in **Figure 5.14-1**). This impact analysis does not include any freeway analyses because the Project is a transportation improvement for arterial streets rather than a change in land uses which may attract new trips. Similarly, this Draft EIR does not include the analysis of any Congestion Management Program (CMP) facilities because the Project would not generate more than 100 PM peak hour trips. The study intersections include:

1. Hacienda Drive and Dublin Boulevard (Dublin, CA)
2. Tassajara Road and Dublin Boulevard (Dublin, CA)
3. Fallon Road and Dublin Boulevard (Dublin, CA)
4. Fallon Road and I-580 WB Ramps (Dublin, CA)
5. El Charro Road and I-580 EB Ramps (Pleasanton, CA)
6. Airway Boulevard and I-580 EB Ramps (Livermore, CA)
7. Airway Boulevard and I-580 WB Ramps (Livermore, CA)
8. Airway Boulevard and North Canyons Parkway (Livermore, CA)
9. Doolan Road and North Canyons Parkway (Livermore, CA)
10. Isabel Avenue and Portola Avenue (Livermore, CA)
11. Isabel Avenue and I-580 WB Ramps (Livermore, CA)
12. Isabel Avenue and I-580 EB Ramps (Livermore, CA)
13. Murrieta Boulevard and Portola Avenue (Livermore, CA)
14. Croak Road and Dublin Boulevard Extension (Future) (Dublin, CA)

Methodology

The impacts of the Project were evaluated by comparing the findings of the delay and LOS under the following scenarios:

- Existing and Existing Plus Project (2017)
- Opening Year and Opening Year Plus Project (2025)
- Cumulative Year and Cumulative Year Plus Project (2040)

Level of Service and Measures of Effectiveness

LOS describes the operating conditions experienced by users of a transportation facility, measured best to worst from A to F. LOS is a qualitative measure that considers roadway speed, travel time, traffic interruptions, freedom to maneuver, driving comfort, and convenience. LOS A through LOS E represents traffic volumes below roadway capacity, while LOS F represents traffic volumes that exceed roadway capacity. However, LOS E through F represents roadway congestion where delays are substantial. The TIA (see **Appendix D** of this Draft EIR) includes intersection analyses using the following methodologies, summarized in **Table 5.14-1**:

- Signalized intersection. The TIA calculates a weighted average control delay in seconds per vehicle at a signalized intersection and assigns a LOS designation based upon the delay.
- Unsignalized intersection. The TIA calculates a weighted average control delay in seconds per vehicle for each controlled intersection leg and for the intersection. A LOS designation for all-way stop-controlled intersections is based upon the weighted average control delay for all intersection legs, like the LOS designation for signalized intersections. For two-way stop-controlled intersections, the LOS for the worst approach is used as the LOS performance measure.

Table 5.14-1 Intersections Level of Service Definitions

Signalized Intersection			Unsignalized Intersection
Average Delay Per Vehicle (Seconds)	**LOS**	**Description of Traffic Conditions**	**Average Delay Per Vehicle (Seconds)**
≤10.0	A	Free flowing. Most vehicles do not have to stop.	≤10.0
>10.0 and ≤20.0	B	Minimal delays. Some vehicles must stop, although waits are not bothersome.	>10.0 and ≤ 15.0
>20.0 and ≤35.0	C	Acceptable delays. Significant numbers of vehicles must stop because of steady, high traffic volumes. Still, many pass without stopping.	>15.0 and ≤25.0
>35.0 and ≤55.0	D	Tolerable delays. Many vehicles must stop. Drivers are aware of heavier traffic. Cars may have to wait through more than one red light. Queues begin to form, often on more than one approach.	>25.0 and ≤35.0
>55.0 and ≤80.0	E	Significant delays. Cars may have to wait through more than one red light. Long queues form, sometimes on several approaches.	>35.0 and ≤50.0
>80.0	F	Excessive delays. Intersection is jammed. Many cars must wait through more than one red light, or more than 60 seconds. Traffic may back up into "up-stream" intersections.	>50.0

Source: Kittleson & Associates, Inc., 2018

Forecasted Traffic Modeling

As the Project is anticipated to have a regional impact, the TIA utilized the ACTC Countywide traffic model, accounting for specific updates within the transportation study area from the EDSP. The most recent version of the ACTC countywide model uses land use assumptions from the Association of Bay Area Governments (ABAG) Plan Bay Area projections, which uses a 2013 base year, a 2025 interim year, and a 2040 long-range (cumulative) year. However, 2017 represents the existing year at the writing of the TIA. Interpolating the land use projections between the 2013 base year model and the interim 2025 model derived the 2017 scenario. Interpolating the land use to 2017 makes the land use consistent with the existing conditions counts collected in 2017. The TIA used the 2017, 2025, and 2040 conditions to conduct the Project's transportation analysis.

Existing Conditions (2017)

Land uses for 2017 are based on an interpolation of the land uses found in the 2013 model representing Plan Bay Area and the 2025 interim year model land uses described below. There are minimal land uses in the immediate study corridor, reflective of existing rural conditions.

2025 Conditions

Year 2025 represents the Project's projected opening year. Land uses for the 2025 modeling include Plan Bay Area up to 2025 for all regional areas. Dublin planned development for 2025 was confirmed with the Dublin and is consistent with Plan Bay Area. In addition, Phase 1 of the recently approved Kaiser Medical Center adjacent to Dublin Boulevard was assumed to be developed by 2025. Livermore assumptions were consistent with Livermore General Plan land uses for the Isabel Neighborhood area (phased to 2025 level) and Plan Bay Area elsewhere in Livermore. County land uses were consistent with Plan Bay Area for 2025 and assumed no growth in the immediate study area by 2025.

The 2025 No Project scenario estimates future traffic conditions for the Project's opening year (2025) without Project implementation, accounting for background traffic growth between 2017 and 2025 plus approved but not yet constructed changes to local land uses. This model also assumes no implementation of BART to Livermore Extension, thus providing a conservative traffic assumption with the highest amount of projected vehicle trips in the transportation study area. The 2025 Plus Project scenario adds the traffic circulation assumptions to the 2025 No Project traffic growth conditions.

2040 (Cumulative) Conditions

2040 represents the cumulative year for the Project. The following changes to the transportation network between existing (2017) and 2040 conditions were assumed implemented prior to the Project, based on planning documents and input from each jurisdiction:

- Widening of the Portola Avenue bridge over I-580 from one lane in each direction to two lanes in each direction.

- Tassajara Road and Dublin Boulevard improvements consistent with the Eastern Dublin Traffic Impact Fee (TIF).
- Fallon Road and Dublin Boulevard intersection improvements to be consistent with the EDSP.
- Fallon Road and I-580 Ramps Phase II interchange improvements, which will include three through lanes in the northbound and southbound directions.

The 2040 No Project scenario estimates future cumulative traffic conditions for the Project's design year (2040) without the Project, accounting for background traffic growth between existing conditions and 2040, plus approved but not yet constructed and occupied changes to local land uses. This model also assumes no implementation of BART to Livermore Extension, thus providing a conservative traffic assumption with the highest amount of projected vehicle trips in the transportation study area. The 2040 Plus Project scenario adds the traffic circulation assumptions to the 2040 No Project traffic growth conditions. A detailed discussion of 2040 land use assumptions is provided in **Chapter 4.0, Introduction to Environmental Analysis**, and in **Appendix D**.

Intersection Operations

Intersection Volumes and Lane Configurations

The TIA evaluated existing intersection operations for the highest one-hour volume during the weekday morning and evening peak periods. Intersection turn movement counts for the study intersections were collected for a typical weekday during the morning (AM) and evening (PM) peak periods. AM and PM peak-hour intersection turning movement counts were conducted on January 26, 2017 and February 14, 2017. A majority of the counts were obtained from recent nearby traffic impact studies. **Appendix D** includes the data collected during intersection turn movement counts. **Figure 5.14-2** depicts the existing AM and PM peak-hour turning movement volumes, lane configurations, and traffic control devices at the study intersections. **Figure 5.14-3** and **Figure5.14-4** depict the forecasted turning movement volumes, modeled lane configurations, and anticipated traffic control devices at study intersections in 2025 and 2040 without the Project.

Intersection Level of Service

Intersection turning movement volumes, lane configurations, and traffic control were used to calculate the levels of service at the study intersections for the AM and PM peak hours. **Table 5.14-2** shows the study intersection LOS results for Existing Conditions, 2025 No Project Conditions, and 2040 No Project Conditions, as summarized below:

- Existing Conditions - no intersections operate below the applicable LOS standard.
- 2025 No Project Conditions - no intersections would operate below the applicable LOS standard.

- 2040 No Project Conditions – The Airway Boulevard/North Canyons Parkway intersection would operate below the applicable LOS standard in the PM peak hour.

Queuing Analysis

Queuing analysis determines if intersection turn lane vehicle queues would affect traffic flow along the roadway segment leading to the turn lane. The 95th-percentile queue is the queue length (i.e. the length of a line of vehicles) that has only a 5 percent probability of exceeding the storage capacity of the turning lane during the analysis period. It is a useful parameter for determining the appropriate length of turn pockets and evaluating turn lane storage. An impact would be significant if the queue exceeds the storage capacity at the turn lane, causing vehicles to extend back into the through-lanes of the roadway segment. Field observations confirmed the extent of existing vehicle queues within the transportation study area. Queues within the transportation study area were contained within the available storage except at the following locations:

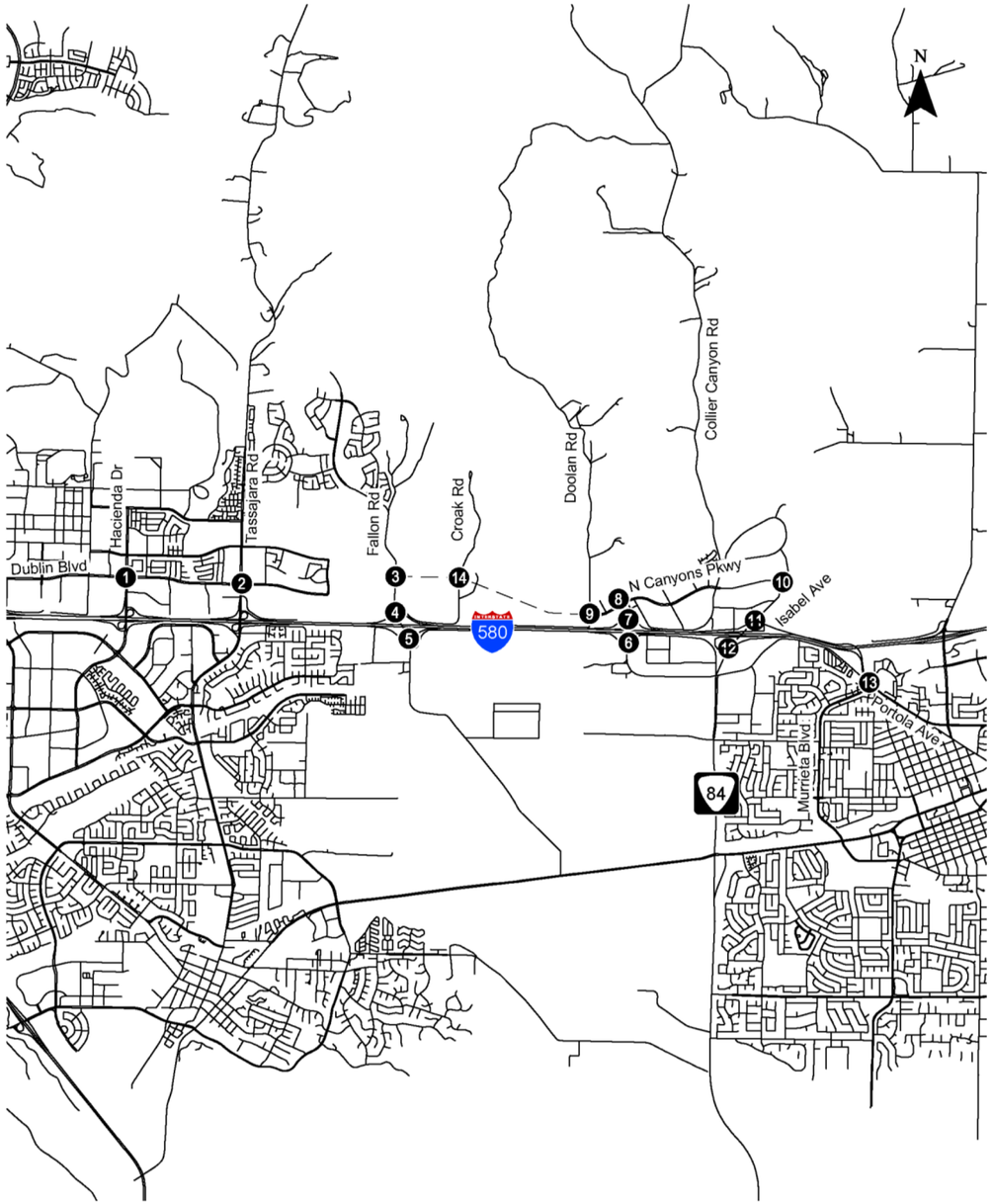
- Fallon Road and Dublin Boulevard – the estimated 95th percentile queue for the northbound left-turn is anticipated to exceed the available storage by about 39 feet or approximately two vehicles.

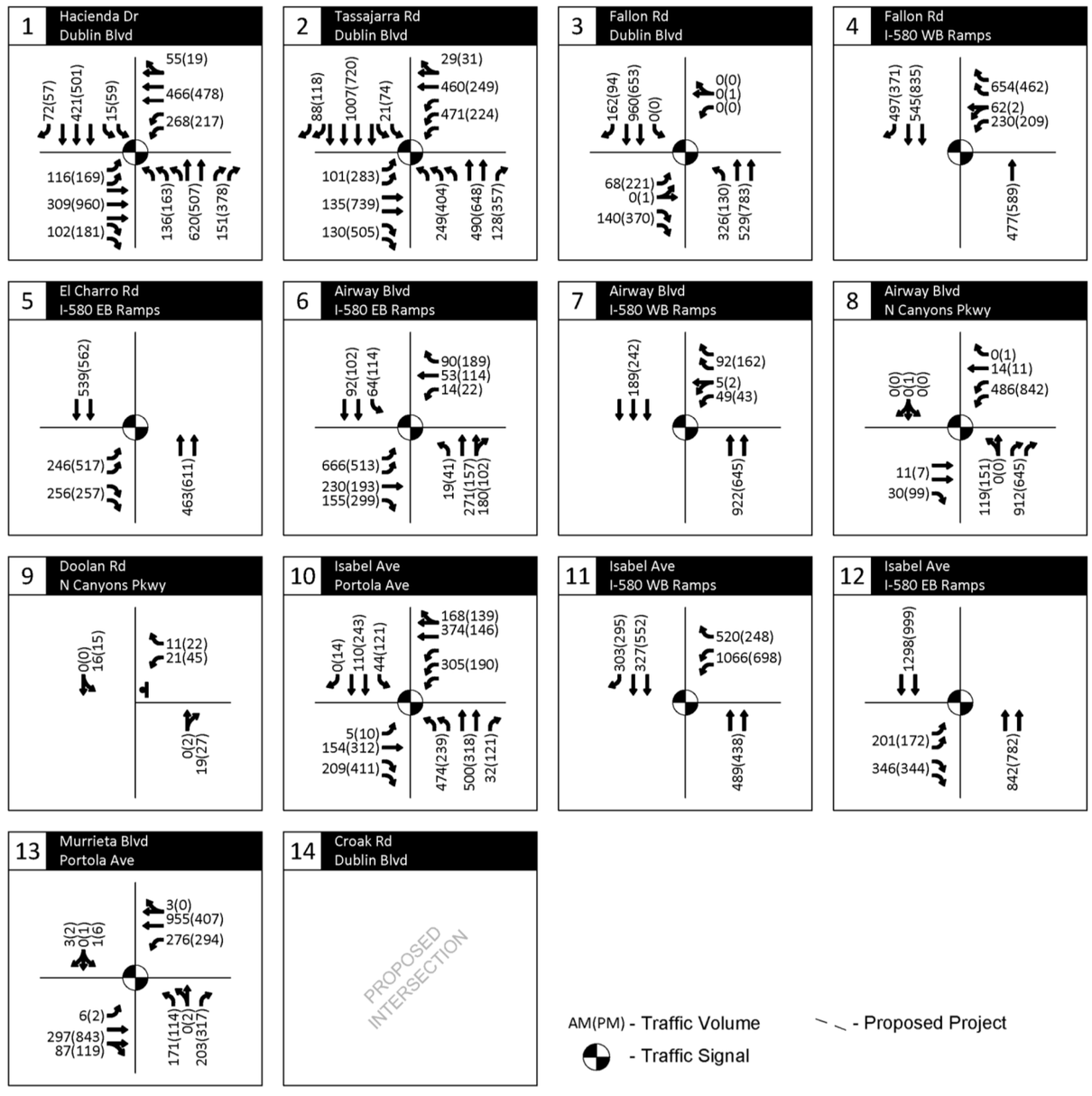
- Murrieta Boulevard and Portola Avenue – the 95th percentile queue for the eastbound through movement is expected to exceed the available storage between Murrieta Boulevard and East Airway Boulevard on Portola Avenue by 197 feet or about eight vehicles.

Table 5.14-2 Intersection Level of Service: Existing, 2025 No Project, 2040 No Project

ID#	Location	Hour	LOS Standard	Existing (2017)			2025 No Project			2040 No Project		
				V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
1	Hacienda Drive & Dublin Boulevard	AM	D	0.52	24.3	C	0.54	25.2	C	0.56	26.3	C
		PM	D	0.58	29.0	C	0.59	30.4	C	0.64	33.0	C
2	Tassajara Road & Dublin Boulevard	AM	D	0.58	28.7	C	0.60	29.0	C	0.55	28.1	C
		PM	D	0.68	32.5	C	0.72	37.7	D	0.55	31.9	C
3	Fallon Road & Dublin Boulevard	AM	D	0.65	34.4	C	0.66	10.0	A	0.48	21.9	C
		PM	D	0.49	20.4	C	0.62	28.1	C	0.70	37.1	D
4	Fallon Road & I-580 WB Ramps	AM	D	0.54	10.8	B	0.66	10.0	A	0.66	9.8	A
		PM	D	0.57	10.2	B	0.64	10.6	B	0.65	10.2	B
5	El Charro Road & I-580 EB Ramps	AM	D	0.37	5.6	A	0.41	6.2	A	0.63	10.0	A
		PM	D	0.49	6.8	A	0.59	8.1	A	0.65	8.9	A
6	Airway Boulevard & I-580 EB Ramps	AM	E	0.5	32.1	C	0.54	32.2	C	0.54	31.7	C
		PM	E	0.42	32.9	C	0.46	32.8	C	0.62	34.9	C
7	Airway Boulevard & I-580 WB Ramps	AM	E	0.37	5.7	A	0.39	5.3	A	0.43	5.4	A
		PM	E	0.25	9.4	A	0.28	9.3	A	0.37	12.7	B
8	Airway Boulevard & N. Canyons Parkway	AM	E	0.37	45.7	D	0.37	48.6	D	0.41	57.3	E
		PM	E	0.47	59.2	E	0.48	73.6	E	0.58	94.2	**F**
9	Doolan Road & N. Canyons Parkway	AM	Mid-D	0.03	8.8	A	0.03	8.7	A	0.03	8.8	A
		PM	Mid-D	0.06	9.0	A	0.06	9.0	A	0.06	9.0	A
10	Isabel Avenue & Portola Avenue	AM	E	0.68	29.4	C	0.77	37.9	D	0.79	37.7	D
		PM	E	0.51	25.7	C	0.47	25.2	C	0.55	30.4	C
11	Isabel Avenue & I-580 WB Ramps	AM	E	0.81	18.3	B	0.83	18.7	B	0.94	31.6	C
		PM	E	0.61	11.9	B	0.73	17.9	B	0.70	12.2	B
12	Isabel Avenue & I-580 EB Ramps	AM	E	0.72	16.2	B	0.83	21.7	C	0.85	27.2	C
		PM	E	0.60	11.7	B	0.75	16.4	B	0.61	12.5	B
13	Murrieta Boulevard & Portola Avenue	AM	Mid-D	0.53	23.0	C	0.53	23.1	C	0.64	25.1	C
		PM	Mid-D	0.58	30.2	C	0.58	30.7	C	0.92	51.2	D
14	Dublin Boulevard Extension & Croak Road[1]	AM	D	-	-	-	-	-	-	-	-	-
		PM	D	-	-	-	-	-	-	-	-	-

Source: Kittelson & Associates, Inc. 2018
LOS findings in ***BOLD*** represent intersections operating below the applicable LOS standard
[1]This intersection is a direct result of the Project, and would not exist under No Project scenarios.

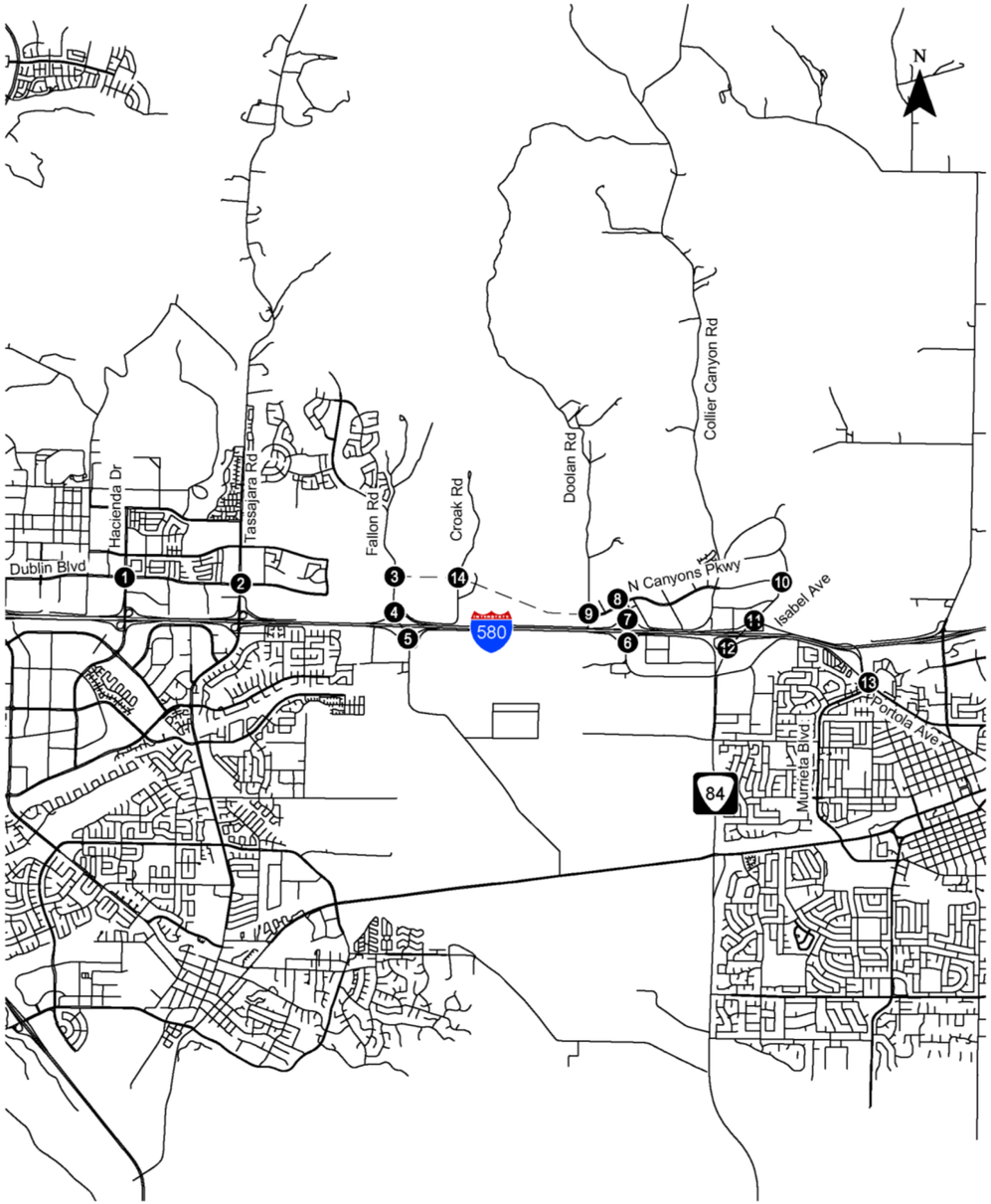


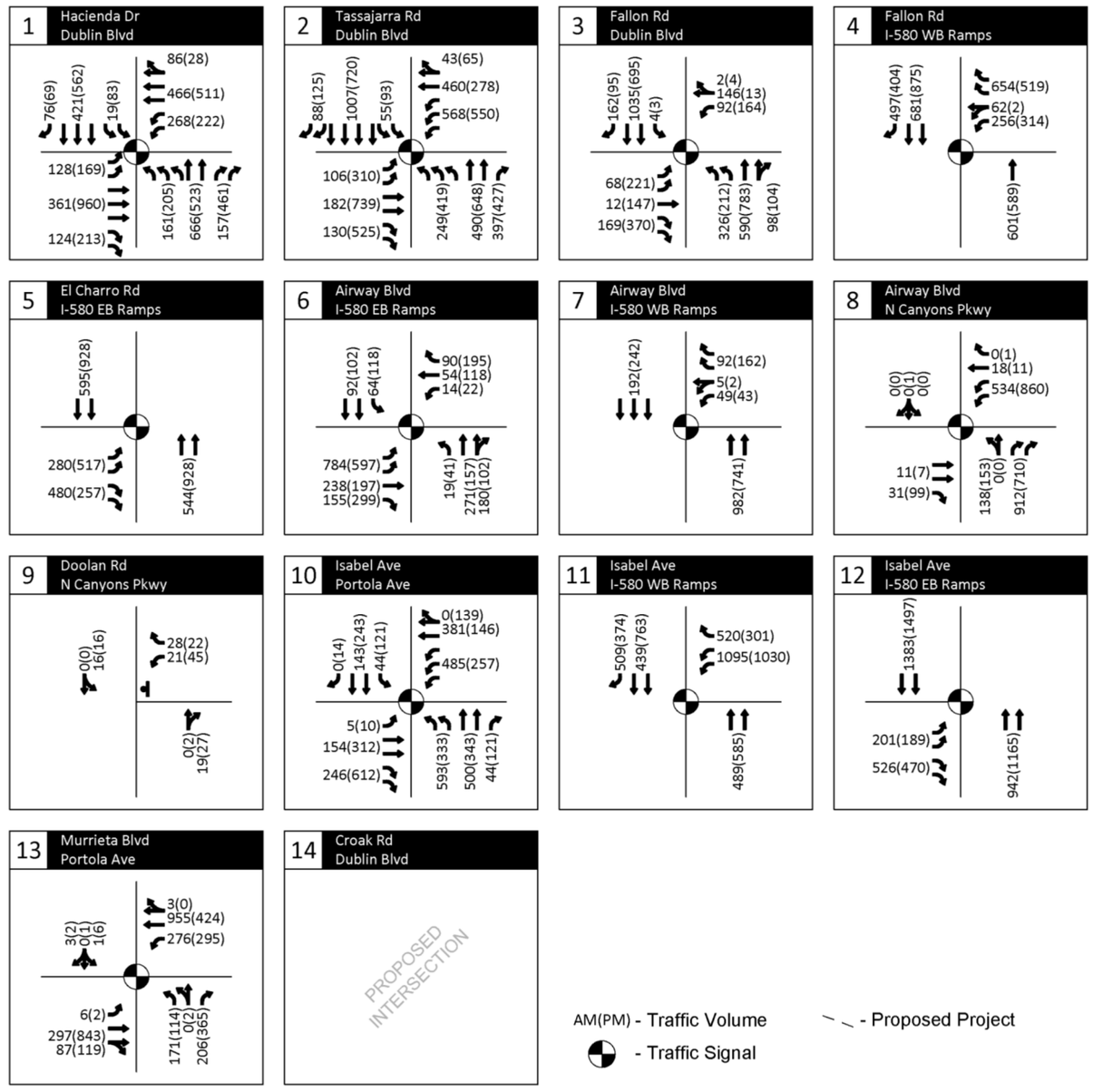


Existing Turn Volumes and Intersection Configurations (2017) Figure **5.14-2**

Source: Kittelson & Associates, 2018

*This Page Intentionally Left Blan*k

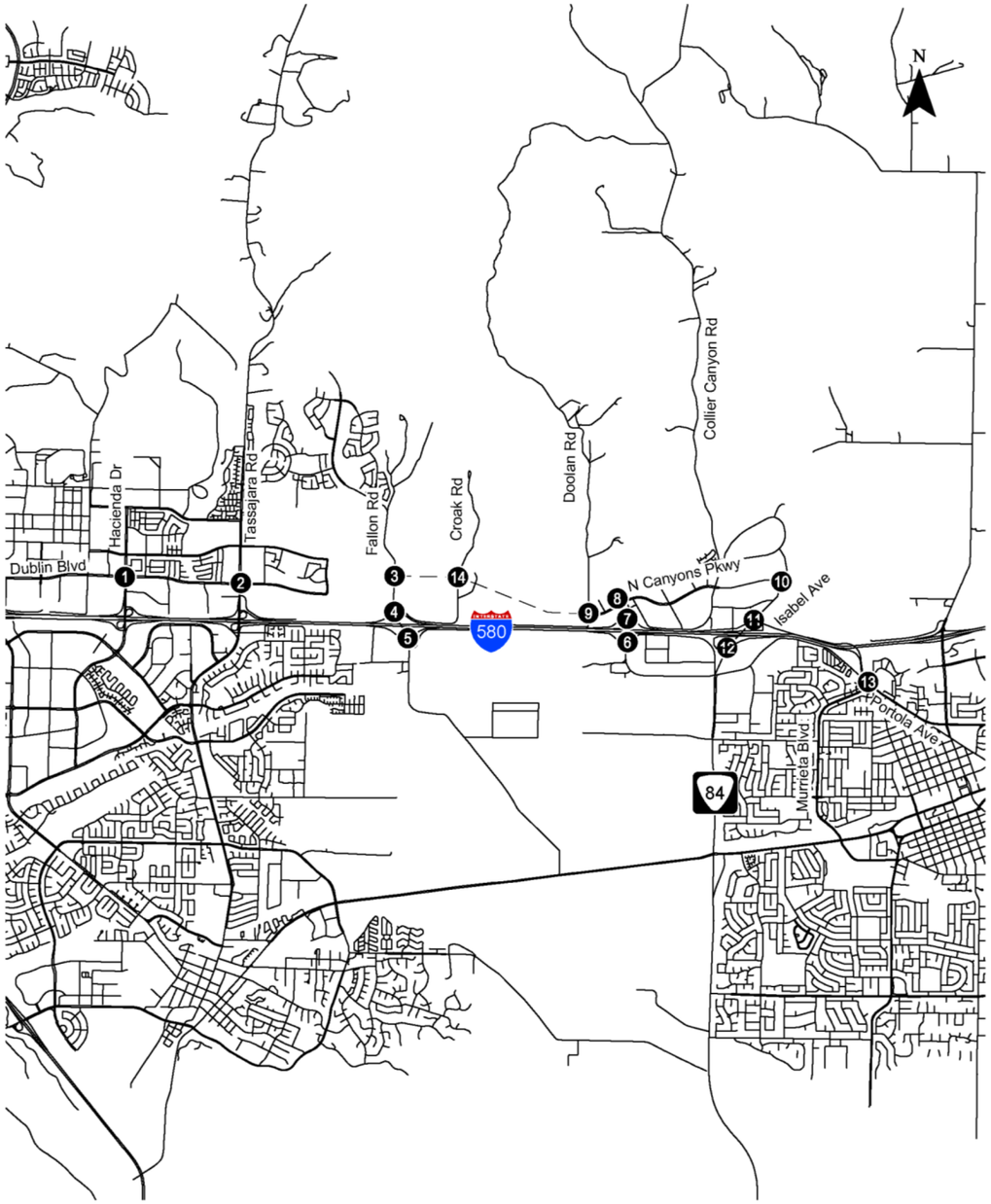


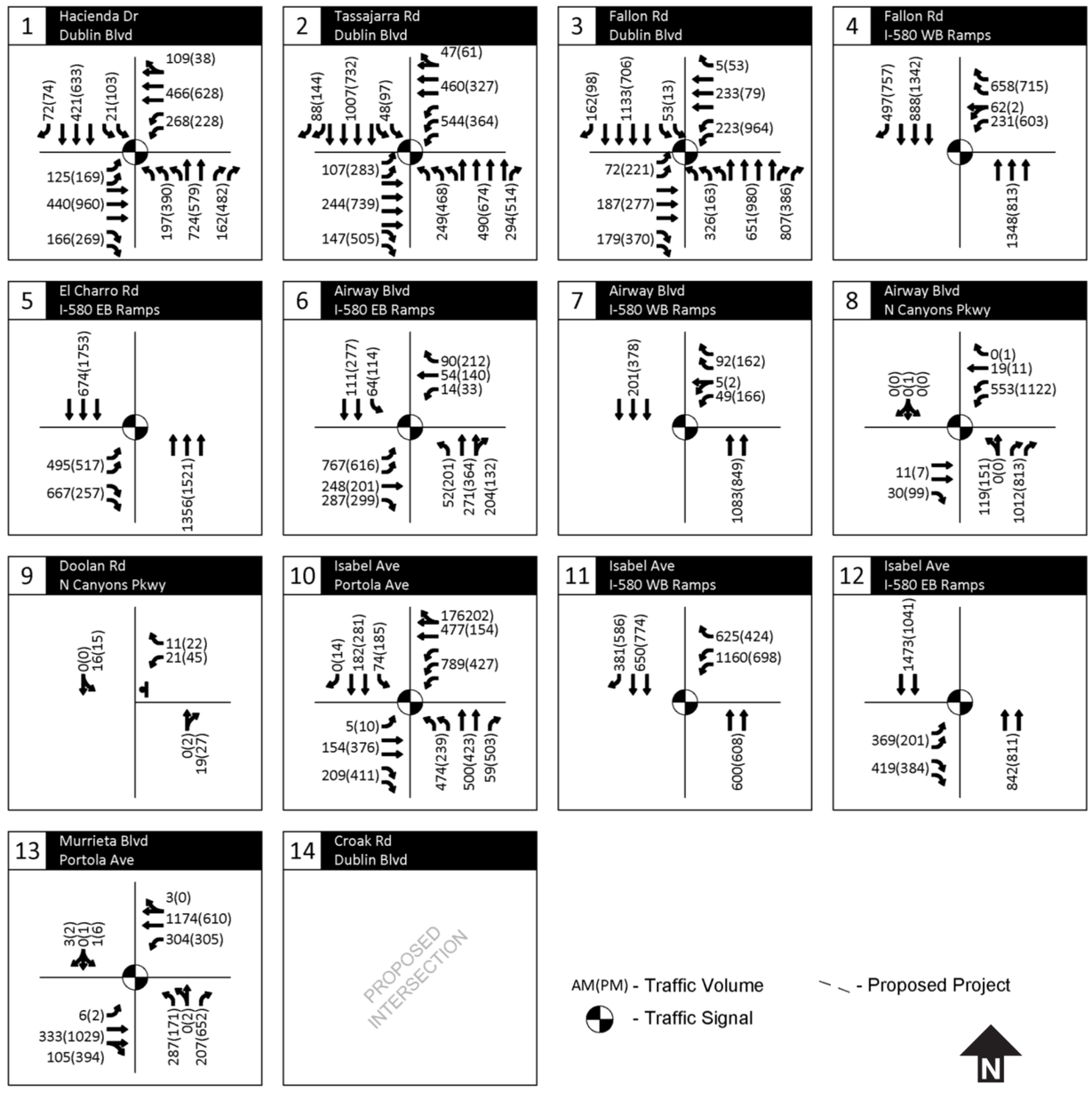


2025 Turn Volumes and Intersection Configurations Figure **5.14-3**

Source: Kittelson & Associates, 2018

This Page Intentionally Left Blank





2040 Turn Volumes and Intersection Configurations Figure **5.14-4**

Source: Kittelson & Associates, 2018

This Page Intentionally Left Blank

IMPACTS AND MITIGATION MEASURES

Significance Criteria

Determinations of significance for Project impacts are based on applicable policies, regulations, goals, and guidelines defined by Dublin, Pleasanton, Livermore, and Caltrans. The following criteria were used to identify significant off-site intersection impacts of the Project. The impact criteria used at each location depended on the location in which the facility resides.

Summary of Significance Criteria:

A. Result in unacceptable LOS conditions at signalized or unsignalized intersections

B. Result in an impact to vehicle queuing

C. Impede existing or planned transit services

D. Impede pedestrian circulation, access, or safety

E. Impede the circulation, access, or safety of bicyclists or bicycle facilities

City of Dublin

Impacts to intersections residing within Dublin would be significant if the Project would result in the following:

- If a signalized study intersection is projected to operate within motor vehicle delay ranges associated with LOS D or better (average control delay equal to or less than 55 seconds per vehicle) without the project and the project is expected to cause the facility to operate at a LOS E or F.
- If at a signalized study intersection where the motor vehicle level of service is E, the project would cause an increase in the average delay for any of the critical movements of 6 seconds or more.
- If at signalized study intersection where the motor vehicle level of service is LOS F, the project would cause (a) the overall volume-to-capacity (V/C) ratio to increase 0.03 or more or (b) the critical movement V/C ratio to increase 0.05 or more.
- If the operations of an unsignalized study intersection is projected to decline with the addition of project traffic, and if the installation of a traffic signal based on the Manual on Uniform Traffic Control Devices Peak Hour Signal Warrant (Warrant 3) would be warranted.

- A queuing impact would be identified if:
    - The project traffic causes the 95th percentile queue in a turn pocket to extend beyond the turn pocket by more than 25 feet (i.e., the length of one vehicle) into adjacent traffic lanes that operate separately from the turn lane; or
    - If the 95th percentile queue already exceeds that turn pocket length under no project conditions, the project traffic lengthens the queue by more than 25 feet.

City of Pleasanton

Impacts to intersections residing within Pleasanton were considered significant if the Project would result in the following:

- If the addition of project traffic results in the deterioration of a signalized intersection from LOS D (or better) to LOS E or LOS F. There are a few exceptions to the LOS standard that includes the Pleasanton Gateway intersections. Gateway intersections include all ramp terminal intersections on I-580. For the Gateway intersections, the LOS standard could be below LOS D when no reasonable mitigation exists, or the necessary mitigation is contrary to other goals and policies of Pleasanton.
- If at a signalized intersection projected to operate at LOS E or F prior to the addition of project traffic the project adds 10 or more peak hour trips.
- A queuing impact would be identified if:
    - The project traffic causes the 95th percentile queue in a turn pocket to extend beyond the turn pocket by more than 25 feet (i.e., the length of one vehicle) into adjacent traffic lanes that operate separately from the turn lane; or if the 95th percentile queue already exceeds that turn pocket length under no project conditions, the project traffic lengthens the queue by more than 25 feet.

City of Livermore

Impacts to intersections residing within Livermore were considered significant if the Project would result in the following:

- If a signalized intersection is projected to operate within vehicle delay ranges associated with a mid-level LOS D or better (average control delay equal to or less than or equal to 45 seconds per vehicle) without the project and the project is expected to increase the delay for intersections outside of the Downtown Area or near freeway interchanges.
- If a signalized intersection located in the Downtown Area or near freeway interchanges is projected to operate within vehicle delay ranges associated with a LOS E or better (average control delay equal to or less than or equal to 80 seconds per vehicle) without the project and the project is expected to cause the facility to operate at LOS F. For this project, the

following Livermore intersections have an LOS E standard while the other Livermore locations have the mid-level LOS D standard:

- Airway Boulevard and I-580 EB Ramps
- Airway Boulevard and I-580 WB Ramps
- Airway Boulevard and N. Canyons Parkway
- Isabel Avenue and Portola Avenue
- Isabel Avenue and I-580 WB Ramps
- Isabel Avenue and I-580 EB Ramps

- If a signalized intersection is operating below the LOS standard under the No Project Conditions, the project would increase the average vehicle delay by more than 5 seconds per vehicle.
- A queuing impact would be identified if:
  - The project traffic causes the 95th percentile queue in a turn pocket to extend beyond the turn pocket by more than 25 feet (i.e., the length of one vehicle) into adjacent traffic lanes that operate separately from the turn lane; or
  - If the 95th percentile queue already exceeds that turn pocket length under no project conditions, the project traffic lengthens the queue by more than 25 feet.

Caltrans

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway facilities.[5] However, Caltrans recognizes that achieving LOS C/LOS D may not always be feasible. Therefore, the ramp terminal intersections operated by Caltrans will be assessed for significant impacts based on the criteria for the city in which they reside. There are no significance criteria related to freeway mainline segment performance. Because the Project is the construction of an arterial roadway that provides a parallel route, the Project would either only maintain or improve freeway performance. Therefore, in coordination with Caltrans it was determined that freeway mainline segments would not be studied.

Summary of Significance Criteria:

Transit

The primary policy goals of the transit agencies in the study area emphasize increasing ridership, improving access to BART, and reducing system inefficiencies. A significant impact would result if the Project were to directly impede any of the relevant transit agencies from implementing planned

[5] Caltrans. 2002. Guide for the Preparation of Traffic Studies.

improvements and/or their ability to meet these goals. Therefore, a significant impact would occur if the Project:

- Impeded connecting transit services from increasing ridership
- Impeded connecting transit services from improving their access to BART
- Impeded connecting transit services from reducing system inefficiencies

Bicyclists

There are no established qualitative criteria for the assessment of bicycle impacts. For this transportation analysis, an impact on bicycles would occur if the Project substantially impedes bicycle circulation, access, and safety or conflicts with a bicycle plan.

Pedestrians

There are no established qualitative criteria for the assessment of pedestrian impacts. For this transportation analysis, an impact on pedestrians would occur if the Project substantially impedes pedestrian circulation, access, and safety or conflicts with a pedestrian plan.

Impact Analysis

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. Result in unacceptable LOS conditions at signalized or unsignalized intersections

Construction

Impact TRAF-1.1: Project construction would result in a temporary increase in construction truck trips on local streets designated as truck routes and construction vehicle trips to and from the Project site. Project construction could require temporary closure of the Dublin Boulevard/Fallon Road intersection and the Doolan Road/North Canyons Parkway intersection, and temporary closure of Croak Road while a new intersection is constructed, necessitating detours. Construction truck, equipment, and vehicle trips, and intersection closures and detours could result in temporary congestion at local intersections in Dublin and Livermore. **(Less than Significant with Mitigation)**

Project construction would require construction vehicles and equipment to travel to and from the Project site using local roadways and highways. Additionally, Project construction would require the removal of up to 100,000 cubic yards of excavated soil. Soil would be removed using dump truck-style vehicles, which would travel along designated local truck routes in Dublin and Livermore before reaching I-580. Local truck routes are shown on **Figure 3-12** and **Figure 3-13**. These additional trips on the local roadway system could temporarily increase congestion at local intersections.

During construction of the Project, temporary closures may be required at the Dublin Boulevard/Fallon Road and Doolan Road/North Canyons Parkway intersections, along with the new Dublin Boulevard/Croak Road intersection. Given that Fallon Road and Doolan Road are both well-traveled local roadways that provide important north-south access in Dublin, Pleasanton, and Livermore, temporary intersection closure could result in congestion at these intersections or others in the local vicinity, as drivers divert onto other roadways to complete their trip. Similarly, Croak Road is an important local roadway used to access residential development north of the Project site. This could also present an issue for emergency vehicles and local delivery trucks.

Construction-period intersection congestion represents a potentially significant impact. **Mitigation Measure TRAF-1** requires preparation of a traffic management plan (TMP) that would be coordinated between all three jurisdictions (Dublin, the County, and Livermore) and Caltrans, as construction and detour traffic may require use of I-580. The TMP would delineate appropriate traffic management during construction to minimize intersection congestion, detour routes, notification plans for the public and emergency service providers, and the continuation of existing pedestrian and bicycle access at detour locations where it would be feasible and safe to do so. With implementation of this mitigation measure, temporary congestion at local intersections would be reduced and the impact would be less than significant.

Mitigation for Impact TRAF-1.1

> **Mitigation Measure TRAF-1:** A TMP shall be prepared during the design phase for the Project, in accordance with all local requirements. The TMP should address traffic impacts from staged construction, detours, and specific traffic handling concerns during construction of the Project, including multi-modal access. The objective of the TMP is to minimize the impacts that construction activities would have on the traveling public. Traffic management strategies that require action by the construction contractor should be presented in detail in the technical specifications of the bid contract, and should be considered part of the Project.
>
> In implementing the TMP, each jurisdiction should produce and disseminate press releases and other documents, as necessary, to adequately notify and inform motorists, pedestrians and cyclists, business community groups, local entities, emergency services, and elected officials of upcoming road closures and detours. This responsibility includes advance notification to local newspapers, television and radio stations, and emergency response providers. If agreed upon by Dublin, the County, and Livermore, Dublin as the lead agency may lead preparation and implementation of the TMP.

Existing Plus Project (2017)

Existing Plus Project conditions were analyzed to provide an estimation of transportation conditions if the Project were opened at the time of the existing counts (2017). Levels of service calculations were conducted to evaluate intersection operations under existing conditions with the addition of the Project. **Figure 5.14-5** shows the estimated Existing Plus Project traffic volumes and lane configurations without mitigation. The lane configurations depicted in this scenario show the

existing condition plus the Project for each intersection before mitigation has been incorporated. As shown in **Table 5.14-6**, the findings of the analysis indicate that the following intersections would degrade below the LOS standard for the intersection as a result of the Project:

- Fallon Road & Dublin Boulevard (#3)
- Airway Boulevard & N. Canyons Parkway (#8)

Table 5.14-3 Existing Plus Project Intersection Level of Service

ID#	Location	Hour	LOS Standard	Existing Plus Project		
				V/C	Delay	LOS
1	Hacienda Drive & Dublin Boulevard	AM	D	0.59	26.0	C
		PM	D	0.60	29.6	C
2	Tassajara Road & Dublin Boulevard	AM	D	0.67	33.1	C
		PM	D	0.72	34.1	C
3	Fallon Road & Dublin Boulevard	AM	D	***1.49***	***261.5***	***F***
		PM	D	0.74	33.5	C
4	Fallon Road & I-580 WB Ramps	AM	D	0.42	7.3	A
		PM	D	0.63	11.8	B
5	El Charro Road & I-580 EB Ramps	AM	D	0.37	5.6	A
		PM	D	0.50	7.0	A
6	Airway Boulevard & I-580 EB Ramps	AM	E	0.63	34.1	C
		PM	E	0.37	32.8	C
7	Airway Boulevard & I-580 WB Ramps	AM	E	0.64	19.0	B
		PM	E	0.17	9.8	A
8	Airway Boulevard & N. Canyons Parkway	AM	E	***1.01***	***88.9***	***F***
		PM	E	0.68	35.7	D
9	Doolan Road & N. Canyons Parkway	AM	Mid-D	0.48	12.5	B
		PM	Mid-D	0.34	14.9	B
10	Isabel Avenue & Portola Avenue	AM	E	0.73	29.5	C
		PM	E	0.47	24.7	C
11	Isabel Avenue & I-580 WB Ramps	AM	E	0.88	18.3	B
		PM	E	0.61	11.9	B
12	Isabel Avenue & I-580 EB Ramps	AM	E	0.71	16.2	B
		PM	E	0.59	11.2	B
13	Murrieta Boulevard & Portola Avenue	AM	Mid-D	0.57	21.8	C
		PM	Mid-D	0.63	29.9	C
14	Dublin Boulevard Extension & Croak Road[1]	AM	D	0.52	11.4	B
		PM	D	0.37	7.1	A

Source: Kittelson & Associates, Inc. 2018
LOS findings in ***BOLD*** represent intersections operating below the applicable LOS standard
[1]This intersection is a direct result of the Project, and would not exist under No Project scenarios.

Impact TRAF-1.2: The change in travel patterns resulting from the Project would result in unacceptable operations at the intersection of Fallon Road and Dublin Boulevard during the AM peak hour over existing conditions. **(Less than Significant with Mitigation)**

With implementation of the Project, this intersection would experience vehicles coming from and going to the new eastern leg of the intersection. The existing lane configurations do not provide enough capacity to handle the increased demand coming from the new westbound approach. The Project would cause the intersection to degrade from LOS C to LOS F in the AM peak hour as a result of increases in the number of vehicles using the new eastern leg of the intersection to access the Project. This is a potentially significant impact. Implementation of **Mitigation Measure TRAF-2** would improve the operation of this intersection to LOS D during the AM peak hour, reducing this impact to less than significant.

Mitigation for Impact TRAF-1.2

Mitigation Measure TRAF-2: Dublin is to implement the following geometric and signal timing improvements at the intersection of Dublin Boulevard/Fallon Road prior to the opening of the Dublin Boulevard Extension:

- Implement the mitigation measures described in the Kaiser Environmental Impact Report (EIR) which includes the construction of an additional left turn lane for both the northbound and eastbound approaches. This improvement is the obligation of Kaiser and the City shall build and seek reimbursement from Kaiser if not built by the time the Dublin Boulevard – North Canyons Parkway Extension Project is built.

- In addition to the mitigations proposed for the Kaiser EIR, Dublin shall implement the following improvements:

    - Northbound – construct at least one northbound right turn lane resulting in the following final lane configuration: 2 left turns, 2 through, and one right turn lane

    - Eastbound – construct at least one more through lane resulting in the following final lane configuration: 2 left turns, 2 through, and 2 rights

    - Westbound – construct at least two additional through lanes resulting in the following lane configuration: 1 left turn, 2 through, and a shared through/right

    - Optimize the signal timing

Impact TRAF-1.3: The change in travel patterns resulting from the Project would result in unacceptable operations at the intersection of Airway Boulevard and North Canyons Parkway in Livermore during the AM peak hour over existing conditions. **(Significant and Unavoidable Impact)**

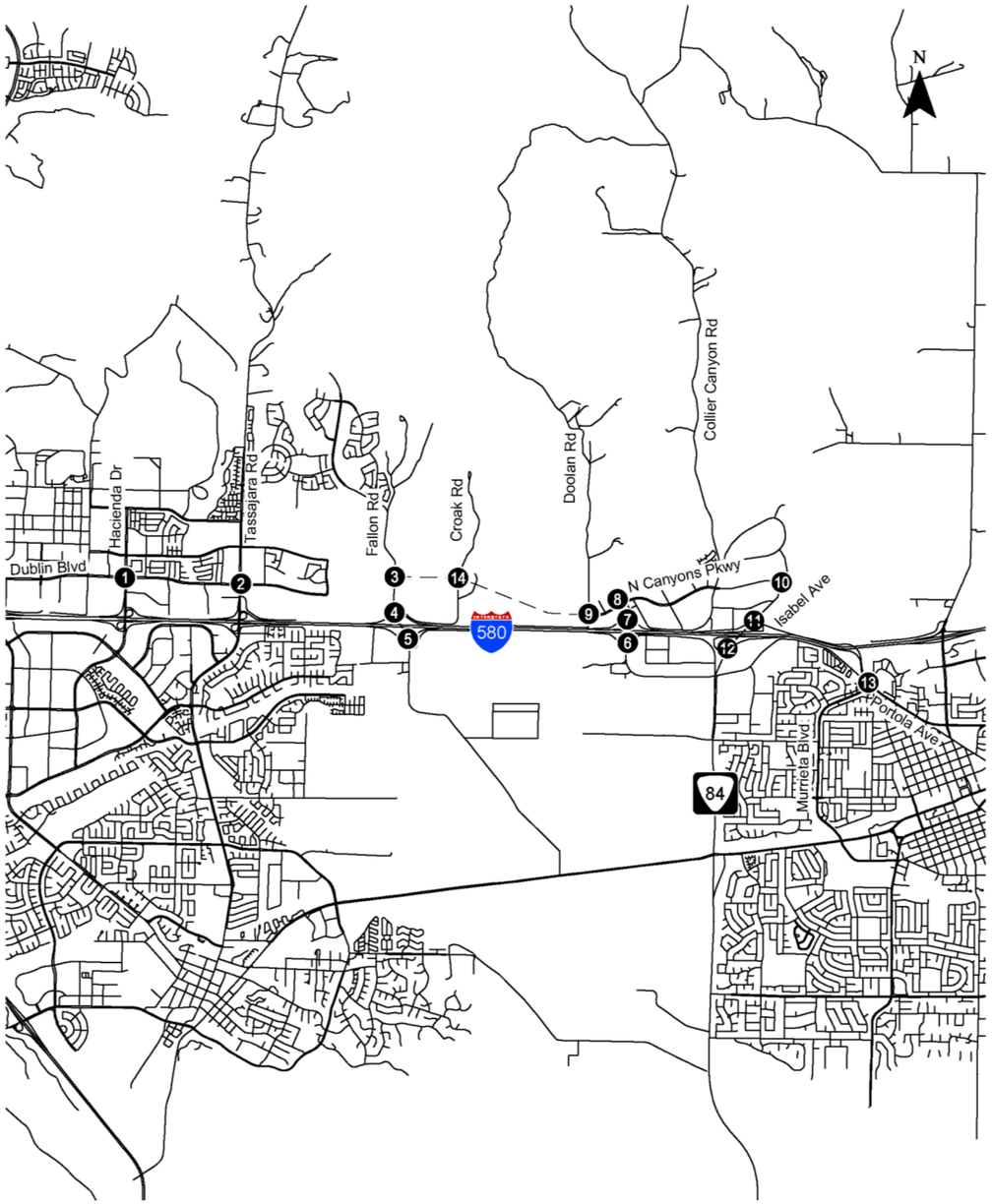
With implementation of the Project, this intersection would experience significant growth to the northbound left turn with the demand exceeding 800 vehicles per hour during the AM peak hour. The existing lane configuration of a single shared left and through lane for the northbound approach is insufficient to handle this demand. The Project would cause the LOS at this intersection to degrade from LOS D to LOS F in the AM peak hour due to an increase in northbound left turn traffic volumes. An intersection operation of LOS F would be below the LOS E standard for this intersection. This is a potentially significant impact.

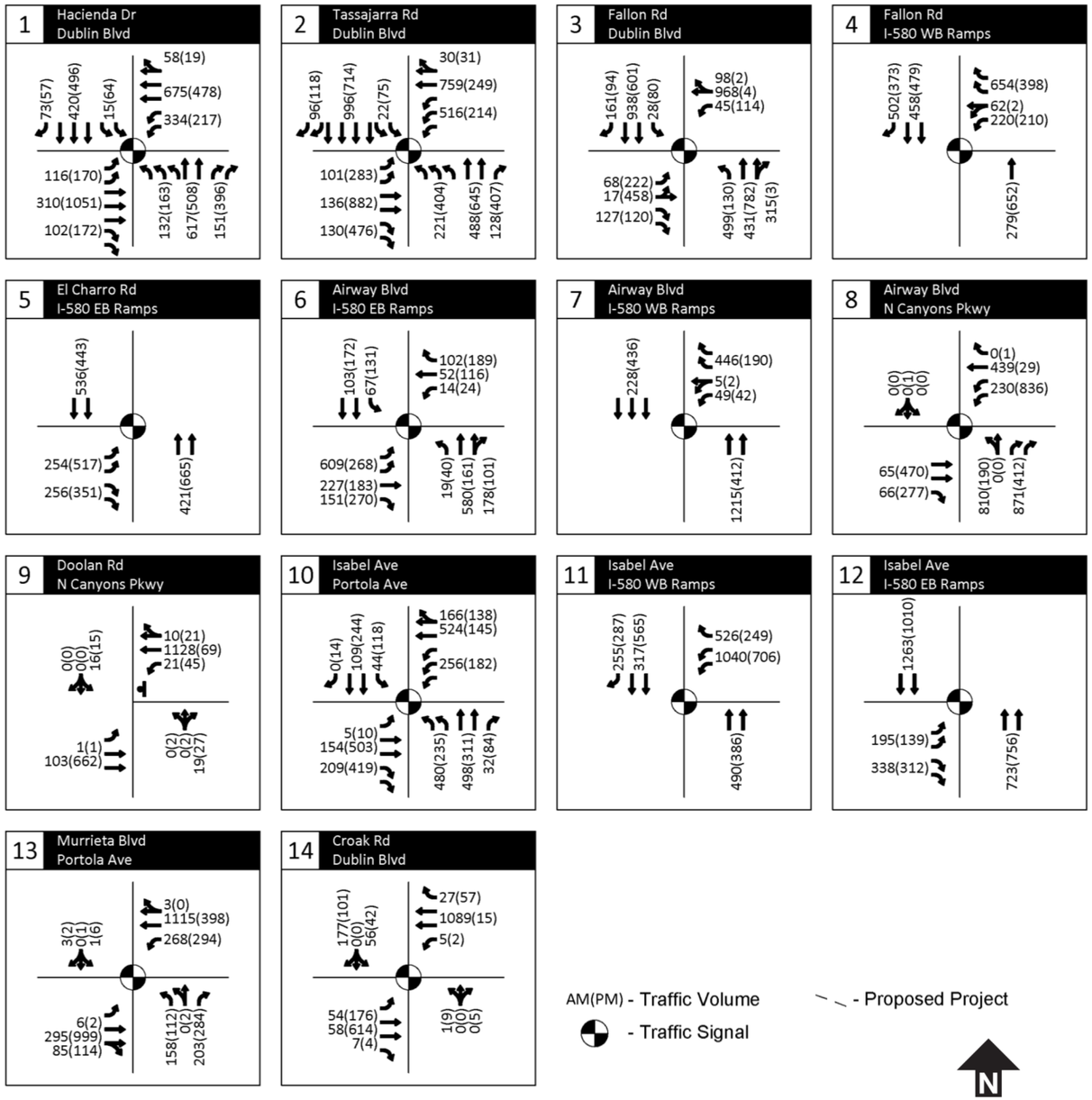
Implementation of **Mitigation Measure TRAF-3** would improve the operation of this intersection to LOS D during the AM peak hour. However, because the intersection is in Livermore, outside of Dublin's jurisdiction Dublin as the lead agency cannot guarantee the implementation and timing of the mitigation measure. Therefore, this impact would remain **significant and unavoidable**. Dublin, the County, and Livermore are coordinating on the Project to meet their General Plan's objectives including the planned extension of Dublin Boulevard. Dublin and Livermore currently have a funding Memorandum of Understanding (MOU) and are exploring a new cooperative agreement with Alameda County and the Alameda CTC to continue to work together to identify the funding and timing for this mitigation.

Mitigation for Impact TRAF-1.3

Mitigation Measure TRAF-3: The City of Livermore is to implement the following geometric and signal timing improvements at the intersection of Airway Boulevard and North Canyons Parkway prior to Project completion:

- Shift the median of Airway Boulevard one lane to the west reducing the southbound lanes from three to two and increasing the northbound lanes from three to four
- With the extra northbound lane, convert the northbound approach to Airway Boulevard and North Canyons Parkway to have an exclusive left, shared left/through, and two right turn lanes
- Add an additional westbound through lane resulting in two left turns, one exclusive through, and a shared through/right
- Optimize the signal timing





Existing Plus Project (2017) Turn Volumes and Intersection Configurations Figure **5.14-5**

Source: Kittelson & Associates, 2018

This Page Intentionally Left Blank

2025 Conditions

2025 Plus Project conditions were analyzed to provide an estimation of anticipated conditions when the Project is operational (projected opening day). One local transportation network alteration is anticipated to occur between existing and 2025 conditions: construction of a second eastbound and a second northbound left turn lane at the intersection of Dublin Boulevard and Fallon Road, consistent with the improvements being implemented as a part of the Kaiser project. This improvement was also assumed to result in optimization of the signal timing plans to accommodate the new lanes. **Figure 5.14-6** shows the estimated 2025 Plus Project traffic volumes and lane configurations without mitigation. The lane configurations depicted in this scenario show the existing condition plus the Project for each intersection before mitigation has been incorporated. As shown in **Table 5.14-7**, two intersections would degrade below the applicable LOS standard under 2025 Plus Project conditions:

- Fallon Road and Dublin Boulevard (#3)
- Airway Boulevard and North Canyons Parkway (#8)

Table 5.14-4 2025 Plus Project Intersection Level of Service

ID#	Location	Hour	LOS Standard	2025 Plus Project		
				V/C	Delay	LOS
1	Hacienda Drive & Dublin Boulevard	AM	D	0.61	27.0	C
		PM	D	0.62	31.1	C
2	Tassajara Road & Dublin Boulevard	AM	D	0.68	33.3	C
		PM	D	0.76	39.7	D
3	Fallon Road & Dublin Boulevard	AM	D	***1.43***	***241.8***	***F***
		PM	D	***0.92***	***58.0***	***E***
4	Fallon Road & I-580 WB Ramps	AM	D	0.51	8.2	A
		PM	D	0.67	12.4	B
5	El Charro Road & I-580 EB Ramps	AM	D	0.41	6.2	A
		PM	D	0.59	8.1	A
6	Airway Boulevard & I-580 EB Ramps	AM	E	0.67	36.1	D
		PM	E	0.39	32.8	C
7	Airway Boulevard & I-580 WB Ramps	AM	E	0.67	19.1	B
		PM	E	0.20	9.2	A
8	Airway Boulevard & N. Canyons Parkway	AM	E	***1.03***	***93.8***	***F***
		PM	E	0.69	38.0	D
9	Doolan Road & N. Canyons Parkway	AM	Mid-D	0.49	12.4	B
		PM	Mid-D	0.34	14.9	B
10	Isabel Avenue & Portola Avenue	AM	E	0.81	38.1	D
		PM	E	0.53	26.1	C
11	Isabel Avenue & I-580 WB Ramps	AM	E	0.82	18.6	B

ID#	Location	Hour	LOS Standard	2025 Plus Project		
				V/C	Delay	LOS
		PM	E	0.74	17.5	B
12	Isabel Avenue & I-580 EB Ramps	AM	E	0.81	21.2	C
		PM	E	0.75	15.3	B
13	Murrieta Boulevard & Portola Avenue	AM	Mid-D	0.57	21.9	C
		PM	Mid-D	0.63	30.3	C
14	Dublin Boulevard Extension & Croak Road[1]	AM	D	0.57	12.2	B
		PM	D	0.39	7.8	A

Source: Kittelson & Associates, Inc. 2018
LOS findings in ***BOLD*** represent intersections operating below the applicable LOS standard
[1]This intersection is a direct result of the Project, and would not exist under No Project scenarios.

Impact TRAF-1.4: The change in travel patterns resulting from the Project would result in unacceptable operations at the intersection of Fallon Road and Dublin Boulevard during both the AM and PM peak hours under 2025 conditions. **(Less than Significant with Mitigation)**

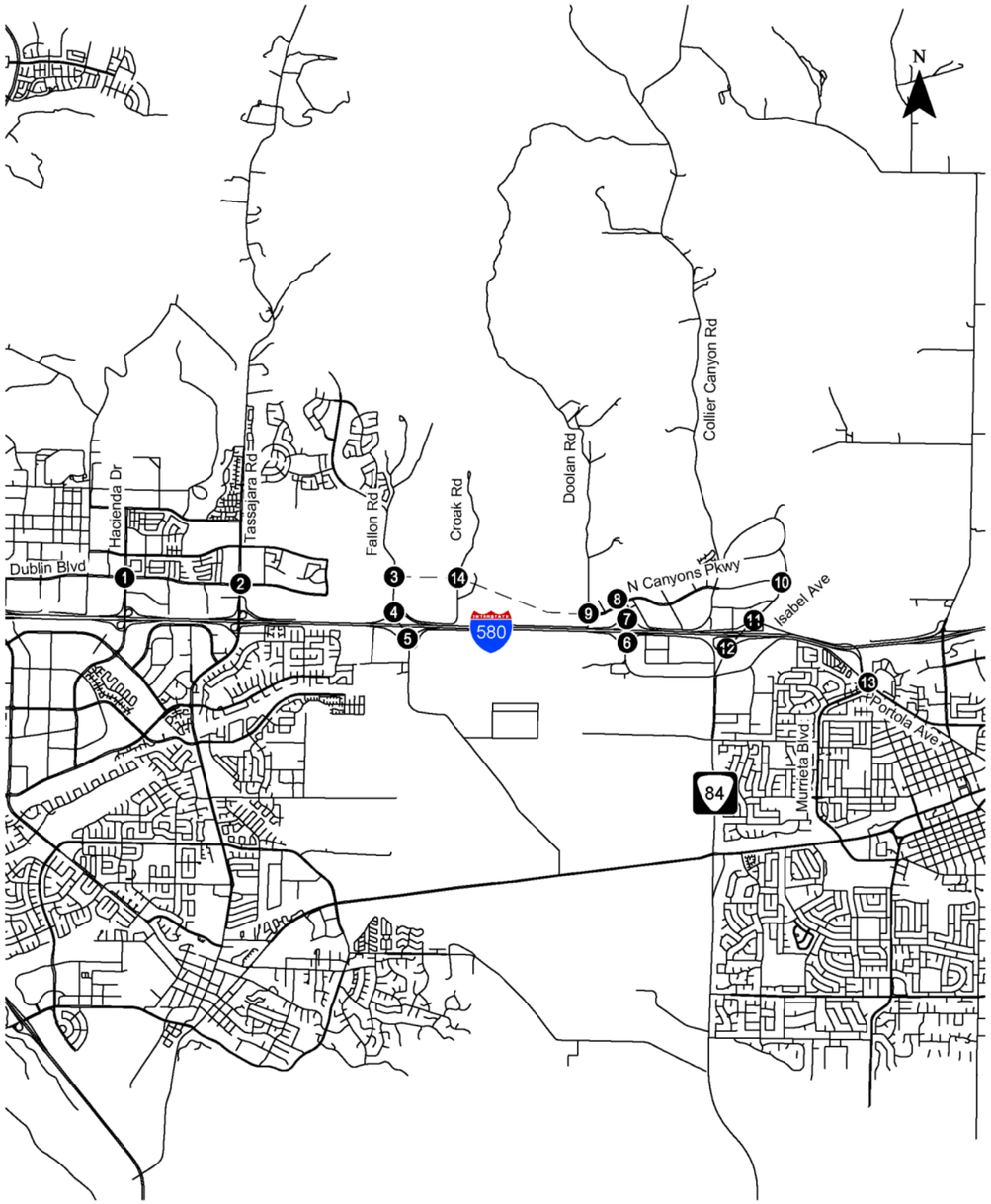
With implementation of the Project, this intersection would experience vehicles coming from and going to the new eastern leg of the intersection. The existing lane configurations do not provide enough capacity to handle the increased demand. The Project would cause the intersection to degrade from LOS C to LOS F in the AM peak hour and LOS C to LOS E in the PM peak hour. This is a potentially significant impact. Implementation of **Mitigation Measure TRAF-2** would improve the operation of this intersection to LOS D during both the AM and PM peak hours. Implementation of **Mitigation Measure TRAF-2** would reduce **Impact TRAF-1.3** to less than significant.

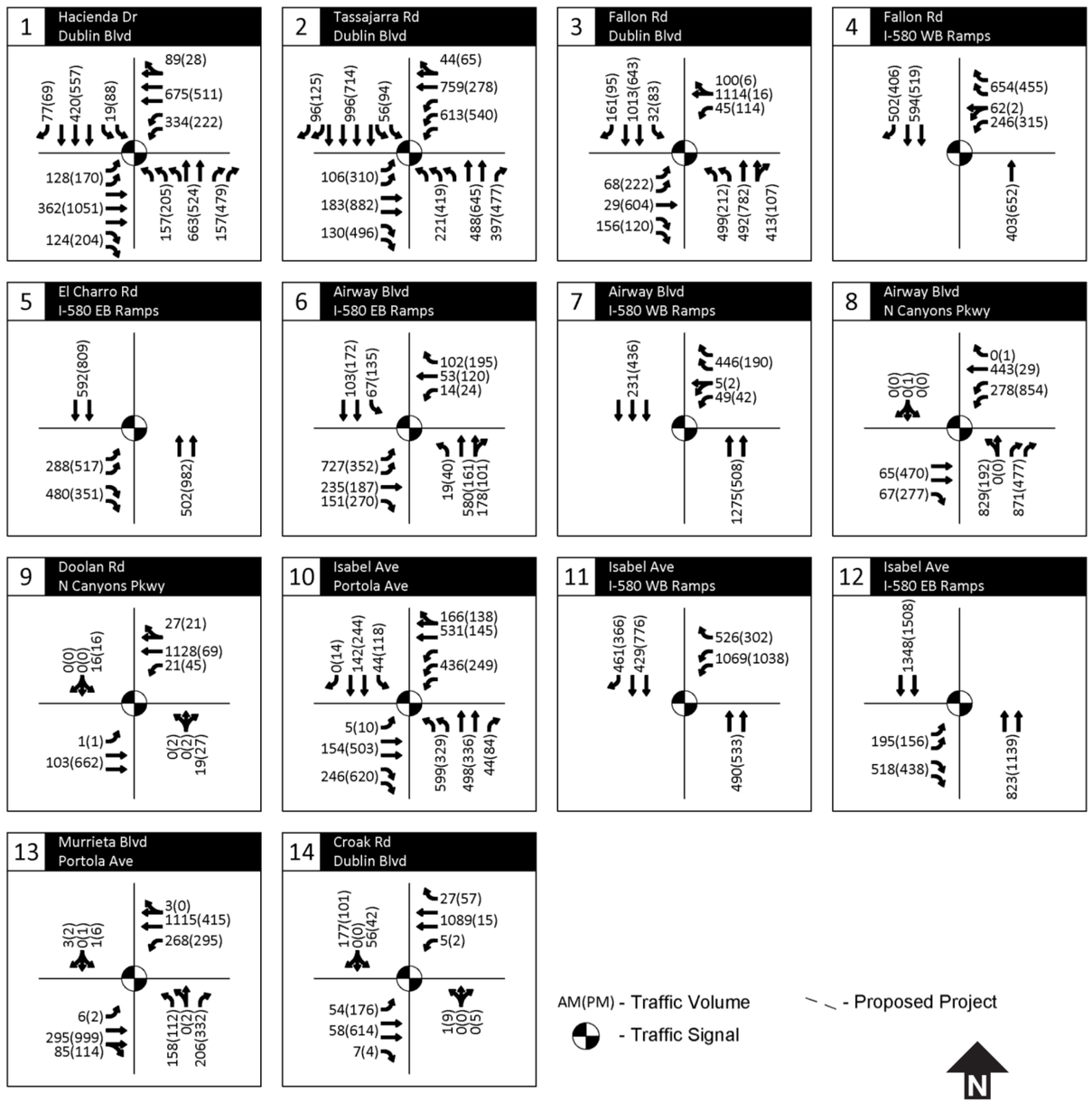
Mitigation for Impact TRAF-1.4

Mitigation Measure TRAF-2 (described above)

Impact TRAF-1.5: The change in travel patterns resulting from the Project would result in unacceptable operations at the intersection of Airway Boulevard and North Canyons Parkway during the AM peak hour under 2025 conditions. **(Significant and Unavoidable Impact)**

With implementation of the Project, this intersection would experience significant growth in the northbound left turn, with the demand exceeding 800 vehicles per hour during the AM peak hour. The existing lane configuration of a single shared lane for both left and through movements for the northbound approach is insufficient to handle this demand. The Project would cause the LOS to degrade from LOS D to LOS F in the AM peak hour, which is below the LOS E standard for this intersection. This is a potentially significant impact. Implementation of **Mitigation Measure TRAF-3** would improve the operation of this intersection to LOS D during the AM peak hour. However, as described under **Impact TRAF-1.3** above, Dublin as the lead agency cannot guarantee the implementation and timing of the mitigation measure, as it is outside the control and jurisdiction of the City. Therefore, this impact remains **significant and unavoidable**.





2025 Plus Project Turn Volumes and Intersection Configurations Figure **5.14-6**

Source: Kittelson & Associates, 2018

This Page Intentionally Left Blank

Mitigation for Impact TRAF-1.5

Mitigation Measure TRAF-3 (described above)

2040 (Cumulative) Conditions

Cumulative conditions were analyzed to provide an estimation of anticipated conditions for the Project's design year of 2040. **Figure 5.14-7** shows the estimated 2040 Plus Project (Cumulative) traffic volumes and lane configurations without mitigation. The lane configurations depicted in this scenario show the existing condition plus the Project for each intersection before mitigation has been incorporated. As shown in **Table 5.14-8**, the following intersection would degrade below the LOS standard for the intersection for 2040 Plus Project (Cumulative) conditions:

- Airway Boulevard and North Canyons Parkway (#8)

Impact TRAF-1.6: The change in travel patterns resulting from the Project would result in unacceptable operations at the intersection of Airway Boulevard and North Canyons Parkway during the AM and PM peak hours under 2040 (cumulative) conditions. **(Significant and Unavoidable Impact)**

With implementation of the Project, this intersection would experience significant growth to the northbound left turn and westbound through movements in the cumulative scenario. The existing lane configuration of a single shared lane for both left and through movements for the northbound approach is insufficient to handle this demand. The Project would cause the LOS to degrade from LOS E to LOS F in the AM peak hour, which is below the LOS E standard for this intersection. The PM peak hour is also impacted with the Project causing the delay for this intersection already operating at a substandard LOS to increase the average vehicle delay by 5 seconds or more. This is a potentially significant impact.

Impact TRAF-1.6 would be reduced to a less-than-significant level through the implementation of **Mitigation Measure TRAF-3,** described above. Implementation of **Mitigation Measure TRAF-3** would improve the operation of this intersection to LOS C during the AM peak hour and LOS D during the PM peak hour. However, as described under **Impact TRAF-1.3** above, Dublin as the lead agency cannot guarantee the implementation and timing of the mitigation measure, as it is outside the control and jurisdiction of the City. Therefore, this impact remains **significant and unavoidable**.

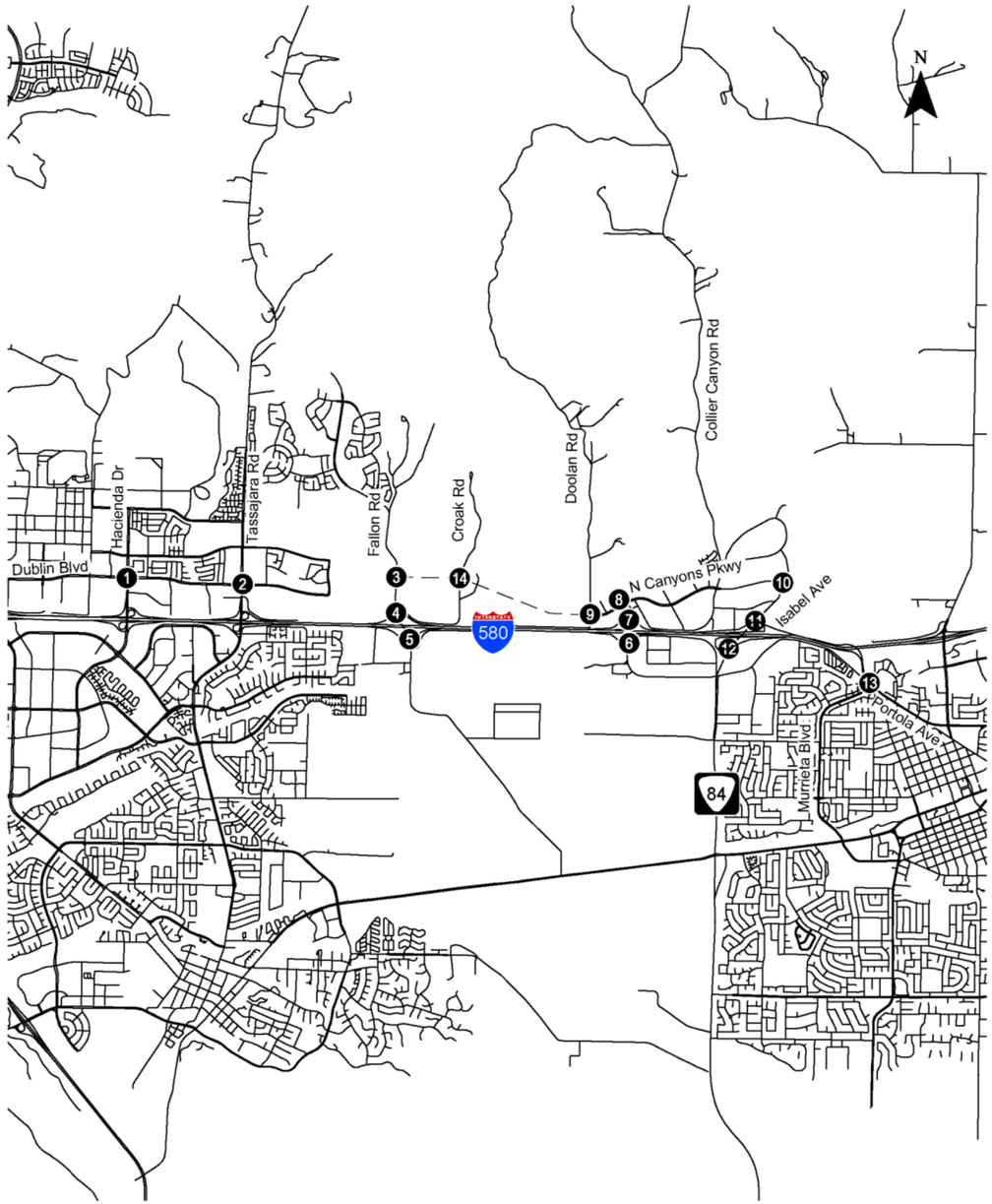
Mitigation for Impact TRAF-1.6

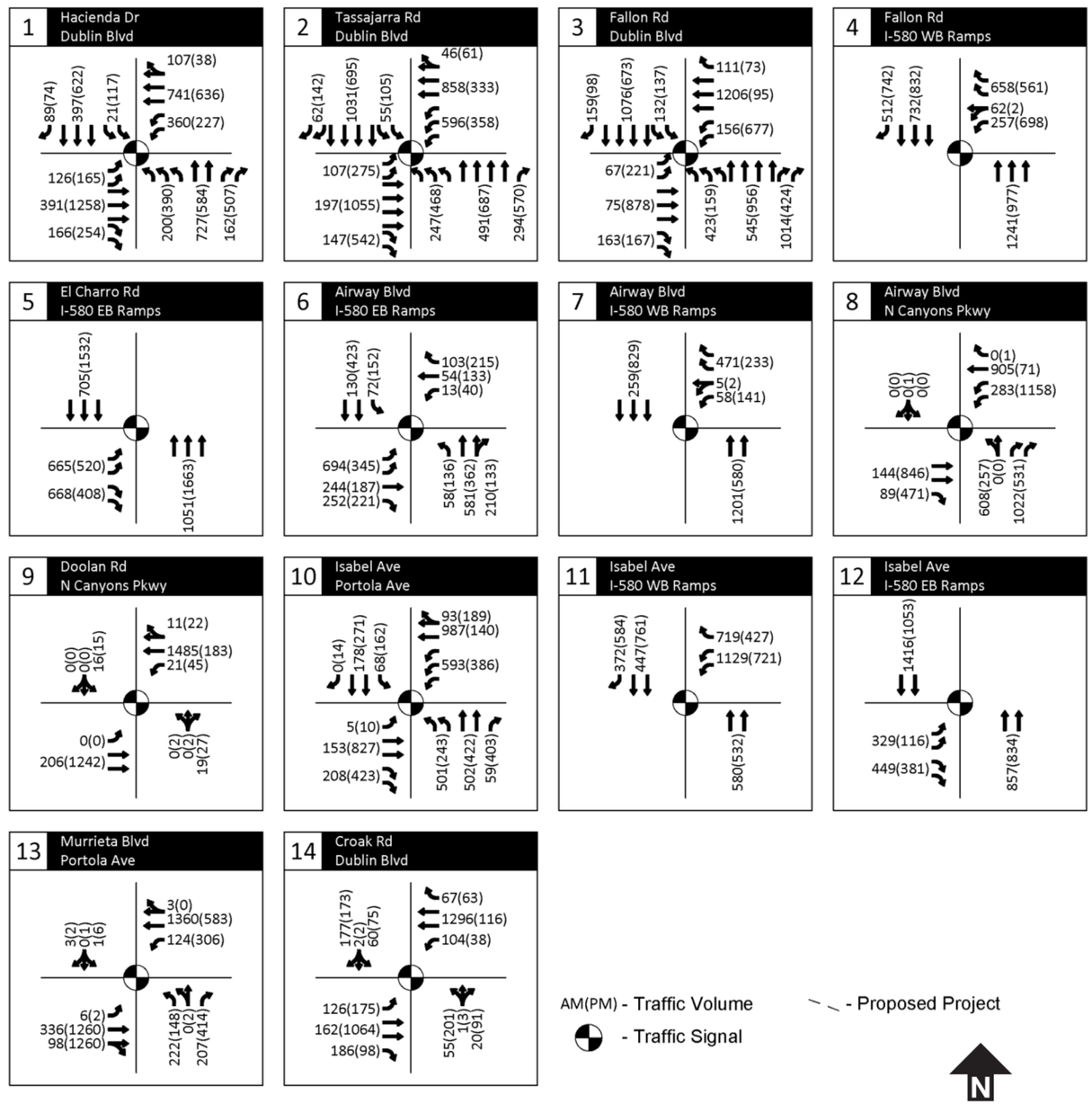
Mitigation Measure TRAF-3 (described above)

Table 5.14-5 2040 Plus Project Intersection Level of Service

ID#	Location	Hour	LOS Standard	2040 Plus Project		
				V/C	Delay	LOS
1	Hacienda Drive & Dublin Boulevard	AM	D	0.66	28.7	C
		PM	D	0.71	34.8	C
2	Tassajara Road & Dublin Boulevard	AM	D	0.63	31.2	C
		PM	D	0.65	34.2	C
3	Fallon Road & Dublin Boulevard	AM	D	0.70	28.5	C
		PM	D	0.74	41.0	D
4	Fallon Road & I-580 WB Ramps	AM	D	0.63	9.8	A
		PM	D	0.66	11.6	B
5	El Charro Road & I-580 EB Ramps	AM	D	0.58	9.3	A
		PM	D	0.62	9.1	A
6	Airway Boulevard & I-580 EB Ramps	AM	E	0.67	35.9	D
		PM	E	0.50	33.0	C
7	Airway Boulevard & I-580 WB Ramps	AM	E	0.65	17.8	B
		PM	E	0.27	10.5	B
8	Airway Boulevard & N. Canyons Parkway	AM	E	***1.20***	***85.3***	***F***
		PM	E	***1.02***	***105.9***	***F***
9	Doolan Road & N. Canyons Parkway	AM	Mid-D	0.59	3.8	A
		PM	Mid-D	0.55	7.5	A
10	Isabel Avenue & Portola Avenue	AM	E	0.93	44.0	D
		PM	E	0.68	33.3	C
11	Isabel Avenue & I-580 WB Ramps	AM	E	0.99	46.4	D
		PM	E	0.69	12.0	B
12	Isabel Avenue & I-580 EB Ramps	AM	E	0.83	24.5	C
		PM	E	0.61	11.5	B
13	Murrieta Boulevard & Portola Avenue	AM	Mid-D	0.62	19.3	B
		PM	Mid-D	0.78	32.9	C
14	Dublin Boulevard Extension & Croak Road[1]	AM	D	0.71	16.3	B
		PM	D	0.78	14.1	B

Source: Kittelson & Associates, Inc. 2018
LOS findings in ***BOLD*** represent intersections operating below the applicable LOS standard
1This intersection is a direct result of the Project, and would not exist under No Project scenarios.





2040 Plus Project (Cumulative) Turn Volumes and Intersection Configurations Figure **5.14-7**

Source: Kittelson & Associates, 2018

This Page Intentionally Left Blank

B. Result in an impact to vehicle queuing

Existing Plus Project (2017)

To determine if the Project would cause queueing impacts, 95th percentile queue lengths were estimated for Existing Plus Project conditions. The findings for the 95th percentile queue length in the AM and PM peak hours for all intersections are detailed in **Appendix D** of this Draft EIR. Intersection movements where the Project would cause a turn pocket to exceed its available storage by more than 25 feet or increase a queue already exceeding the available turn pocket storage by more than 25 feet include:

- Fallon Road and Dublin Boulevard (#3)

Impact TRAF-2.1: The Project would result in the northbound left turn queue at the intersection of Fallon Road and Dublin Boulevard increasing in length by more than 25 feet (389 feet) during the AM peak hour. This turn queue already exceeds the available storage under existing conditions. **(Less than Significant with Mitigation)**

The existing lane configurations and signal timing do not provide enough capacity to serve the increased vehicle demand, which results in 95th percentile queue lengths for high demand movements. With implementation of the Project, the vehicle demand would increase at all approaches for this intersection. During the AM peak hour, the Project would cause the queue for the northbound left turn movement to increase from 419 feet to 808 feet resulting in the queue exceeding the available storage of 380 feet. This is a potentially significant impact. Implementation of **Mitigation Measure TRAF-2** would reduce the queue to 330 feet during the AM peak hour, allowing it to be contained within the available storage. This would be accomplished through the implementation of two left turn lanes at this approach, and moreover by increasing the capacity of the intersection to allow more vehicles to travel through efficiently. This mitigation measure would reduce this impact to less than significant.

Mitigation for Impact TRAF-2.1

Mitigation Measure TRAF-2 (described above)

2025 Conditions

To determine if the Project would cause queueing impacts at the Project's projected opening year, 95th percentile queue lengths were estimated for 2025 Plus Project conditions. The findings for the 95th percentile queue length in the AM and PM peak hours for all intersections are detailed in **Appendix D** of this Draft EIR. Intersection movements where the Project would cause a turn pocket to exceed its available storage by more than 25 feet or increase a queue already exceeding the available turn pocket storage by more than 25 feet include:

- Fallon Road and Dublin Boulevard (#3)

Impact TRAF-2.2: The Project would result in the southbound left turn queue at the intersection of Fallon Road and Dublin Boulevard exceeding the available turn pocket storage by more than 25 feet (67 feet) during the PM peak hour under 2025 conditions. **(Less than Significant with Mitigation)**

The existing lane configurations and signal timing do not provide enough capacity to keep the 95th percentile queue from exceeding the available storage at this intersection. With implementation of the Project, the southbound left turn demand to access the Project would increase substantially. During the PM peak hour, the Project would cause the queue for the southbound left turn movement to increase from 13 feet to 197 feet, resulting in the queue exceeding the available storage of 130 feet. This is a potentially significant impact. Implementation of **Mitigation Measure TRAF-2** would add additional lanes in the northbound, westbound, and eastbound directions at this intersection, resulting in more capacity at the intersection. This would allow for green lights in these directions to be shorter, as the intersection would allow more vehicles to pass through in a shorter amount of time. Lane modifications included in Mitigation Measure TRAF-2 would in turn allow the southbound left turn signal to have a longer green light, allowing more vehicles time to move through the intersection. This would indirectly relieve the queueing impact introduced by the Project by allowing the intersections to have more throughout. The queue would be reduced to 105 feet, allowing it to be contained within the available storage and reducing this impact to less than significant.

Mitigation for Impact TRAF-2.2

Mitigation Measure TRAF-2 (described above)

2040 (Cumulative) Conditions

Based on detailed information provided in **Appendix D**, the addition of Project traffic under the 2040 Plus Project (Cumulative) conditions would potentially result in vehicle queues exceeding the available storage, or would increase vehicle queues by more than 25 feet for movements where the queue already exceeds the available storage. Queuing impacts have been identified for the following intersections:

- Airway Boulevard and North Canyons Parkway (#8)
- Isabel Avenue and I-580 Westbound Ramps (#11)

Impact TRAF-2.3: The Project would result in the westbound queue at Airway Boulevard and North Canyons Parkway increasing by more than 25 feet (29 feet) during the PM peak hour under 2040 conditions. This turn queue already exceeds the available storage under existing conditions. **(Significant and Unavoidable Impact)**

With implementation of the Project, this intersection would experience significant growth in demand. The Project would cause the westbound left turn queue, which already exceeds the available turn pocket storage under existing conditions, to increase by more than 25 feet (29 feet) during the PM peak hour. The existing signal timing and lane configuration is inadequate to provide sufficient capacity to meet the demand for this movement in the 2040 Plus Project (Cumulative)

scenario, resulting in a potentially significant impact. Implementation of **Mitigation Measure TRAF-3** would reduce the westbound left turn queue to fit within the available turning storage. This would be accomplished by increasing the capacity of the intersection to allow more vehicles to travel through efficiently. However, as described under **Impact TRAF-1.2** above, Dublin as the lead agency cannot guarantee the implementation and timing of the mitigation measure, as it is outside the control and jurisdiction of the City. Therefore, this impact remains **significant and unavoidable**.

Mitigation for Impact TRAF-2.3

> **Mitigation Measure TRAF-3** (described above)

Impact TRAF-2.4: The Project would result in the westbound right turn at the intersection of Isabel Avenue and I-580 Westbound off-ramps exceeding the available turn pocket storage by more than 25 feet (58 feet) during the AM peak hour under 2040 conditions. **(Significant and Unavoidable Impact)**

With implementation of the Project, increased demand from vehicles exiting the freeway to access the Project would exceed the intersection's capacity for the westbound right turn movement. This would result in the right turn queue exceeding the available storage by 58 feet during the AM peak hour. This is a potentially significant impact. Implementation of **Mitigation Measure TRAF-4** would reduce the queue to 439 feet, allowing it to be contained within the available storage. However, this intersection is under the jurisdiction of Caltrans, and therefore Dublin cannot guarantee the implementation and timing of the mitigation measure, as it is outside the control and jurisdiction of the City. Therefore, this impact remains **significant and unavoidable**.

Mitigation for Impact TRAF-2.4

> **Mitigation Measure TRAF-4:** Caltrans is to optimize the traffic signal timing at Isabel Avenue and I-580 Westbound Ramps by the year 2035 to increase the green time for the westbound right turn movement.

C. Impede existing or planned transit services

The primary goals of transit service in the study area are to increase ridership, improve access to BART, and reduce system inefficiencies. The Project would provide a multimodal roadway connection between Dublin and Livermore on the north side of I-580. The extension of bus transit service along the Project from the current terminus of Dublin Boulevard at Fallon Road eastward to developable areas of eastern Dublin is planned for in the EDSP. The Project would allow for future bus transit access to BART from eastern Dublin land uses, and would encourage transit ridership in eastern Dublin by accommodating extension of existing bus service to a new area. The Project would also provide transit operators an alternative route and local connection between the two municipalities that avoids I-580, which is heavily congested during the peak commute periods. This

may improve transit travel times on routes utilizing the new connection, which may indirectly increase ridership through improved travel time (which would make transit more appealing to riders). Therefore, the Project would not impede existing or planned transit service. This impact is **less than significant**.

D. Impede pedestrian circulation, access, or safety

Under existing conditions, there is no pedestrian connectivity between Dublin and Livermore north of I-580. To travel between these municipalities, pedestrians must travel down Isabel Avenue and along Jack London Boulevard. The Project would provide a more direct and appealing pedestrian connection along the north side of I-580 connecting the Dublin Boulevard/Fallon Road intersection with the Doolan Road/North Canyons Parkway intersection in Livermore.

The Project design includes a dedicated sidewalk for pedestrians on one side and a multiuse trail on the other, where both bicyclists and pedestrians would share the pathway. By providing this connection, the Project would improve pedestrian circulation and access. The new sidewalk and multiuse trail have been designed to the latest applicable standards ensuring adequate separation between pedestrians and vehicle traffic. Pedestrian access to the new roadway facilities would be from the Dublin Boulevard/Fallon Road intersection and the Doolan Road/North Canyons Parkway intersection. These intersections do not currently include pedestrian crosswalks eastward across Fallon Road or westward across Doolan Road. However, the Project would include the addition of pedestrian signals and crosswalks, providing pedestrian access to the Project. Based on the above, the Project would not impede pedestrian access, circulation, or safety. This impact is **less than significant**.

E. Impede the circulation, access, or safety of bicyclists or bicycle facilities

The new connection would improve bicycle connectivity north of I-580 where there are no bicycle facilities today. The Project would implement a multiuse path along with bicycle lanes to facilitate the connection between eastern Dublin and Livermore. Access to these new facilities would occur via signalized intersections at Fallon Road and Doolan Road. As part of the Project, the signal timing at these intersections would be improved to provide sufficient green time to accommodate bicycle movements. Bicycle safety along the Project is addressed through the design of the bike lanes and multiuse path, which meets current standards providing sufficient separation between bicyclists and motor vehicle traffic. The Project is also consistent with the *2014 City of Dublin Bicycle and Pedestrian Master Plan*, the *2012 Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas*, and the *2018 City of Livermore Bicycle, Pedestrian, and Trails Active Transportation Master Plan* as it includes Class II bike lanes along the Project length. Therefore, the Project would not impede bicycle access, circulation, or safety, and this impact is **less than significant**.

CUMULATIVE IMPACTS

The cumulative setting for traffic is equivalent to the transportation study area evaluated above. The traffic study conducted for the Project utilized traffic volumes based on the ACTC Countywide Model (as modified to ensure that the model accurately reflected planned and funded land-use development and transportation Projects expected to be in place by 2025 and 2040). As such, the traffic study conducted for the Project analyzed cumulative conditions within the transportation study area. The 2040 Plus Project (Cumulative) scenario used in the above analysis reflects regional land use projections consistent with ABAG Projections, as well as roadway network improvements contained in Plan Bay Area 2040. Therefore, with implementation of the mitigation measures above, no cumulative impact would occur. However, Dublin as the lead agency cannot guarantee the implementation and timing of mitigation outside the control and jurisdiction of the City. Mitigation to reduce cumulative impacts would require improvements in Livermore and in areas under Caltrans' jurisdiction. Therefore, it has been conservatively determined that cumulative impacts to the intersection of Airway Boulevard and North Canyons Parkway and the intersection of Isabel Avenue and the I-580 Westbound off-ramps would occur.

REFERENCES

Alameda County Public Works Agency. 2012. *Bicycle and Pedestrian Master Plan*. Available: https://www.acpwa.org/pas/bicycle-and-pedestrian-master-plan. Accessed: December 6, 2018.

California Department of Transportation. 2002. *Guide for the Preparation of Traffic Studies*. Available: http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf. Accessed: December 6, 2018.

City of Dublin. 2014. *Bicycle and Pedestrian Master Plan*. Available: http://www.ci.dublin.ca.us/313/Trails-Bikeways. Accessed: December 6, 2018.

City of Dublin. 1985. General Plan. Community Development Department. Dublin, CA. Amended November, 2017. Available: https://www.dublin.ca.gov/171/General-Plan. Accessed: December 6, 2018.

City of Livermore. 2018. City of Livermore's Active Transportation Plan (ATP) Project Website. Available: http://www.cityoflivermore.net/civicax/filebank/documents/18254/. Accessed: March 1, 2019.

This Page Intentionally Left Blank

5.15 UTILITIES

INTRODUCTION

This section evaluates impacts to public utilities that may occur from implementation of the Project. Information in this section draws upon multiple sources, including:

- Dublin San Ramon Services District, Urban Water Management Plan (2016)
- Alameda Countywide Clean Water Program
- Dublin General Plan (2016)
- Eastern Dublin Specific Plan (2016)
- Alameda County General Plan, East County Area Plan (2002)
- Livermore General Plan (2014)

These documents are available on file with the City of Dublin at 100 Civic Plaza, Dublin, California.

Scoping Issues Addressed

Public comments related to public utilities were received during the public scoping period for this Draft environmental impact report (EIR). Comments from individuals and the Dublin/San Ramon Services District (DSRSD) included:

- Statement on the need for close coordination between DSRSD and Dublin when developing final utility plans
- The opportunity and necessity to include utility lines as a part of the Project
- The opportunity for a connection between DSRSD's water lines and Livermore's water lines to improve emergency service of potable water and improve the reliability of DSRSD's potable water service
- A recommendation to use a joint trench approach for the placement of utilities within the Project site

As discussed below, the Project would include underground extension of existing utilities within the Project site. Utility lines would include potable water, recycled water, stormwater, sewer, electric, and communications. Specific locations of each utility within the Project site, the possibility

of joint trench, and consideration of a connection between DSRSD and Livermore Water Division water lines will be determined during the final design for the Project. DSRSD has discussed the proposed extension of the existing potable water and recycled waterlines with Livermore Municipal Water and the Livermore water retailer has expressed that they are amenable to the connection.[1]

REGULATORY SETTING

Federal

The section below provides a summary of regulations discussed elsewhere in this EIR; please refer to **Section 5.8, Hydrology and Water Quality**, and **Section 5.3, Biological Resources**, for additional discussion of these regulations.

Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the US from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit.[2] Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal, industrial, and construction point sources to comply with the NPDES permit program.

National Pollutant Discharge Elimination System

The NPDES permit program addresses water pollution by regulating point sources that discharge pollutants to waters of the US. The NPDES was created in 1972 by the Clean Water Act and is authorized to state governments by the US Environmental Protection Agency (EPA) to perform permitting, administrative, and enforcement aspects of the program.

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for MS4 discharge.[3] The Project site is within the San Francisco Bay Regional Water Quality Control Board (RWQCB) jurisdiction and is under an existing MS4, and is subject to the Municipal Regional Stormwater NPDES Permit (MRP).[4] This permit includes provisions for permanent post-construction stormwater requirements related to development and roadway projects outside the Caltrans right-of-way. The MRP in Alameda County is administered by the Alameda Countywide Clean Water Program (ACCWP), and requires post-construction stormwater treatment and hydromodification

[1] Personal communication between Dublin and Livermore, November 21, 2017
[2] A point source is any discrete conveyance such as a pipe or a man-made ditch.
[3] The US Environmental Protection Agency defines an MS4 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 stormwater, that is designed or used for collecting or conveying stormwater."
[4] NPDES Permit No. CAS612008, SWRCB Order R2-2015-0049

management for all new impervious components of roadway projects.[5] The ACCWP developed the *C.3 Stormwater Technical Guidance* manual[6] to assist designers and reviewers in complying with post-construction stormwater treatment requirements.

State

California Urban Water Management Planning Act

California Water Code Section10610-10610.4,[7] known at the California Urban Water Management Planning (UWMP) Act, requires urban water suppliers that either provide over 3,000 acre-feet of water annually, or serve more than 3,000 urban connections to prepare and submit a UWMP to the California Department of Water Resources and update those plans every 5 years.[8] UWMPs help guide and support the supplier's long term resource planning to ensure adequate water supplies are available to meet existing and future water needs. The DSRSD's latest UWMP, the 2015 UWMP, was prepared in June 2016.

San Francisco Bay Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) is a State department that consists of nine RWQCBs that are dedicated to the "abundance of clean water for human uses and environmental protection" to sustain the state's future.[9] The SWRCB has regulatory responsibility for protecting the water quality of nearly 1.6 million acres of lakes, 1.3 million acres of bays and estuaries, 211,000 miles of rivers and streams, and about 1,100 miles of exquisite California coastline under the CWA and the Porter-Cologne Water Quality Control Act. The San Francisco Bay Water Board is the local division of the SWRCB that has oversight authority over the Project.[10]

California Integrated Waste Management Act

California's Integrated Waste Management Act (IWMA) of 1989 (AB 939) requires that cities and counties divert 50 percent of all solid waste from landfills as of January 1, 2000, through source reduction, recycling, and composting. AB 939 also establishes a goal for all California counties to provide at least 15 years of ongoing landfill capacity.

[5] ACCWP, 2017. About the Clean Water Program. Available: https://www.cleanwaterprogram.org/index.php/about-us.html. Accessed: November 13, 2018.
[6] ACCWP, 2018. C.3 Stormwater Technical Guidance. Available: https://www.cleanwaterprogram.org/images/uploads/C3_Technical_Guidance_v6_Oct_2017_FINAL_Errata_updated_04.20.18.pdf. Accessed: November 13, 2018.
[7] California Department of Water Resources. California Water Code Division 6 Part 2.5 Urban Water Management Planning. Available: https://water.ca.gov/LegacyFiles/urbanwatermanagement/docs/water_code-10610-10656.pdf. Accessed: November 19, 2018.
[8] California Department of Water Resources. Urban Water Management Plan. Available: https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans. Accessed: November 19, 2018.
[9] State Water Resources Control Board. About the Water Board. Available: https://www.waterboards.ca.gov/about_us/. Accessed: November 19, 2018.
[10] San Francisco State Regional Water Quality Control Board. Regional Map. Available: https://www.waterboards.ca.gov/sanfranciscobay/about_us/boundary.html. Accessed: November 19, 2018.

To help achieve this goal, the IWMA requires that each city and county prepare a Source Reduction and Recycling Element to be submitted to the Department of Resources Recycling and Recovery (CalRecycle), a department within the California Natural Resources Agency, which administers programs formerly managed by the State's Integrated Waste Management Board and Division of Recycling.

As part of CalRecycle's Zero Waste Campaign, regulations affect what common household items can be placed in the trash. Household materials-including fluorescent lamps and tubes, batteries, electronic devices and thermostats-that contain mercury are no longer permitted in the trash and must be disposed separately.

In 2007, Senate Bill 1016 amended Assembly Bill 939 to establish a per capita disposal measurement system. The per capita disposal measurement system is based on a jurisdiction's reported total disposal of solid waste divided by a jurisdiction's population. CalRecycle sets a target per capita disposal rate for each jurisdiction. Each jurisdiction must submit an annual report to CalRecycle with an update of its progress in implementing diversion programs and its current per capita disposal rate.

Local

Zone 7 Water Agency

Alameda County Flood Control and Water Conservation District – Zone 7 (Zone 7) is responsible for providing flood protection and water resources within the utility study area.[11] The Zone 7 Water Agency was created in 1947 and is currently the Tri-Valley's water wholesaler, providing treated water to the California Water Service Company, the cities of Livermore and Pleasanton, and the DSRSD. Drainage plans for development projects must be reviewed by Zone 7 to ensure that the Project would not propose impacts to downstream facilities. Activities within stormwater conveyances and flood channels, including discharges of stormwater, require an encroachment permit.

City of Dublin

City of Dublin General Plan

Public Utilities are addressed in the Schools, Public Lands, and Utilities Element of Dublin's General Plan. The following policies are relevant to the Project:

Guiding Policy 4.5.1.A.1	Expand sewage treatment and disposal capacity to avoid constraining development consistent with the Dublin General Plan.

[11] Alameda County, 2018. Zone 7 Water Agency. Available: http://www.co.alameda.ca.us/zone7/. Accessed: November 27, 2018.

Guiding Policy 4.6.1.A.1	Base General Plan proposals on the assumption that water supplies will be sufficient and that local wells could be used to supplement imported water if necessary.
Implementing Policy 7.3.1.B.1	Enforce the requirements of the Municipal Regional Permit for stormwater issued by the San Francisco Bay Regional Water Quality Control Board or any subsequent permit as well as Chapter 7 (Public Works) and Chapter 9 (Subdivisions) of the Dublin Municipal Code for maintenance of water quality and protection of stream courses.
Implementing Policy 7.3.1.B.2	Review development proposals to ensure site design that minimizes soil erosion and volume and velocity of surface runoff.
Guiding Policy 12.3.1.A.1	Work with Zone 7 and DSRSD to secure an adequate water supply for, and provide water delivery to, existing and future customers in Dublin.
Implementing Policy 12.3.1.B.1	In anticipation of planned future growth, continue working with DSRSD and Zone 7 to plan and provide for sufficient future water supplies.
Implementing Policy 12.3.3.B.2	Support DSRSD's ongoing efforts to extend recycled water infrastructure ("purple pipe") to new locations.
Guiding Policy 12.3.5.A.1	Protect the quality and quantity of surface water and groundwater resources that serve the community.
Guiding Policy 12.3.5.A.2	Protect water quality by minimizing stormwater runoff and providing adequate stormwater facilities.
Guiding Policy 12.3.5.A.3	To minimize flooding in existing and future development, design stormwater facilities to handle design-year flows based on buildout of the General Plan.
Implementing Policy 12.3.5.B.1	Support Zone 7's efforts to complete planned regional storm drainage improvements.
Implementing Policy 12.3.5.B.2	With the goal of minimizing impervious surface area, encourage design and construction of new streets to have the minimum vehicular travel lane width possible while still meeting circulation, flow, and safety requirements for all modes of transportation.
Implementing Policy 12.3.5.B.6	Maximize the runoff directed to permeable areas or to stormwater storage by appropriate site design and grading,

using appropriate detention and/or retention structures, and orienting runoff toward permeable surfaces designed to manage water flow.

Implementing Policy 12.3.5.B.7 Review development plans to minimize impervious surfaces and generally maximize infiltration of rainwater in soils, where appropriate. Strive to maximize permeable areas to allow more percolation of runoff into the ground through such means as bioretention areas, green strips, planter strips, decomposed granite, porous pavers, swales, and other water-permeable surfaces. Require planter strips between the street and the sidewalk within the community, wherever practical and feasible.

Implementing Policy 12.3.5.B.8 Continue conducting construction site field inspections to ensure proper erosion control and materials/waste management implementation to effectively prohibit non-stormwater discharges

Eastern Dublin Specific Plan

Public utilities are addressed in Chapter 8, Community Services and Facilities, and Chapter 9, Water, Wastewater, and Storm Drainage, of the Eastern Dublin Specific Plan (EDSP). The following goals and policies apply to the Project:

Policy 8-9 Coordinate with Pacific Gas and Electric and Pacific Bell in planning and scheduling future facilities which will serve eastern Dublin.

Program 8L Require project applicants to provide documentation that electric, gas, and telephone service can be provided to all new development.

Goal 9.1: To provide an adequate water system for the Eastern Dublin Specific Plan area.

Policy 9-1 Provide an adequate water supply system and related improvements and storage facilities for all new development in the Eastern Dublin Specific Plan area.

Policy 9-2 Coordinate with DSRSD to expand its service boundaries to encompass the entire Eastern Dublin Specific Plan area. Expansion of the DSRSD water system into eastern Dublin should be coordinated with the Zone 7 wholesale water delivery system. The City should support DSRSD's and Zone 7's policies, capital improvement programs and water management plans as they relate to the Eastern Dublin Specific Plan area.

Goal 9.2: To provide adequate wastewater collection, treatment and disposal for the Eastern Dublin Specific Plan area.

Policy 9-3 Provide for public wastewater collection, treatment and disposal for all new development in the Eastern Dublin Specific Plan area.

Policy 9-5 Coordinate with DSRSD to expand its recycled water service boundary to encompass the entire Eastern Dublin Specific Plan area. Require recycled water use or landscape irrigation in accordance with DSRSD's Recycled Water Policy.

Goal 9.3: To provide adequate storm drainage facilities for the Eastern Dublin Specific Plan area.

Policy 9-7 Require drainage facilities that will minimize any increased potential for erosion or flooding.

Policy 9-9 Plan facilities and select management practices in the Eastern Dublin Specific Plan area that protect and enhance water quality

Alameda County

Alameda County General Plan, East County Area Plan

Public utilities are addressed in under Goals, Policies, and Programs for General Services and Facilities. The following goals and policies apply to the Project:

Policy 218 The County shall allow development and expansion of public facilities (e.g., parks and recreational facilities; schools; child care facilities; police, fire, and emergency medical facilities; solid waste, water, storm drainage, flood control, subregional facilities; utilities etc.) in appropriate locations inside and outside the Urban Growth Boundary consistent with the policies and Land Use Diagram of the East County Area Plan.

Policy 221 Basic rural services should normally be provided by Alameda County and other existing service districts.

Goal: To provide an adequate, reliable, efficient, safe, and cost-effective water supply to the residents, businesses, institutions, and agricultural uses in East County.

Policy 252 The County shall encourage Zone 7 to pursue new water supply sources and storage facilities only to the extent necessary to serve the rates and levels of growth established by the Initiative and by the general plans of the cities within its service area.

Goal: To provide efficient, cost-effective, and environmentally sound storm drainage and flood control facilities.

Policy 277 The County shall work with the Alameda County Flood Control and Water Conservation District (Zone 7) to provide for development of adequate storm drainage and flood control systems to serve existing and future development.

Policy 280 The County shall regulate new development on a case-by-case basis to ensure that, when appropriate, project storm drainage facilities shall be designed so that peak rate flow of storm water from new development will not exceed the rate of runoff from the site in its undeveloped state.

Policy 282 The County shall encourage use of natural or nonstructural storm water drainage systems to preserve and enhance the natural features of a site.

Goal: To provide efficient and cost-effective utilities.

Policy 287 The County shall require new developments to locate utility lines underground, whenever feasible.

City of Livermore

City of Livermore General Plan

The Livermore General Plan, Chapter 8, Open Space and Conservation Element ensures the comprehensive and long-range preservation and management of open space land for the protection of natural resources, economic uses, outdoor recreation, and as a scenic resource. The following goals and objectives apply to the Project:

Goal INF-1: Provide sufficient water supplies and facilities to serve the City in the most efficient and financially sound manner, while maintaining the highest standards required to enhance the quality of life for existing and future residents.

Goal INF-4: Provide utilities in ways that are safe, environmentally acceptable and financially sound.

Objective INF-1.1 Plan, manage and develop the public water treatment, storage and distribution systems in a logical, timely and appropriate manner.

Objective INF-4.2 Provide reliable utility service in a way that balances the public's need and Livermore's natural environment.

EXISTING CONDITIONS

The utility study area encompasses parcels traversed by the Project, as well as the service areas of local utility providers. The study area is serviced by a variety of utility providers such as DSRSD, Livermore Municipal Water, Amador Valley Industries, and Livermore Sanitation. The Project would include new service extensions from DSRSD, Pacific Gas and Electric (PG&E), and communication services. The Project would include new connections to existing infrastructure in Livermore (see **Table 5.15-1**).

Table 5.15-1 Public Utility Providers

Utility Type	Provider	Description
Water Wastewater Recycled Water	Dublin San Ramon Services District (DSRSD) Livermore Water Resources Division	DSRSD would provide domestic water, recycled water, and wastewater lines to the Project, and would intertie with an existing Livermore Water Resources Division domestic water line.
Stormwater	Dublin Livermore Water Resources	Provides stormwater infrastructure within Dublin Provides stormwater infrastructure within Livermore
Solid Waste	Amador Valley Industries Livermore Sanitation	Amador Valley Industries would provide solid waste and recycling services within Dublin. Livermore Sanitation currently serves Livermore and some unincorporated areas of the County.
Electricity and Gas	Pacific Gas & Electric (PG&E)	Provides electricity service and natural gas in the study area
Communication Services	American Telephone and Telegraph (AT&T), Verizon, and Comcast	Provides high-speed internet and phone services

Source: BKF, 2018

City of Dublin

According to the 2015 UWMP, the DSRSD was formed in 1953 and entered into an agreement with Zone 7 in 1963 to acquire additional treated water supplies. Commercial and residential growth in the region has since triggered increases in the capacity of Zone 7's treatment, pumping, storage, and distribution facilities, along with the expansion of DSRSD's water service area and water distribution system. In response to projected growth of the region, additional water supplies have been acquired to satisfy projected growth in the region. The contract between DSRSD and Zone 7 is in effect until the year 2024.

Stormwater Drainage

Dublin's municipal stormwater system consists of ditches, inlets, and basins. Dublin's Public Works Department is responsible for maintaining storm drains and drainage ditches within public areas and along city streets before they drain into Zone 7 maintained facilities. Dublin's Stormwater Program is administered by the Dublin's Public Works Department and is designed to eliminate pollutants such as motor oil, dirt, pesticides, and other contaminants from entering the storm drain

system as mandated under the CWA. Such pollutants flow from landscaped areas and roadways in contaminated water, also referred to as urban runoff.[12] The stormwater discussion in this section focuses on the need to construction off-site stormwater treatment facilities. Stormwater treatment and hydromodification is discussed in **Section 5.8, Hydrology and Water Quality**. Dublin is a co-permittee under the Municipal Regional Stormwater NPDES Permit.

Electricity

PG&E was incorporated in 1905 and is one of the largest combined natural gas and electric energy companies in the United States. PG&E provides electric services to approximately 5.4 million customer accounts statewide, including those located in Dublin. PG&E's electricity system consists of 106,681 circuit miles[13] of electric distribution lines and 18,466 circuit miles of interconnected transmission lines.[14]

Natural Gas

PG&E provides natural gas services to approximately 4.3 million customer accounts statewide, including those located within Dublin. PG&E's natural gas system consists of 42,141 miles of distribution pipeline and 6,438 miles of transmission pipelines. [15]

Communication Services

Residents and businesses located within Dublin are serviced by a variety of telephone and internet service providers such as AT&T, Verizon, and Comcast. Existing underground and overhead infrastructure within the study area includes AT&T and Verizon telecommunication connections between Fallon Road and Doolan Road.

Solid Waste

Solid Waste and recycling services in Dublin are provided by Amador Valley Industries on a contractual basis for residential and commercial uses. .

Alameda County

Unincorporated portions of the County within the study area consist of large parcels of agriculture and resource management land uses. Existing development includes scattered agricultural operations and sparse residences. As unincorporated portions of the study area are largely undeveloped, existing utilities within these areas feature very limited utility infrastructure. Water, recycled water, and wastewater services are provided by Zone 7 within the study area. The unincorporated portions of the County along Collier Canyon Road and Doolan Road are serviced by

[12] *Ibid.*
[13] The total length, in miles, of separate circuits regardless of the number of conductors used per circuit.
[14] Pacific Gas and Electric, 2018. Company Profile. Available: https://www.pge.com/en_US/about-pge/company-information/profile/profile.page. Accessed: November 27, 2018.
[15] *Ibid.*

Livermore Sanitation, Inc. Livermore Sanitation, Inc, provides collection of solid waste, compostables, and recyclables to customers in these areas.[16]

City of Livermore

Potable Water and Wastewater

According to the Livermore General Plan, potable and non-potable water is provided by California Water Service Company (Cal Water) and the Livermore Water Resources Division sourced from Zone 7. Cal Water supplies the downtown area and southern portion of Livermore, while Livermore Municipal Water serves the northwest, northeast, and eastern portions of Livermore, including the easternmost portion which is adjacent to the Project site.

Stormwater Drainage

Livermore Water Resources Division is responsible for maintaining storm drains and drainage ditches within public areas and along city streets.[17] Livermore's municipal storm drainage system consists of inlets or catch basins, open channels and ditches, underground pipelines, and detention ponds. Livermore's Public Works Department is responsible for maintaining storm drains and drainage ditches within public areas and along city streets before they drain into facilities maintained by Zone 7. Livermore's Stormwater Management Program is designed to eliminate pollutants such as motor oil, dirt, pesticides, and other contaminants from entering the storm drain system as mandated under the CWA. Stormwater runoff within the study area flows southerly (downslope) towards flatter terrain near Interstate 580 (I-580). The stormwater discussion in this section focuses on the need to construction off-site stormwater treatment facilities. Stormwater treatment and hydromodification are discussed in **Section 5.8, Hydrology and Water Quality**.

Solid Waste

Collection of solid waste, recycling, and compostables in Livermore is provided by Livermore Sanitation, Inc. for residential and commercial uses.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following significance criteria for utilities were derived from the Environmental Checklist in the California Environmental Quality Act (CEQA) Guidelines Appendix G. The significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of impacts of the Project.

[16] Livermore Sanitation, Inc., 2019. Unincorporated Service Areas. Available: https://www.livermoresanitation.com/unincorporated/. Accessed: January 25, 2019.
[17] City of Livermore, 2018. Stormwater Management FAQS. Available: http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/faqs/stormwater.htm. Accessed: November 27, 2018.

An impact of the Project would be considered significant and would require mitigation if it would meet one of the following criteria:

A. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board

B. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

C. Require or result in the construction of a new storm drainage facilities or expansion of existing facilities, the construction of which could cause significant effects

D. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed

E. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments

F. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs

G. Comply with federal, state, and local statutes and regulations related to solid waste

Methodology

To determine potential impacts, the impact significance criteria identified above were applied to construction and operation of the Project. Additionally, a review of agencies websites and relevant planning documents, and consultation with services providers, was conducted to ensure impacts were identified accurately.

Impact Analysis

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board

And

B. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

The Project would entail the construction and operation of a 1.5 mile roadway extension of Dublin Boulevard through eastern Dublin and the County to North Canyons Parkway in Livermore. The Project would include installation of new potable water, recycled water, and wastewater lines within the construction and operational footprints to support planned development in Dublin and avoid or minimize additional, future utility trenching within the operational footprint. Water, recycled water, and wastewater utilities would be extended from existing DSRSD lines at Fallon Road. The water line would be extended from the Dublin Boulevard/Fallon Road intersection eastward to the future Doolan Road/North Canyons Parkway intersection. Wastewater and recycled water lines however, would be extended only from the Dublin Boulevard/Fallon Road intersection to the eastern edge of Dublin. Aside from landscape irrigation, the Project would not include connections to new water lines or utility lines. As discussed in **Chapter 7.0, Other CEQA Considerations**, planned growth and utility service to support planned growth within the region is accounted for in Dublin, the County, and Livermore's General Plans.

Construction

Construction of the project would not entail the regular use of water. Similarly, construction activities would not regularly generate wastewater. Given the above, wastewater treatment requirements are not applicable to the Project, and given that construction of the Project would not require the regular use of water or generation of wastewater, expansion of water or wastewater treatment facilities would not occur. Therefore, this impact would be **less than significant**.

Operation

As a roadway project, Project operation would not include the regular use of water or recycled water services. Water may be used intermittently at the Project site for maintenance purposes such as street sweeping and landscape irrigation. This would not require water or water services to the extent that new or expanded treatment facilities would be required. Similarly, operation of the Project would not generate wastewater, as no habitable structures or other facilities such as restrooms are proposed.

Given the above, wastewater treatment requirements are not applicable to the Project. Given that operation of the Project would not require the use of domestic water, recycled water, or generation of wastewater, or the expansion of water, recycled water, or wastewater treatment facilities, this impact would be **less than significant**.

C. Require or result in the construction of a new storm drainage facilities or expansion of existing facilities, the construction of which could cause significant effects

Construction

Construction of the Project would involve ground disturbing activities such as excavation, trenching, grading, demolition, vegetation removal, and installation of new stormwater infrastructure. Construction of new stormwater infrastructure as a part of the Project is taken into account in the analysis of each resource topic in this Draft EIR. **Section 5.3, Biological Resources** and **Section 5.4, Cultural and Tribal Cultural Resources,** examine the potential for construction to impact these resources. As discussed in **Section 5.8, Hydrology and Water Quality**, and in the *Hydrology Report* prepared for the Project, adherence to the NPDES General Construction Permit, preparation of a stormwater pollution prevention plan (SWPPP), and application of best management practices (BMPs) would minimize impacts to open channels or surface water receiving bodies (i.e., Cottonwood Creek). Such requirements include the implementation of a SWPPP, which would identify potential pollutant sources and prescribe BMPs to avoid impacts to surface water during construction. BMPS include but are not limited to the following:

- Provide for waste management
- Establish proper building material staging areas
- Designate paint and concrete washout areas
- Establish proper equipment/vehicle fueling and maintenance practices
- Control equipment/vehicle washing and allowable non-stormwater discharges
- Develop a spill prevention and response plan

Based on the forgoing, construction impacts associated with construction of new and expanded stormwater infrastructure such as grading, earthmoving, equipment access and staging would be **less than significant**.

Operation

Operational impacts related to stormwater are discussed at length in **Section 5.8, Hydrology and Water Quality**.

D. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed

And

E. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments

As a result of the Project type, Project construction and operation would not significantly alter water and recycled water use or wastewater generation compared to existing conditions. Project operation would not require the regular use of potable or non-potable water, and thus would not increase water demand or generate wastewater at levels that would exceed the capacity of the DSRSD. As described above, the Project would include extension of existing utilities in Dublin eastward, to support future development of planned land uses, as outlined in Dublin's General Plan. Future development along the roadway would be responsible for conducting capacity analysis, ensuring consistency with the UWMP, and any other applicable requirements. Given the above, this impact would be **less than significant**.

F. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs

And

G. Comply with federal, state, and local statutes and regulations related to solid waste

Project Construction would not require a substantial use of a landfill for solid waste disposal, and any need for these services would be temporary. As discussed in **Section 5.7, Hazards and Hazardous Materials**, a limited soil investigation would precede the excavation and removal of soil from the construction footprint. If no residual contamination is identified, excavated soil would be reused on-site for grading to the extent feasible. Soil removed from the site would be transported via Project haul routes identified in **Chapter 3.0, Project Description**, and would be disposed of at an appropriate facility for construction cut/fill material. Typically, projects that require landfill capacity consideration and solid waste disposal include development of new uses such as residences, retail, office, and commercial uses. As a roadway extension project, the Project would not require considerable landfill capacity or solid waste disposal. Operation of the Project would not generate solid waste; as a local arterial roadway through an undeveloped area, municipal waste collection would not be needed. Based on the forgoing, this impact would be **less than significant**.

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and present planned residential; commercial, and infrastructure development projects that could adversely affect existing utility facilities**.** As discussed in **Chapter 4.0, Introduction to Environmental Analysis**, the cumulative analysis considers future land use changes within the region and future roadway improvements expected to occur by the year 2040. These projections are based on Plan Bay Area, General Plans, and individual projects which are considered reasonably foreseeable by the agency with jurisdiction. Future development activities in Dublin, Livermore, and elsewhere around the study area would impact the same utility systems and service providers that would be affected by the Project. Development in unincorporated areas of the County near the Project is generally prohibited, based on the land use designations, and is further restricted by the County's urban growth boundary.

Cumulative Scope

The geographic scope of the cumulative analysis varies by utility, and takes into consideration the overall utility system or district, the land use element of each jurisdiction's General Plan, and reasonably foreseeable projects.

Water

Operation of the Project would not require regular use of potable water. Thus, the Project would have limited potential to contribute to a substantial increase in water demands within the region. The DSRSD has analyzed water demand through 2040-inclusive of past, present, and reasonably foreseeable future projects, and finds that available supplies are adequate to meet projected demands, regardless of Normal Year, Single Dry Year, or Multiple Dry Year conditions.[18,19] Similarly, Zone 7 and Livermore Municipal Water have analyzed water supply and demand through 2035 and do not anticipate any difficulty in meeting Project water demands.[20,21]As water providers within the study area have adequate supply to meet projected demands inclusive of past, present, and reasonably foreseeable future projects, implementation of the past, present and future projects in combination with the Project would not result in a significant cumulative impact associated with water demand.

The Project would include construction of a new waterline to provide utility access for future development within eastern Dublin. Dublin's General Plan and the EDSP allow for future development of residential, office, commercial, and industrial land uses in eastern Dublin. DSRSD takes planned land uses into account when conducting water supply reliability analysis. Future projects would be required to adhere to applicable regulations and would be subject to mitigation from prior EIRs such as the Dublin General Plan EIR, EDSP EIR, and the Fallon Village SEIR. In addition, future projects would be required to prepare an independent evaluation of potable and non-potable water utility impacts. Therefore, no cumulative impact would occur. The Project would not result in a cumulatively considerable contribution to a significant cumulative impact.

Wastewater

Construction and operation of the Project would not generate wastewater. Although the Project would include construction of a new wastewater line to provide utility access for planned development, future projects adjacent to the roadway in Dublin would be responsible for compliance with applicable wastewater treatment standards. Future projects in Dublin along the roadway would be subject to mitigation from prior EIRs such as the Dublin General Plan EIR, EDSP

[18] A normal water year is characterized by average runoff or water allocation levels and patterns. In contrast, a single-dry year is defined as the year with the lowest annual runoff or allocation assessed. Lastly, a multiple-dry year is representative of the lowest average runoff or allocation for a consecutive 5-year period.
[19] Dublin San Ramon Services District, 2016. 2015 Urban Water Management Plan. Available: http://www.dsrsd.com/about-us/library/plans-studies. Accessed: November 27, 2018.
[20] Zone 7, 2016. 2015 Draft Urban Water Management Plan. Available: http://www.zone7water.com/images/pdf_docs/water_supply/2-4-16_draft-uwmp-w-appdcs.pdf. Accessed: November 28, 2018.
[21] Livermore Municipal Water, 2016. 2015 Urban Water Management Plan. Available: http://www.cityoflivermore.net//civicax/filebank/documents/14536. Accessed: November 28, 2018.

EIR, and the Fallon Village SEIR. These planning documents anticipate development of the Project and future uses in eastern Dublin. As described above, no future development is planned on unincorporated County land adjacent to the roadway. The Project would not directly or indirectly influence or effect wastewater in Livermore. Moreover, the Project does not propose a new wastewater line east of Dublin. Therefore, no cumulative impact would occur. The Project would not result in a cumulatively considerable contribution to a significant cumulative impact.

Recycled Water

Construction and operation of the Project would not require regular use of recycled water. The Project would include construction of a new recycled water line to provide utility access for planned development in Dublin, as anticipated in Dublin's General Plan and the EDSP. Future projects adjacent to the roadway in Dublin would be responsible for completing project-specific environmental review under CEQA and obtaining the necessary permits to tie into recycled water lines. Future projects in Dublin along the roadway would also be subject to mitigation from prior EIRs such as the Dublin General Plan EIR, EDSP EIR, and the Fallon Village SEIR. As described above, no future development is planned on unincorporated County land adjacent to the roadway, and recycled water lines would only be extended within Dublin. The Project would not directly or indirectly effect recycled water in Livermore. Therefore, no cumulative impact would occur. The Project would not result in a cumulatively considerable contribution to a significant cumulative impact.

Storm Drainage

The Project would include new stormwater infrastructure to collect stormwater and direct it to a storm drain main located beneath the new roadway. The Project would include stormwater biofiltration facilities within the median, parkway strips, and at the base of embankments and generally inside the operational footprint of the Project in order to collect and treat surface runoff from impervious surfaces prior to discharging to the proposed storm drain line. In doing so, the Project would ensure that no net increase in stormwater would leave the Project site including during a peak storm event, and would avoid cumulative stormwater impacts to downstream waterways at times when capacity is most constrained. The Project would implement standard pollution prevention measures during construction to avoid impacts to sensitive environmental resources. Stormwater facilities would have capacity to service both the Project and past, present, and reasonably foreseeable future projects within the study area.

Future development projects in each jurisdiction (as identified in **Chapter 4.0, Introduction to Environmental Analysis**) would be required to complete project-specific environmental review under CEQA and adhere to the NPDES General Construction Permit, would require preparation of a SWPPP and application of BMPS, and projects in Dublin would be subject to mitigation from prior EIRs such as the Dublin General Plan EIR, EDSP EIR, and the Fallon Village SEIR. Projects in Livermore would be subject to Livermore's General Plan EIR. Therefore, no cumulative impact would occur. The Project would not result in a cumulatively considerable contribution to a significant cumulative impact.

Electricity and Natural Gas

Cumulative impacts associated with electricity and gas is discussed in **Chapter, 5.16, Energy**.

Solid Waste

Construction and operation of the Project would not generate solid waste. Accordingly, the Project would not increase solid waste projections. Solid waste utilities such as the Amador Valley Industries and Livermore Sanitation take planned land uses into account when conducting capacity and demand analysis. This includes the General Plan of each jurisdiction. Future projects in Dublin would be subject to mitigation from prior EIRs such as the Dublin General Plan EIR, EDSP EIR, and the Fallon Village SEIR, and future projects in Livermore would be similarly subject to Livermore's General Plan EIR. Therefore, no cumulative impact would occur. The Project would not result in a cumulatively considerable contribution to a significant cumulative impact.

REFERENCES

Alameda Countywide Clean Water Program, 2017. About the Clean Water Program. Available: https://www.cleanwaterprogram.org/index.php/about-us.html. Accessed: November 13, 2018.

Alameda Countywide Clean Water Program, 2018. C.3 Stormwater Technical Guidance. Available: https://www.cleanwaterprogram.org/images/uploads/C3_Technical_Guidance_v6_Oct_2017_FINAL_Errata_updated_04.20.18.pdf. Accessed: November 13, 2018.

California Department of Water Resources. California Water Code Division 6 Part 2.5 Urban Water Management Planning. Available: https://water.ca.gov/LegacyFiles/urbanwatermanagement/docs/water_code-10610-10656.pdf. Accessed: November 19, 2018.

California Department of Water Resources. *Urban Water Management Plan*. Available: https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans. Accessed: November 19, 2018.

City of Dublin. 1985. *City of Dublin General Plan*. Community Development Department. Dublin, CA. Amended November, 2017.

City of Dublin. 1994. *Eastern Dublin Specific Plan*. Community Development Department. Dublin, CA. Updated September 2016.

Dublin San Ramon Services District, 2016. *Urban Water Management Plan*. Available http://www.dsrsd.com/home/showdocument?id=2890. Accessed: November 19, 2018.

City of Livermore, 2018. Stormwater Management FAQS. Available: http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/faqs/stormwater.htm. Accessed: November 27, 2018.

City of Livermore Municipal Water, 2016. 2015 Urban Water Management Plan.
Available: http://www.cityoflivermore.net//civicax/filebank/documents/14536.
November 28, 2018.

NPDES Permit No. CAS612008, SWRCB Order R2-2015-0049

Pacific Gas and Electric, 2018. Company Profile. Available: https://www.pge.com/en_US/about-pge/company-information/profile/profile.page. Accessed: November 27, 2018.

San Francisco State Regional Water Quality Control Board. Regional Map.
Available: https://www.waterboards.ca.gov/sanfranciscobay/about_us/boundary.html.
Accessed: November 19, 2018.

State Water Resources Control Board. About the Water Board.
Available: https://www.waterboards.ca.gov/about_us/. Accessed: November 19, 2018.

U.S. Energy Information Administration (EIA), 2018. Glossary.
Available: https://www.eia.gov/tools/glossary/index.php?id=finance. Accessed: December 4, 2018.

Zone 7, 2016. 2015 Draft Urban Water Management Plan.
Available: http://www.zone7water.com/images/pdf_docs/water_supply/2-4-16_draft-uwmp-w-appdcs.pdf. Accessed: November 28, 2018.

This Page Intentionally Left Blank

5.16 ENERGY CONSERVATION

INTRODUCTION

This section evaluates effects the Project may have to energy consumption. Information in this section is primarily drawn from the *Energy Report* prepared for the Project (see **Appendix J** of this Draft Environmental Impact Report (EIR)), which analyzed the Project's construction–period and operational energy consumption.

Scoping Issues Addressed

No public or agency comments related to energy conservation were received during the public scoping period for this Draft EIR.

REGULATORY SETTING

Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act serves as the underlying authority for federal energy management goals and requirements. Signed into law in 1978, it has been regularly updated and amended by subsequent laws and regulations. This act is the foundation of most federal energy requirements.

Energy Policy Act of 2005

The Energy Policy Act of 2005 sets equipment energy efficiency standards, seeks to reduce reliance on non-renewable energy resources, and provides incentives to reduce current demand on these resources.

Energy and Independence Security Act of 2007

The Energy and Independence Security Act of 2007 amended the National Energy Conservation Policy Act to reinforce the energy reduction goals for federal agencies, including a mandatory reduction in petroleum consumption. This reduction is achieved in part through increased fuel efficiency requirements for passenger vehicles, commonly referred to as Corporate Average Fuel Economy (or CAFE) standards. Other critical regulatory and voluntary programs under this Act include renewable fuel standards, biofuels infrastructure, and carbon capture and sequestration.[1]

[1] US EPA, 2018. Available at: https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act

State

Assembly Bill 32 and Senate Bill 32

California's major initiative for reducing greenhouse gas (GHG) emissions is outlined in Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires the California Air Resources Board (CARB) to prepare a Scoping Plan that outlines strategies for the State to reduce GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. AB 32 expands the use of renewable energy resources, while improving energy efficiency and mitigating risks associated with climate change. Reduced energy consumption is one important aspect of GHG reduction efforts, particularly as it relates to fossil fuel consumption.

In September 2016, the Governor signed into legislation Senate Bill 32 (SB 32), which builds on AB 32 and requires the state to cut GHG emissions to 40 percent below 1990 levels by 2030. With SB 32, the Legislature also passed Assembly Bill 197 (AB 197), which provides additional direction for updating the Scoping Plan to meet the 2030 GHG reduction target codified in SB 32. CARB published the final 2017 Scoping Plan in November 2017.

2008 California Energy Action Plan Update

The 2008 Energy Action Plan Update provides a status update to the 2005 Energy Action Plan II, which is the state's principal energy planning and policy document. The plan continues the goals of the original Energy Action Plan and describes a coordinated implementation plan for state energy policies. The update identifies specific action areas to ensure that California's energy is adequate, affordable, technologically advanced, and environmentally sound. To reduce the growing energy demand in California, the update includes actions to address energy efficiency, the increased use of renewable sources of power, and reduction of customer demand on electricity during peak periods.

Senate Bill 1078 and 107; Executive Order S-14-08, S-21-09, SB 2X, SB 350, and SB 100

Senate Bill 1078 requires retail sellers of electricity to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 changed the target date to 2010. In November 2008, then-Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Portfolio Standard (RPS) to 33 percent renewable power by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the RPS by signing Executive Order S-21-09, which directs CARB under its AB 32 authority to enact regulations to help the state meet its RPS goal of 33 percent renewable energy by 2020. In April 2011, Governor Brown signed Senate Bill 2X, which legislated the prior Executive Order S-14-08 renewable standard.

Governor Brown also signed Senate Bill 350 (SB 350) in October 2015, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. Senate Bill 100 (SB 100), signed in 2018, took effect in January 2019 and increases the RPS to 60 percent by 2030 and requires all of the state's electricity to come from carbon-free resources by 2045.

Local

City of Dublin

City of Dublin General Plan

Dublin's General Plan includes policies to reduce energy consumption. The Community Design and Sustainability Element guides development within Dublin by encouraging alternative modes of transportation and sustainable design. The Energy Conservation Element promotes energy efficiency and energy conservation at every level. The following policies are relevant to the Project:

Policy 10.9.3.F Encourage alternative modes of transportation by providing priority parking for carpool and alternative energy vehicles, bicycle racks/lockers, showers for employees, and easy access to adjacent regional trails and transit stops.

Policy 13.3.2.B.2 New development projects shall install LED streetlights in compliance with the City's LED light standard.

Eastern Dublin Specific Plan

The Eastern Dublin Specific Plan (EDSP) plans for a multi-modal transportation and circulation system which maximizes transportation efficiency and reduces vehicle miles travelled (VMT). By reducing VMT associated with new development, EDSP development will contribute to energy reductions in the regional transportation network. The following policies and programs are relevant to the Project:

Policy 5-2 Require all development to provide a balanced orientation toward pedestrian, bicycle, and automobile circulation.

Policy 5-17 Establish a bicycle circulation system which helps to serve the need for non-motorized transportation and recreation in eastern Dublin that is consistent with the Dublin Bicycle and Pedestrian Master Plan.

Dublin Climate Action Plan

The Dublin Climate Action Plan codifies Dublin's goal of reducing community-wide GHG emissions by 20 percent below business-as-usual GHG emissions by 2020. The Dublin Climate Action Plan employs the Bay Area Air Quality Management District's GHG efficiency threshold of 6.6 metric tons of carbon dioxide equivalent (MT CO_2E)[2] per service population per year as evidence of Dublin's intent to meet AB 32 standards to reduce statewide GHG emissions to 1990 levels by 2020. The Dublin Climate Action Plan includes GHG emission reduction policies and measures for transportation and land use. The Dublin Climate Action Plan also features guidelines for monitoring and verification of the Dublin Climate Action Plan in order to achieve the GHG reduction target. The following communitywide measures are relevant to the Project:

[2] Carbon dioxide equivalency is a unit used to describe the global warming potential of a given mixture and amount of greenhouse gas. The measure of MT CO2 provides the equivalent amount of CO2 that would have the same global warming potential when measured over a specified timescale, generally 100 years.

Measure A.1.5 The goals of the streetscape master plan are to better coordinate streetscape design throughout the community, clearly delineate public and private responsibilities for improving aesthetics, and provide a mechanism for promoting capital improvement projects with built-in streetscape improvements. Additionally, the Zoning Ordinance has requirements for planting trees in parking lots (minimum of one tree for every four parking spaces).

Measure A.1.6 The multi-modal map is a comprehensive tool to relay transportation opportunities within a specific location. The function of the multi-modal map is to show the various methods of transportation within the City, including pedestrian, vehicle, and bicycle trips as well as connections to other cities.

Measure A.3.1 The Construction and Debris Ordinance requires 100% of asphalt and concrete debris be recycled during demolition and construction. In addition, a minimum of 50% of all other materials must be recycled.

Alameda County

Alameda County General Plan, Conservation Element

The Conservation Element of the Alameda County General Plan addresses energy conservation and general efforts to conserve natural resources such as water and air quality. The following policies and programs are relevant to the Project:

Goal E To insure measures which conserve energy.

Objective E4 To investigate and implement measures to conserve energy.

Alameda County General Plan, Community Climate Action Plan

The County's Community Climate Action Plan was approved and adopted as an element of the Alameda County General Plan in 2014. The Community Climate Action Plan aims to reduce community-wide GHG emissions generated in the unincorporated areas of the County. The following transportation strategy relevant to the Project:

T-2 Develop appropriate bicycle infrastructure for high traffic intersections and corridors

City of Livermore

City of Livermore General Plan

Energy Conservation is addressed in the Open Space and Conservation Element of the Livermore General Plan. The General Plan focuses on energy conservation through a reduction in electricity usage and VMT reductions, and by encouraging the use and development of alternative sources of energy. The following goals, objectives, and policies are relevant to the Project:

Goal OSC-7	Minimize Livermore's energy consumption
Objective OSC-7.1	Promote a variety of approaches to energy conservation in the public and private realms

Livermore Climate Action Plan

The Livermore Climate Action Plan was adopted in 2012 and outlines strategies and activities Livermore will take to reduce GHG emissions produced within their jurisdiction. The Livermore Climate Action Plan implements policies from the Climate Change Element of Livermore's General Plan, with a target of reducing GHG emissions to 15 percent below 2008 levels by 2020. The Livermore Climate Action Plan also supports the state's effort to reduce GHG emissions to California's 1990 levels by 2020.

EXISTING CONDITIONS

This section presents information on energy provision and supply in the study area. The study area for this topic includes the Project site, as well as the jurisdictions of Dublin and Livermore, and the service areas of energy providers.

Energy Use and Supply

In 2016, total energy use per person in California was 199 million British thermal units (BTU).[3] This is one of the lowest energy consumption rates per-capita in the nation. In 2016, California's total energy supply was approximately 2,431 trillion BTU, which represents 2.9 percent of the national supply.[4] Electricity and natural gas in California are generally consumed by stationary uses such as residences, commercial, and industrial facilities, whereas petroleum consumption is generally accounted for transportation-related energy use, which is typical of the nation overall.[5] Of California's total energy usage, the transportation sector represents 39.8 percent of the total energy consumed in the state. Nationally, energy consumed in transportation accounts for 28.6 percent of all energy consumption. In 2016, Californians consumed 15.1 billion gallons of gasoline and three billion gallons of diesel fuel.[6]

According to the 2016 American Community Survey, there are approximately 54,523 residents in the Dublin and 80,968 residents in Livermore. This would equate to approximately 26,962 billion BTU's of energy consumption per year in the Dublin/Livermore area.[7] On-road automotive fuel and

[3] http://www.eia.gov/state/rankings/?sid=CA#series/12

[4] EIA (US Energy Information Administration), 2018. California Total Energy Production. Available: California Total Energy Production. Accessed: December 5, 2018.

[5] EIA (US Energy Information Administration), 2018. California State Profile and Energy Estimates. Available: http://www.eia.gov/state/data.cfm?sid=CA#ConsumptionExpenditures. and https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_te.html&sid=US&sid=CA, Accessed: December 5, 2018.

[6] California State Board of Equalization (BOE), 2018a. Net Taxable Gasoline Gallons. Available: http://www.cdtfa.ca.gov/taxes-and-fees/MVF_10_Year_Report.pdf. Accessed: December 5, 2018.

[7] 199 MBTU *135,491 = 26,962,709 billion BTU

heavy-duty diesel fuel consumption throughout the County, including municipalities, has remained steady since 2009.[8]

Energy Providers

Pacific Gas and Electric (PG&E)'s distribution system has historically provided electricity directly to residential and commercial consumers within the study area. Effective June 1 2018, commercial, industrial, and public recipients of PG&E service began receiving electricity from East Bay Clean Energy (EBCE). As of November 2018, residential customers have begun receiving services from EBCE and are able to opt out and continue to receive service from PG&E. EBCE offers three energy options: Bright Choice, Brilliant 100, and Renewable 100.

The PG&E 2017 power mix is as follows:[9]

- 20 percent natural gas
- 27 percent nuclear
- 33 percent renewables
- 18 percent large hydroelectric
- 2 percent unspecified

The EBCE power mix for the three energy options are as follows:[10]

- Bright Choice: at least 38 percent renewable and an additional 47 percent carbon-free
- Brilliant 100: at least 40 percent renewable and an additional 60 percent carbon-free
- Renewable 100: is 100 percent renewable and carbon-free

Natural gas is a fossil fuel which is composed of decomposed plant and animal material. PG&E is the regional retailer for natural gas, which is delivered directly to residential and commercial consumers via their network of transmission and distribution pipelines. Gasoline and diesel fuel for vehicle use is provided at local gas stations throughout the study area.

[8] California State Board of Equalization (BOE), 2018b. Taxable Diesel Gallons 10-year Report. Available: http://www.cdtfa.ca.gov/taxes-and-fees/Diesel_10_Year_Report.pdf. Accessed: December 5, 2018.
[9] PG&E, 2018. Exploring Clean Energy Solutions. Available: https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page. Accessed: November 29, 2018.
[10] EBCE, 2018. Power Mix. Available: https://ebce.org/power-mix/. Accessed: November 29, 2018.

IMPACTS AND MITIGATION MEASURES

Significance Criteria

Based upon the criteria derived from Appendix G of the State California Environmental Quality Act (CEQA) Guidelines, the Project would result in a significant impact related to energy conservation if it would:

A. Result in the inefficient, wasteful or unnecessary consumption of energy during project construction or operation

Methodology

This section analyzes the Project's direct energy consumption[11] and indirect energy consumption[12] from three energy sources: electricity, natural gas, and transportation fuel. Fuel includes operational vehicle trips as well as the fuel necessary for Project construction.

Traffic information used in this energy analysis was provided in the *Transportation Impact Analysis* (TIA) prepared by Kittelson & Associates in August 2018 (see **Appendix D** of this Draft EIR). For operational analysis, petroleum fuel consumption factors were provided by the most current mobile source emissions inventory modeling available (EMFAC2017) and Caltrans guidelines were used in tandem with peak and off-peak traffic data for existing (2017) and cumulative (2040) traffic volumes to calculate energy consumption.[13] To capture the net increase in energy consumption attributable to the Project, existing conditions (2017) are compared with projected energy consumption in 2040 without the Project (2040 No Project) and against 2040 energy consumption with Project implementation (2040 Plus Project). Consumption factors used for this analysis are listed in the *Energy Report* for the Project (see **Appendix J** of this Draft EIR).

Energy consumption required for construction was estimated using the input-output method. This method uses construction cost to estimate energy consumption by multiplying the cost of the Project by a million British thermal units (MBTU)/1977 ratio provided by Caltrans. This ratio is based on the cost of construction in 1977. In order to accurately apply this ratio, the Caltrans construction cost index[14] was used to relate current construction cost to 1977 construction cost. Other sources of indirect energy consumption were determined by multiplying the roadway length by a MBTU/mile ratio which was provided by Caltrans.

[11] Direct Energy is defined as the amount of fuel consumed by vehicles over a period of time. Factors that influence fuel consumption include but are not limited to; speed, grade, intersection delay time, traffic density and changing fuel economy due to newer more fuel efficient vehicles on the road.
[12] Indirect energy is defined as the remaining energy consumed to construct, operate and maintain the Project. Indirect energy also includes the manufacture and maintenance of vehicles using the roadway.
[13] Energy and Transportation Systems, Caltrans Transportation Laboratory, Sacramento, CA, July 1983
[14] California Department of Transportation, 2014. Price Index for Selected Highway Construction Items. Available: http://www.dot.ca.gov/hq/esc/oe/cost_index/historical_reports/CCI_1QTR_2014.pdf. Accessed" November 29, 2018.

Impact Analysis

No Impact Summary

There are no "no impact" determinations for this topic.

Impacts of the Project

A. Result in the inefficient, wasteful or unnecessary consumption of energy during project construction or operation

Construction

Construction of the Project would require electricity usage, diesel fuel consumption from on-road hauling trips and off-road construction diesel equipment, and gasoline consumption from on-road work commute and vendor trips. **Table 5.16-1** presents the existing and projected energy consumption for Project construction and compares this energy consumption to baseline energy consumption that would occur in the Dublin and Livermore area without the Project. This allows for a contextualized comparison of construction-period energy consumption needed for the Project. Dublin and Livermore energy consumption was used without including unincorporated areas of the County or the County as a whole, as including the entirety of the County would dilute the Project's energy consumption, potentially underrepresenting the Project's effect, while comparing the Project to unincorporated areas that are dedicated to low-intensity uses such as resource management would not be an accurate context for Project energy consumption.

Table 5.16-1 Projected Construction Energy Consumption

Description	Existing (billion BTU)	2040 No Project (billion BTU)	2040 Plus Project (billion BTU)
Vehicles Maintenance	1,977	2,141	2,141
Road Maintenance	40	40	40
Road Construction	--	--	308
Vehicle Manufacturing	1,367	2,139	2,139
Total Indirect Energy	3,384	4,320	4,628

Source: Illingworth & Rodkin, 2018

Although construction of the Project would require the consumption of 308 billion BTU of energy, the Project's non-recoverable use of energy associated with construction would represent approximately 1 percent of the Dublin and Livermore area's annual indirect energy demand.[15] Construction of the Project would not consume a greater amount of energy than other roadway projects of a similar type and size, as Project construction methods, materials, and duration is typical and comparable with other roadway projects. In accordance with the goals and intent of

[15] Annual Dublin/Livermore area energy consumption divided by the Project's construction period energy consumption: 29,640,055,000,000 MBTU's ÷ 307,694,691,935 MBTU's = 1 percent

Dublin's Green Building Practices, appropriate measures to incorporate energy efficiency measures during construction, such as energy-efficient construction equipment, would be determined by Dublin and included in the construction bid package. Based on discussions between Dublin and the County to-date, it is anticipated that energy efficiency for construction equipment in County areas would be coordinated. Based on the forgoing, construction of the Project would not result in the inefficient, wasteful or unnecessary consumption of energy. This impact would be **less than significant**.

Operation

Once operational, electricity needed to power the Project would be generally limited to traffic signals and street lighting, and would be adequately supplied by the existing PG&E and EBCE electric power mix, as described in more detail in **Section 5.15, Utilities**. As described in **Chapter 3.0, Project Description**, the Project would include high-efficiency streetlights in Dublin. The Project would help reduce wasteful energy consumption by improving traffic operations in the study area and contributing to an overall reduction in energy consumption through locally reduced VMT.

Table 5.16-2 compares future energy consumption on the regional roadway network in 2025 (the Project opening year) and 2040 (cumulative year) against existing conditions (2017). Overall, energy consumption is projected to decrease over time, as fuel efficiency improves. As described in **Chapter 7.0, Other CEQA Considerations**, the Project would result in minimal change to VMT at a regional level. Given the relatively small size of the Project (1.5 miles in length) within the overall network and the type of project (a local roadway), it is understandable that the Project would not result in notable changes to regional VMT. Taking into consideration the expected margin of error from the Countywide model used to predict VMT and expert professional judgement, it is determined that the VMT reductions and increases of 0.0-0.1 percent are negligible and would not represent an increase in VMT as a result of the Project. Therefore, the minor decrease in energy consumption shown in the 2025 Plus Project scenario (0.01 percent) and minor increase in the 2040 Plus Project scenario (0.02 percent) resulting from this shift in VMT are considered to be negligible.

Travel forecasts for the Project show a local decrease in VMT with implementation of the Project in 2040. The local decrease in VMT results from shorter trips between Dublin and Livermore, when local travelers can use the Project roadway extension instead of completing a longer trip on Interstate 580 (I-580) or local/frontage roads south of I-580. This local VMT reduction equates to a decrease of approximately 1.2 billion BTUs per day and 436 billion BTUs annually. Therefore, operation of the Project would not result in the inefficient, wasteful or unnecessary consumption of energy, and this impact would be **less than significant.**

Table 5.16-2 Annual Projected Direct Energy Consumption - Regional

Energy Consumption Type	Annual VMT				
	Existing 2017	**2025 No Project**	**2040 No Project**	**2025 Plus Project**	**2040 Plus Project**
	1,197,741,358	1,349,057,818	1,528,944,016	1,348,999,732	1,529,387,024
Percentage of Travel					
Gas Travel	94%	90%	90%	90%	90%
Diesel Travel	6%	7%	7%	7%	7%
Electric Travel	0%	3%	3%	3%	3%
Fuel Efficiency (gal/mi, kW/mi)					
Gas Travel	21.5	29.1	36.6	29.1	36.6
Diesel Travel	7.8	10.6	13.1	10.6	13.1
Electric Travel	3.3	3.3	3.3	3.3	3.3
Energy Usage (MBTU)					
Gas Travel	6,270,877,784	5,038,561,125	4,528,133,577	5,038,344,182	4,529,445,594
Diesel Travel	1,132,765,714	1,089,512,157	1,001,364,985	1,089,465,247	1,001,655,129
Electric Travel		38,835,098	44,013,451	38,833,426	44,026,204
Total	**7,403,643,498**	**6,166,908,379**	**5,573,512,014**	**6,166,642,855**	**5,575,126,927**
Total over 2017		(1,236,735,119)	(1,830,131,485)	(1,237,000,644)	(1,828,516,571)
Percentage Change over Existing		-16.70%	-24.72%	-16.71%	-24.70%

Source: Illingworth & Rodkin, 2018
Note: 1 gallon of gasoline = 120,476 Btu
1 gallon of diesel fuel = 137,452 Btu
30 kW·h/100 mi = 3.3 mi/kW
1 kW = 3,412 Btu

CUMULATIVE IMPACTS

Cumulative impacts arise due to the linking of impacts from past, present, and foreseeable future projects in the region. Other projects in the area include past and present planned residential, commercial, and infrastructure development projects (see **Chapter 4.0, Introduction to Environmental Analysis**). The cumulative year is 2040, and includes growth projections from Plan Bay Area and General Plans, in addition to specific projects determined to be reasonably foreseeable by each jurisdiction. Future development activities in Dublin, Livermore, and elsewhere around the study area would impact the same energy resources that would be affected by the Project.

As described above, the Project would extend Dublin Boulevard eastward and would provide physical access for future development of planned land uses in Dublin, as outlined in Dublin's General Plan. The Project involves no direct use of natural resources beyond fuel and energy needed during construction activities. Electricity required to power streetlights and intersection traffic signals during Project operation would be consistent with typical energy consumption for roadway projects. The energy consumed through vehicle fuel during Project operation would be minimal, as generally the Project would not generate new trips but would provide a local alternative route, locally reducing VMT and related energy consumption. When balancing energy used during construction and operation against energy saved by relieving traffic congestion and other transportation efficiencies, the Project would not result in the wasteful use of energy.

As discussed in **Chapter 3.0, Project Description**, and **Chapter 7.0, Other CEQA Considerations**, planned population growth and the resulting increases in energy consumption in each jurisdiction has been fully evaluated in the applicable CEQA clearances for applicable General Plans and individual development projects. The Project would indirectly support development of planned uses and associated planned growth in eastern Dublin, consistent with local and regional planning documents, and would not indirectly result in wasteful or inefficient energy consumption in any jurisdiction. Future developments in Dublin, the County, and Livermore would be subject to mitigation from prior EIRs such as the Dublin General Plan EIR, EDSP EIR, Fallon Village Supplemental EIR, Alameda County General Plan, and the City of Livermore General Plan. Future development in Livermore would be subject to General Plan consistency and mitigation from the General Plan EIR. Therefore, no cumulative impact would occur. The Project would result in a less than cumulatively considerable contribution to any significant cumulative impact.

REFERENCES

Alameda County, 2014. *Community Climate Action Plan*.
Available: http://www.ci.dublin.ca.us/DocumentCenter/View/1049/Dublin-Climate-Action-Plan?bidId=. Accessed: December 5, 2018.

California Air Resources Board (CARB), 2018. Assembly Bill 32 Overview.
Available: https://www.arb.ca.gov/cc/ab32/ab32.htm. December 5, 2018.

California State Board of Equalization (BOE), 2018a. Net Taxable Gasoline Gallons. Available: http://www.cdtfa.ca.gov/taxes-and-fees/MVF_10_Year_Report.pdf. Accessed: December 5, 2018.

California State Board of Equalization (BOE), 2018b. Taxable Diesel Gallons 10-year Report.
Available: http://www.cdtfa.ca.gov/taxes-and-fees/Diesel_10_Year_Report.pdf. Accessed: December 5, 2018.

California Department of Transportation, 2014. Price Index for Selected Highway Construction Items.
Available: http://www.dot.ca.gov/hq/esc/oe/cost_index/historical_reports/CCI_1QTR_2014.pdf. Accessed: November 29, 2018.

City of Dublin, 2010. *City of Dublin Climate Action Plan*. Available: http://www.ci.dublin.ca.us/DocumentCenter/View/1049/Dublin-Climate-Action-Plan?bidId=. Accessed: December 5, 2018.

City of Livermore, 2012. *Livermore Climate Action Plan*. Available: http://www.cityoflivermore.net/civicax/filebank/documents/9789/. Accessed: December 5, 2018.

EBCE, 2018. Power Mix. Available: https://ebce.org/power-mix/. Accessed: November 29, 2018.

EIA (US Energy Information Administration), 2018. California State Profile and Energy Estimates. Available: http://www.eia.gov/state/data.cfm?sid=CA#ConsumptionExpenditures and https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_te.html&sid=US&sid=CA. Accessed: December 5, 2018.

EIA (US Energy Information Administration), 2018. California Total Energy Production. Available: https://www.eia.gov/state/data.php?sid=CA#SupplyDistribution, 2018. Accessed: December 5, 2018.

PG&E, 2018. Exploring Clean Energy Solutions. Available: https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page. November 29, 2018.

United State Environmental Protection Agency, 2018. Greenhouse Gases at EPA. Available: https://www.epa.gov/greeningepa/greenhouse-gases-epa. Accessed: December 4, 2018.

6.0 ALTERNATIVES

The California Environmental Quality Act (CEQA) and the CEQA Guidelines require an Environmental Impact Report (EIR) to:

> "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126.6(a))."

One of the alternatives that must be analyzed is the "No Project" alternative. The No Project analysis must discuss the existing conditions at the time the Notice of Preparation (NOP) was published. As described in CEQA Guidelines Section 15126.6(e)(2), the No Project Alternative should describe what would be reasonably expected to occur in the foreseeable future if the project were not approved.

As outlined in CEQA Guidelines Section 15126.6(e)(3), the discussion of the No Project alternative generally proceeds along one of two lines. When revisions to an existing land use or regulatory plan are proposed, the No Project alternative should describe the continuation of the existing land use plan. For projects that would not include revisions to a land use plan, the No Project alternative would be the circumstance under which the project would not proceed. This is generally used for projects for which the No Project alternative is effectively a "no build" alternative, where disapproval of the project would maintain existing conditions on the project site.

An examination of the "no build" type alternative is relevant in this case. It is informative to compare the Project to a No Build Alternative under which the Project site would remain as-is; effectively, a no build alternative. This allows a clear comparison between implementation of the Project and a No Project scenario. Accordingly, this section analyzes one "No Project" alternative.

The Project would require an amendment to the City of Dublin's General Plan. The amendment would update the General Plan to reflect the proposed lane configuration for the Project. Livermore and County may update their General Plans, as appropriate, to reflect the proposed lane configuration of the Project. While the Project would require a minor amendment to Dublin's General Plan, the Project would not include changes to land use or the amount or type of planned development in eastern Dublin. The net change between implementation of the General Plan as approved and implementation of the General Plan with the proposed amendment to clarify number of lanes is negligible from a land use planning perspective. Therefore, a No Project alternative in which the General Plan amendment does not move forward would not be notably different than the Project.

This chapter evaluates a second alternative: Aerial Structure – Alternative 2. Alternative 2 includes a project similar to the Project evaluated in this Draft EIR, but an elevated roadway structure would be implemented in lieu of an at-grade roadway.

Table 6-3 at the end of this chapter presents a comparative summary of the impacts for the Project and each alternative. The CEQA Guidelines require an environmentally superior alternative be identified when compared to the Project and other alternatives. It states that if the alternative with the least environmental impact is determined to be a "No Project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. In addition to comparing the environmental impacts associated with each alternative, this section also analyzes whether and to what extent each alternative would meet the Project objectives. Project objectives are provided below in Section 6.2 and in **Chapter 3.0, Project Description**.

According to the CEQA Guidelines, if mitigation measures or a feasible project alternative that would meet most of the basic project objectives would substantially lessen the significant environmental effects of a proposed project, then the Lead Agency should not approve the project unless it determines that specific technological, economic, social, or other considerations make the mitigation measures and/or the project alternative infeasible (CEQA Guidelines Section 15091(a)(3)). The analysis in Section 6.5 below describes the potential impacts and mitigation measures required for each alternative and provides a comparison against the Project's impacts and required mitigation.

The EIR must also identify alternatives that were considered by the Lead Agency and rejected as infeasible during the scoping process. The EIR should briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126.6(c)). Therefore, this Chapter briefly explains the reasons why certain alternatives were rejected as infeasible (see Section 6.4).

6.1 PROJECT OBJECTIVES AND ENVIRONMENTAL IMPACTS

OBJECTIVES

The Project would improve east-west local roadway connectivity between the Dublin, the County, and Livermore, and improve mobility, multimodal access, and efficiency for all roadway users. The Project would also support an integrated corridor management strategy.

Thus, the objectives for the Project are as follows:

- Eliminate a gap in local roadway network connectivity between the cities of Dublin and Livermore, and improve interconnectivity between Dublin and Livermore priority development areas (PDAs)
- Establish transportation facilities and other public infrastructure to serve planned development in the Dublin and Livermore General Plans, the Eastern Dublin Specific Plan (EDSP), and Plan Bay Area
- Reduce demand on the local highway system by providing local access to existing and planned land uses, including residential, commercial, industrial, and business uses, and local destinations on an alternate local route that is complementary to Interstate 580 (I-580)
- Reduce local trip lengths in Dublin and between Dublin and Livermore by diverting localized inter-city trips from I-580

- Provide complete streets and mutimodal access between Dublin and Livermore, particularly for key public facilities such as Las Positas College, consistent with the requirements of Senate Bill (SB) 375 and regional complete streets policies on multimodal roadways and sustainable transportation
- Indirectly relieve congestion on I-580 by providing a completed local route on the north side of I-580 between west of Interstate 680 (I-680) in Dublin to State Route 84 (SR-84) in Livermore

POTENTIALLY SIGNIFICANT IMPACTS

Table 1-2 in **Chapter 1.0, Executive Summary**, provides a summary of potentially significant impacts of the Project and mitigation measures that would reduce significant impacts. Environmental topic areas that would be impacted by the Project include aesthetics, air quality, biological resources, cultural resources, geology and soils, hazardous materials, noise, public services, and traffic. With the exception of some traffic impacts discussed below under Significant Unavoidable Impacts, all other potentially significant impacts would be reduced to a less-than-significant level with mitigation.

Biological resources and cultural resources are two of the key environmental topic areas that would be affected by the Project. The Project site and surrounding area include habitat for protected wildlife species and protected plant species. Implementation of the Project would result in temporary direct impacts to protected species, permanent direct impacts to habitat areas, and permanent indirect impacts to habitat areas. These impacts would result from Project construction and the permanent changes to the Project site. As the Project would include an at-grade roadway, existing habitat areas would be converted to a roadway and ancillary facilities. Additionally, the existing habitat area between the rolling hills to the north and I-580 to the south would be segmented by the Project. A detailed discussion of these impacts is provided in **Section 5.3, Biological Resources** of this Draft EIR. Mitigation presented in this Draft EIR would reduce these impacts to less than significant.

The Project site includes a portion of a historic-period archeological resource. This resource is near the existing intersection of Dublin Boulevard and Fallon Road. Project implementation would require excavation and the construction of a roadway through a portion of this resource. Additionally, based on the known paleontological sensitivity of the study area, Project construction could encounter previously unidentified paleontological resources when excavation and grading work takes place. A detailed discussion of these impacts is provided in **Section 5.4, Cultural and Tribal Cultural Resources** of this Draft EIR. Mitigation presented in this Draft EIR would reduce these impacts to less than significant.

SIGNIFICANT UNAVOIDABLE IMPACTS

CEQA Guidelines Section 15126.2(b) requires that an EIR disclose all significant impacts, including those where no feasible mitigation measures exist to reduce these impacts to a less-than-significant level. Accordingly, this Draft EIR presents mitigation measures to avoid potentially significant impacts. However, implementation of the Project would result in significant and unavoidable impacts related to traffic, as described below.

Transportation and Traffic

The Project would result in the following significant and unavoidable impacts related to traffic:

- **Existing (2017) Plus Project Traffic Conditions**: The change in travel patterns resulting from the Project would result in unacceptable traffic operations at the intersection of Airway Boulevard and North Canyons Parkway in Livermore (labeled intersection #8 in the traffic analysis) during the AM peak hour when compared to existing conditions. With implementation of the Project, this intersection would experience significant growth to the northbound left turn with the demand exceeding 800 vehicles per hour during the AM peak hour. The existing lane configuration of a single shared left and through lane for the northbound approach is insufficient to handle this demand. The Project would cause the level of service (LOS) at this intersection to degrade from LOS D to LOS F in the AM peak hour. An intersection operation of LOS F would be below the LOS E standard for this intersection. This would be a significant impact. Implementation of **Mitigation Measure TRAF-3** would improve the operation of this intersection to LOS D during the AM peak hour. However, because the intersection is in Livermore, outside of Dublin's jurisdiction, Dublin as the Lead Agency cannot guarantee the implementation and timing of the mitigation measure. Therefore, this impact would be significant and unavoidable.

- **2025 Plus Project Traffic Conditions:** The Project would result in unacceptable operations at the intersection of Airway Boulevard and North Canyons Parkway (#8) in Livermore during the AM peak hour under 2025 Plus Project conditions. As one of the primary access points for the Project, this intersection would experience significant increased demand in the northbound left turn, with the demand exceeding 800 vehicles per hour during the AM peak hour. The existing lane configuration is insufficient to handle this demand. This would be a significant impact. Implementation of **Mitigation Measure TRAF-3** would improve the operation of this intersection to LOS D during the AM peak hour. However, because the intersection is in Livermore, outside of Dublin's jurisdiction, Dublin as the Lead Agency cannot guarantee the implementation and timing of the mitigation measure. Therefore, this impact would be significant and unavoidable.

- **Cumulative (2040 Plus Project) Traffic Conditions:** The Project would result in unacceptable operations at the intersection of Airway Boulevard and North Canyons Parkway in Livermore (#8) during the AM and PM peak hours under the cumulative (2040 Plus Project) condition. Implementation of **Mitigation Measure TRAF-3** would improve the operation of this intersection to LOS C during the AM peak hour and LOS D during the PM

peak hour, reducing this impact to less than significant. However, because the intersection is in Livermore, outside of Dublin's jurisdiction, Dublin as the Lead Agency cannot guarantee the implementation and timing of the mitigation measure. Therefore, this impact would be significant and unavoidable.

- **Cumulative (2040 Plus Project) Queuing Impact:** The Project would cause the westbound queue at Airway Boulevard and North Canyons Parkway (#8) in Livermore to extend beyond the capacity of the turn pocket by 29 feet during the PM peak hour under the cumulative (2040 Plus Project) condition. The queue length modeled at this intersection for 2040 No Project would exceeds the available storage, and implementation of the Project would further extend the queue length. This represents a significant impact. Implementation of **Mitigation Measure TRAF-3** would reduce this impact to a less-than-significant level. However, because the intersection is in Livermore, outside of Dublin's jurisdiction, Dublin as the Lead Agency cannot guarantee the implementation and timing of the mitigation measure. Therefore, this impact would be significant and unavoidable.

- **Cumulative (2040 Plus Project) Queuing Impact:** The Project would cause the westbound right turn queue at the intersection of Isabel Avenue and I-580 Westbound off-ramps (labeled intersection #11 in the traffic analysis) to exceed the available turn pocket storage by 58 feet during the AM peak hour under cumulative conditions. This represents a significant impact. Implementation of **Mitigation Measure TRAF-4** would reduce this impact to a less-than-significant level. However, this intersection is under the jurisdiction of Caltrans and outside of Dublin's jurisdiction. Therefore, Dublin as the Lead Agency cannot guarantee the implementation and timing of the mitigation measure and this impact would be significant and unavoidable.

6.2 ALTERNATIVES TO THE PROJECT

Based on the goal of reducing significant impacts, as listed above, two project alternatives are evaluated in this Draft EIR: a "No Project" alternative and an Aerial Structure – Alternative 2. **Table 6-1** provides a summary of key features of the Project and each alternative. Further details regarding each alternative are provided below. The two alternatives to the Project analyzed in this section are as follows:

- **No Project Alternative 1**: The existing conditions at the Project site would remain unchanged.
- **Aerial Structure – Alternative 2**: This alternative contemplates reducing the Project's permanent physical footprint by implementing an elevated, aerial roadway instead of an at-grade roadway. The roadway would connect Dublin Boulevard to North Canyons Parkway along the same alignment as the Project, or a very similar alignment.

Table 6-1 Comparison of Project Alternatives

Alternative	New Roadway (Y/N)	New At-Grade Roadway (Y/N)	Transit Facilities (Y/N)	Bicycle and Pedestrian Facilities (Y/N)	Connection to Livermore (Y/N)	Right-of-Way Acquisitions	Utility Extensions
No Project 1	No	N/A	No	No	No	No	No
Aerial Structure – Alternative 2	Yes	No	Yes	Yes	Yes	Yes	Yes
Project (Dublin Boulevard Extension)	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Circlepoint, 2019

NO PROJECT ALTERNATIVE 1

Under No Project Alternative 1, the existing conditions at the Project site would remain. The Project site and surrounding area currently consists of primarily undeveloped grazing ranchland and open space, with intermittent agricultural structures and outbuildings. Improvements to the agricultural lands generally consist of private paved and unpaved roads used to access private property, fences, barns, corrals, wells, water tanks, and various outbuildings. These existing uses would remain in place, and no construction activities would occur at the Project site under No Project Alternative 1.

AERIAL STRUCTURE – ALTERNATIVE 2

Alternative 2 has been developed to lessen impacts associated with biological resources and cultural resources. Potential impacts to biological and cultural resources would primarily result from large areas of grading required for an at-grade roadway, direct impacts to habitat areas from the permanent at-grade roadway, and indirect impacts to habitat from the placement of an at-grade roadway within a large habitat area (which would restrict the north-south movement of protected wildlife species).

Alternative 2 would include an elevated roadway extension generally following the same alignment of the Project. Alternative 2 would use an aerial structure and piers similar to overpasses and roadway bridges to traverse the area between Fallon Road and Doolan Road. Alternative 2 would not connect to Croak Road. Alternative 2 would include pedestrian and bicycle facilities similar to those described for the Project. Proposed utility extensions and hydromodification controls would need to be contained within the aerial structure.

6.3 ATTAINMENT OF PROJECT OBJECTIVES

The following analysis describes the extent to which the alternatives meet or do not meet the Project objectives as described in **Chapter 3.0, Project Description**, and discussed above in Section 6.1.

NO PROJECT ALTERNATIVE 1

Under this alternative, the existing gap in the local roadway network between Dublin and Livermore would remain. Interconnectivity between PDAs in Dublin and Livermore would not be improved. No new transportation facilities or other public infrastructure would be implemented to support planned development in Dublin, or indirectly support implementation of Livermore's General Plan. Local trips between Dublin and Livermore would continue to be completed via a longer-than-necessary route utilizing I-580. This would continue to place demand on this segment of I-580, which is heavily congested. No multimodal access between Dublin and Livermore would be added. Based on the above, No Project Alternative 1 would not fulfil any of the Project objectives.

AERIAL STRUCTURE – ALTERNATIVE 2

Alternative 2 would eliminate the gap in the local roadway network between Dublin and Livermore, and would improve connectivity to PDAs in Dublin and Livermore. Alternative 2 would provide local access between Dublin and Livermore as an alternative to I-580. This would indirectly reduce demand along this congested segment of the highway. This in turn would allow for a shorter, more direct route between the two municipalities. Alternative 2 would provide multimodal access between Dublin and Livermore through the addition of pedestrian and bicycle access, similar to the Project. Therefore, Alternative 2 would fulfil the Project objectives of eliminating a gap in the local roadway network, improving connectivity between PDAs, indirectly reducing demand on the local highway system, reducing local trip lengths, and providing multimodal access between Dublin and Livermore.

An aerial structure would provide the access described above, but would not provide convenient transportation or utility access to developable areas of eastern Dublin. With an aerial structure, future ground-level development along the roadway would be confronted with engineering feasibility challenges when attempting to connect to the roadway and utility lines. Alternative 2 would indirectly place limitations on how and to what extent future land uses could be accessed in eastern Dublin, as designing and constructing access points from the aerial structure would require a larger footprint for future projects than connecting to an at-grade roadway. This would affect the amount of developable land in eastern Dublin and could result in some sites being less accessible, or require the addition of secondary roadways to access developable areas. In this way, Alternative 2 would not meet the objective of establishing transportation facilities and other public infrastructure to serve planned development in eastern Dublin. Furthermore, an aerial structure unconnected to Croak Road would not support local bicycle, pedestrian, and automobile connectivity along Croak Road.

6.4 ALTERNATIVES CONSIDERED AND REJECTED

CEQA Guidelines Section 15126.6(c) requires that an EIR identify any alternatives that were considered by the Lead Agency but rejected as infeasible. The EIR must briefly explain the reasons underlying the Lead Agency's determination to reject an alternative. The following factors may be used to eliminate alternatives from further consideration:

(i) Failure to meet most of the basic project objectives
(ii) Infeasibility
(iii) Inability to avoid significant environmental impacts

As stated in Section 15126.6(f)(1) of the Guidelines, factors that may be considered when a lead agency is assessing the feasibility of an alternative include:

> "Site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent)."

The Project has been developed to meet the previously identified objectives while avoiding or minimizing environmental impacts. The Project alignment was chosen based on the multiple planning efforts listed in **Chapter 3.0, Project Description**, which considered site constraints such as sensitive biological habitats and the existing grade and topography of the area. The Project was developed with a goal to provide developable parcels of a reasonable size. The selected roadway alignment, and the proposal to connect Dublin Boulevard to North Canyons Parkway, is supported by the General Plan documents of Dublin, the County, and Livermore.

Due to the hills and ridgeline to the north and I-580 to the south, Cottonwood Creek, and the location of existing parcel lines, the roadway alignment selected for the Project best meets the Project objectives and best aligns with Dublin's planning efforts for eastern Dublin. Project alternatives considered but rejected are summarized in **Table 6-2** and detailed further below.

Table 6-2 Project Alternatives Considered but Rejected

Alternative Type	Description	Reason for Elimination
Alignment Alternatives		
Croak Road and Collier Canyon Road	Widen the existing segments of Croak Road and Collier Canyon Road along I-580 and close the gap (connect the roadways) between Livermore and Dublin.	• Incompatible with approved City and County programmatic-level planning documents (general plans and EDSP) • Impacts to planned land use • Conflicts with other planned projects (commuter rail extension from Dublin/Pleasanton BART station) • Traffic operations/connectivity impacts • Impacts to biological resources • Safety/Design impacts – non-standard geometry • Inconsistent with transit and bicycle and pedestrian master plans
Northerly Alignment	Extend a west-east connection straight from Fallon/Dublin Blvd intersection to Doolan Road (T-intersection).	• Incompatible with approved City and County programmatic-level planning documents (general plans and EDSP) • Impacts to current land use • Impacts to scenic hills and ridgeline • Impacts to biological resources • Traffic operations/connectivity impacts • Additional right-of-way required • Inconsistent with transit and bicycle and pedestrian master plans
Southerly Alignment	Provide an east-west s-curve connection from North Canyon Pkwy/Collier Canyon Road to Fallon Road/ Fallon Gateway.	• Incompatible with approved City and County programmatic-level planning documents (general plans and EDSP) • Impacts to planned land use • Requires relocation of businesses and residences • Impacts to biological resources • Traffic operations/connectivity impacts, including freeway ramp operations for I-580/Fallon/El Charro interchange, as well as the Fallon Road/Dublin Blvd intersection. • Additional right-of-way required (Fallon Gateway) • Inconsistent with transit and bicycle and pedestrian master plans
Capacity Alternatives		
6-Lane Alternative	Six lanes of travel – three in each direction – for the full length of the Project alignment	Alameda County and Plan Bay Area travel demand forecasts for cumulative conditions were used to determine 6 lanes are not needed between North Canyons Parkway and Croak Road to meet future travel demand. As such – the 6-Lane Alternative was considered but has been eliminated.

Alternative Type	Description	Reason for Elimination
Modal Alternatives		
Dedicated Transit Lane	Dedicated transit lane in each direction for the full length of the Project alignment	Travel demand forecasts for cumulative conditions found that with the Project as proposed, travel speeds would remain at close to free flow without a dedicated transit lane. The addition of a dedicated transit lane would not notably improve transit travel times or traffic flow. As such, a dedicated transit lane was considered but has been eliminated. However, the Project design does not prohibit or eliminate the future possibility for right turn pockets at major intersections to be converted to shared/dedicated transit lanes (queue jumps). And the provision of Transit Signal Priority.

Source: Circlepoint, 2019; BKF, 2019; City of Dublin, 2019

Impacts to Current and Planned Land Uses

The Northerly Alignment would conflict with existing Dublin land use which protects the hillside and ridgelines and prohibits both development of the hillside or degradation of its aesthetic quality. To construct the Northerly Alignment, major portions of the hills would have to be significantly graded. The Southerly Alignment and Croak Road and Collier Canyon Road connection alternatives would conflict with planned land uses in eastern Dublin by creating irregular parcels (Southerly Alignment) and failing to provide adequate access to developable parcels (Croak Road and Collier Canyon Road connection).

Conflicts with Other Planned Projects

Connecting Croak Road and Collier Canyon Road to provide access from Dublin Boulevard to Livermore would require widening both existing roadways and new right-of-way to connect the roadways. Separate from this Project, relocation of Croak Road and Collier Canyon Road is proposed to accommodate new rail transit along the I-580 corridor between the Dublin/Pleasanton BART station and eastern Alameda County.[1] The addition of a new rail system would require widening of I-580 right-of-way to the north and would require the relocation of these two roadways. If the Croak Road and Collier Canyon Road option was selected, it would directly conflict with planned changes to these roadways, and could later require removal of the Project improvements to accommodate the rail system. Similarly, the Southerly Alignment could conflict with roadway realignments needed to accommodate the rail extension, which creates a risk for the later relocation of the Southerly Alignment.

[1] Although proceeding with the BART to Livermore project has been voted down by the BART Board, Tri Valley San Joaquin Valley Regional Rail Authority (www.acetobart.org) is proceeding with exploring a regional rail solution, called Valley Link, along the I-580 corridor connecting to North Lathrop in the first phase and then to Stockton in the second phase.

Traffic Operations/Connectivity Impacts

Connecting Croak Road and Collier Canyon Road to provide access from Dublin Boulevard to Livermore would require widening the existing roadways from two lanes to four and six lanes. Croak Road would be widened to six lanes and would need a nine lane configuration at the Dublin Boulevard/Fallon Road intersection. This would be geometrically infeasible, as Croak Road runs parallel to Fallon and would need to make a 90-degree turn to meet this intersection. The widening of Croak Road parallel to Fallon Road would also create potential safety issues as a result of additional glare; motorists traveling along Fallon Road would be subject to additional lighting and glare from the conversion of Croak Road into a local arterial roadway. In addition to the Dublin Boulevard/Fallon Road intersection, Croak Road and Collier Canyon Road would have very sharp turns and T-intersections, which present safety and capacity issues.

Similarly, the Southerly Alignment would have issues with roadway geometry and connections to the existing roadway system. Where the Southerly Alignment would connect to Fallon Road, westbound drivers would merge onto Fallon Road within the potential operational area of the I-580 off ramp, and would have to traverse the eight-lane segment of Fallon Road to make a left-hand turn and continue traveling westward on Dublin Boulevard. The Northerly Alignment would include similar operational issues at its terminus in Livermore, where eastbound drivers would have to traverse Doolan Road to continue on North Canyons Parkway. This type of traffic circulation for two major arterials is considered an unsafe option not only for the vehicular movement but also for bicycle and pedestrian circulation. From a traffic operations and safety standpoint, this alignment would be infeasible.

Dedicated Transit Lane

Given that the Project could be utilized to provide new transit route access north of I-580, the potential for including a dedicated transit lane was explored. Travel demand forecasts for cumulative conditions found that travel speeds remain at close to free flow without a dedicated transit lane. Since the corridor would operate at close to free flow conditions in the future, a dedicated transit lane would not provide substantial additional benefit; the transit vehicle would be traveling at approximately the same speed as regular vehicles both with and without a dedicated transit lane.

While transit vehicles will travel at similar speeds with or without the dedicated transit lane, there is some advantage to providing queue jump lanes at the intersections where most of the delay due to congestion usually occurs. To allow for this possibility, the Project design has incorporated longer right turn lanes at the signalized intersections that can function as queue jump lanes in the future. With transit vehicles able to run at free flow speeds in the general purpose lanes between intersections and access to queue jump lanes at the intersections, transit travel times are anticipated to improve as routes shift from I-580 onto the Project. The Project would not prohibit Transit Signal Priority, thus maintaining additional benefits to Transit.

With the above findings, this design feature has been eliminated from consideration at the present time based on the determination that dedicated transit lanes are not needed to provide an adequate LOS for vehicles and transit. However, the Project design allows for the flexibility to add dedicated transit lanes through widening of the roadway at a future time should travel demand change sufficiently to warrant their construction.

Off-Site Alternatives

CEQA Guidelines Section 15126.6(f)(2) states that an EIR must consider off-site alternatives if such alternatives are deemed to be feasible by the Lead Agency. If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. As the basic Project objectives include a local roadway connection between eastern Dublin and Livermore, an off-site alternative would not be feasible. For the reasons presented in **Table 6-2**, the significant effects of the Project would not be avoided or substantially lessened by a more northerly or southerly alignment between eastern Dublin and Livermore.

6.5 IMPACT ASSESSMENT

This section evaluates whether the alternatives would reduce the significant impacts of the Project to less-than-significant levels. This analysis also considers whether the alternatives would generate impacts other than those that would occur as a result of the Project. For each environmental topic, the study area discussed below is the same as the study area established for the topic in **Chapter 5.0, Environmental Impact Analysis**, unless otherwise noted. Mitigation measures developed for the Project are referred to in the analysis below; these mitigation measures are fully described in each resource section within **Chapter 5.0, Environmental Impact Analysis**. A summary comparison of Project impacts and impacts from alternatives is provided in **Table 6-3** at the end of this section.

NO PROJECT ALTERNATIVE 1

Under No Project Alternative 1, the existing conditions at the Project site would remain unchanged.

Aesthetics

As existing conditions in the study area would remain unchanged under No Project Alternative 1, this alternative would not result in construction-period visual impacts, changes to the existing visual character of the study area, or a new source of substantial light or glare. No Project Alternative 1 would have no impact to aesthetics, while the Project would result in less-than-significant impacts with mitigation.

Air Quality

No Project Alternative 1 would not include the construction of a new roadway and would not directly generate pollutant emissions above baseline conditions. Therefore, No Project Alternative 1 would not exceed the Bay Area Air Quality Management District (BAAQMD)'s significance thresholds for construction criteria pollutants. Existing traffic patterns would remain unchanged under No Project Alternative 1 when compared to existing conditions. Therefore, operational emissions from No Project Alternative 1 would not exceed BAAQMD thresholds for operational air quality. Based on traffic data used to calculate operational air quality impacts (see **Appendix D** of this Draft EIR), in the cumulative (2040) scenario No Project Alternative 1 would result in emissions lower than those of the Project. This alternative would not include new land uses known to generate objectionable odors.

However, No Project Alternative 1 would interfere with implementation of BAAQMD's 2017 Clean Air Plan (Clean Air Plan). The purpose of the Clean Air Plan is to provide a regional strategy to protect public health through attainment of all state and federal air quality standards and protect the climate through greenhouse gas emission reduction. The Clean Air Plan calls for increased multimodal transportation options and relies in part on regional planning efforts such as Plan Bay Area, which includes the Project. This alternative would not conform to the region's air quality planning efforts; the planned roadway extension and multimodal improvements included in the Transportation Improvement Program (TIP), Plan Bay Area, and local planning documents would not be implemented. This represents a conflict with the Clean Air Plan that would contribute to the continuation of air pollutant and greenhouse gas emissions from automobile travel. This is conservatively identified as a significant impact, and no feasible mitigation has been identified to avoid this impact. Therefore, No Project Alternative 1 would have a significant impact related to Clean Air Plan consistency. With mitigation for construction-period impacts, the Project would result in less-than-significant impacts related to air quality.

Biological Resources

No Project Alternative 1 would maintain existing conditions on the Project site, and therefore would not result in temporary or permanent impacts to habitat areas, impacts to wildlife species, or impacts to plant species. This alternative would not include any grading, paving, pile driving, other construction work, or tree removal. The existing habitat areas in the study area would remain in its current state. Therefore, No Project Alternative 1 would have no impact to biological resources, while the Project would result in less-than-significant impacts with mitigation.

Cultural and Tribal Cultural Resources

No Project Alternative 1 would maintain existing conditions on the Project site, and no ground-disturbing activities would occur. Therefore, No Project Alternative 1 would not have the potential to disturb tribal cultural resources or cultural resources, including historic, archeological, or paleontological resources, or human remains. No Project Alternative 1 would have no impact to cultural and tribal cultural resources, while the Project would result in less-than-significant impacts with mitigation.

Geology and Soils

No construction work such as grading would occur under No Project Alternative 1, and the installation and operation of permanent roadway facilities would not occur. A new bridge would not be installed over Cottonwood Creek. The Project site would remain generally inaccessible to the public, with the exception of private land owners who can access their property under existing conditions. Therefore, No Project Alternative 1 would not expose people or structures to any risks related to geology or soils, and this alternative would not exacerbate or accelerate geologic processes such as landslides or substantial erosion. No Project Alternative 1 would have no impact on geology and soils, while the Project would result in less-than-significant impacts with mitigation.

Greenhouse Gas Emissions

No Project Alternative 1 would maintain existing conditions at the Project site, and therefore would not result in any direct change to greenhouse gas (GHG) emissions. This alternative would not result in any changes to the roadway network, and therefore would not alter existing traffic patterns or associated tailpipe emissions. Based on vehicle miles traveled (VMT) data produced by Kittelson & Associates in 2018, operational GHG emissions under No Project Alternative 1 would be slightly higher than those of the Project in the opening year (2025) and then slightly lower than the Project in the cumulative (2040) scenario. The difference between the two scenarios is less than 0.1 percent. These minor differences in GHG emissions are negligible; please see **Section 5.6, Greenhouse Gas Emissions**, and **Chapter 7.0, Other CEQA Considerations**, for a detailed discussion.

However, this alternative would conflict with applicable plans and policies designed to reduce GHG emissions in the region. On a regional level the Project is included in the MTC's RTP, Plan Bay Area, and the TIP. At the local level, the Project is consistent with the Climate Action Plans of Dublin, the County, and Livermore. The Project is included as part of the adopted roadway networks in Dublin, the County, and Livermore's General Plans. No Project Alternative 1 would conflict with each of these documents, as it would not include the planned extension of transit, bicycle, and pedestrian facilities between Dublin and Livermore, and to eastern Dublin. This represents a conflict with GHG reduction plans and policies, and would indirectly contribute to the continuation of GHG emissions from automobile travel. This is conservatively considered to represent a significant impact and no feasible mitigation has been identified to avoid this impact. Therefore, No Project Alternative 1 would result in a significant impact related to GHG emissions, while the Project would have a less-than-significant impact.

Hazards and Hazardous Materials

No construction work such as grading would occur under No Project Alternative 1, and the installation and operation of permanent roadway facilities would not occur. As there would be no change to the Project site, no hazards to the public would be created, and no hazardous materials would be emitted. There would be no potential for construction workers to be exposed to contaminated soils, as no construction would occur. No Project Alternative 1 would not impair or

interfere with an emergency response plan, and would not result in any safety hazard related to airports or private air strips. Therefore, No Project Alternative 1 would have no impact on hazards and hazardous materials, while the Project would result in less-than-significant impacts with mitigation.

Hydrology and Water Quality

No Project Alternative 1 would not result in any new sources of polluted runoff, and would not result in any changes that could impact water quality. A new bridge would not be installed over Cottonwood Creek. No other changes would be made to Cottonwood Creek or elsewhere on the Project site, and therefore this alternative would not affect any watercourse or result in changes to hydrology. This alternative would not require any increased use of water resources, and therefore would not affect groundwater. Therefore, No Project Alternative 1 would have no impact on hydrology and water quality, while the Project would have a less-than-significant impact.

Land Use and Planning

Existing conditions in the study area would remain unchanged under No Project Alternative 1. As no changes would occur under this alternative, No Project Alternative 1 would not have the potential to physically divide and established community. Existing land uses in Dublin are permitted non-conforming uses. Existing land uses in the County are consistent with the County's East County Area Plan. No Project Alternative 1 would conflict with Dublin's General Plan, the EDSP, Livermore's General Plan, the County's General Plan (East County Area Plan), and Plan Bay Area. All of these planning documents call for the extension of Dublin Boulevard eastward to connect with North Canyons Parkway. Further, No Project Alternative 1 would not support the larger goals of Dublin's General Plan and the EDSP to facilitate the development of eastern Dublin. No Project Alternative 1 would conflict with applicable land use plans. This would result in indirect impacts to the environment which these planning documents seek to avoid, such as reductions in GHG emissions and unplanned growth. Therefore, No Project Alternative 1 would result in a significant and unavoidable impact related to land use, while the Project would result in a less-than-significant impact.

Noise and Vibration

No Project Alternative 1 would retain existing conditions at the Project site and no construction would occur. A new roadway would not be implemented, and therefore no associated traffic noise would occur. Therefore, this alternative would not change existing noise levels or expose people to a new source of noise or vibration. No Project Alternative 1 would have no impact related to noise and vibration, while the Project would result in less-than-significant impacts with mitigation.

Population and Housing

No Project Alternative 1 would not result in any direct changes to population and housing. Similar to the Project, No Project Alternative 1 would not include any new residential or employment uses and would not result in the displacement of any existing residences. However, No Project

Alternative 1 would not support the planned population and housing growth established in Dublin's General Plan and the EDSP for areas within Dublin, and would not support regional plans for growth established in Plan Bay Area and Livermore's General Plan. The indirect impact on population and housing resulting from No Project Alternative 1 would be greater than the impact that would occur with implementation of the Project. This impact would be less-than-significant. Both the No Project Alternative 1 and the Project would result in less-than-significant impacts related to population and housing.

Public Services

Implementation of No Project Alternative 1 would not interfere with or increase demand for any public services, including police, fire, schools, parks, or other facilities. Under No Project Alternative 1, existing conditions on the Project site would remain. Therefore, the existing level of demand for public services would not change and there would be no need for new or expanded facilities such as police or fire stations. There would be no change to the physical environment, and therefore no potential for physical interference with emergency services. Therefore, No Project Alternative 1 would have no impact related to public services, while the Project would result in less-than-significant impacts with mitigation.

Recreation

Under No Project Alternative 1, no new recreational facilities, residences, or employment uses would be introduced in the study area. As there would be no change in population or use of the Project site, No Project Alternative 1 would not directly or indirectly impact the use of existing recreational facilities or increase demand for recreational facilities elsewhere. No Project Alternative 1 would have no impact related to recreation, while the Project would have a less-than-significant impact.

Transportation and Traffic

No Project Alternative 1 would not have the potential to alter traffic or transportation conditions in comparison to existing conditions. Under existing conditions, all study area intersections operate at an acceptable LOS. There are no existing pedestrian or bicycle facilities at the Project site, and none would be constructed under this alternative.

In the cumulative scenario (2040), No Project Alternative 1 would result in unacceptable LOS at one intersection (Airway Boulevard/North Canyons Parkway in Livermore). Mitigation has been identified which would reduce this impact to a less-than-significant level. However, because this intersection is outside of Dublin's jurisdiction as the Lead Agency, the timing and implementation of this mitigation measure cannot be guaranteed, and therefore the impact remains significant and unavoidable.

In the cumulative scenario, No Project Alternative 1 would result in vehicle queuing impacts at the intersection of Airway Boulevard/North Canyons Parkway in Livermore. Mitigation has been identified that would reduce this impact to a less-than-significant level. However, for intersections

in Livermore outside of Dublin's jurisdiction as the Lead Agency, the timing and implementation of this mitigation measure cannot be guaranteed, and therefore the impact remains significant and unavoidable.

No Project Alternative 1 would impede the implementation of planned transit services in eastern Dublin, and planned transit service connections between Dublin and Livermore. Similarly, No Project Alternative 1 would prevent the implementation of planned improvements to pedestrian and bicycle connectivity in eastern Dublin and between Dublin and Livermore. Interference with implementation of multimodal and transit access and/or infrastructure results in indirect impacts to the environment through the continued prioritization of vehicle travel. As required by Senate Bill 743, evaluation of transportation impacts under CEQA should consider that in order to meet statewide GHG reduction goals, transportation must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1). Under No Project Alternative 1, the impact related to interference with planned transit service and bicycle and pedestrian facilities would indirectly promote continued vehicle travel. It is conservatively assumed this impact would be significant and unavoidable.

Based on the above and the *Transportation Impact Analysis* completed for the Project, No Project Alternative 1 would result in significant and unavoidable impacts related to LOS, vehicle queuing, transit, pedestrian, and bicycle access. Detailed intersection level of service and queuing information can be found in **Section 5.14, Transportation and Traffic**, and **Appendix D** of this Draft EIR. In comparison, the Project would result in significant and unavoidable impacts related to traffic congestion due to the inability of Dublin to implement identified mitigations outside its jurisdiction, and would have a less-than-significant impact on transit, pedestrian, and bicycle access.

Utilities

No Project Alternative 1 would not require or result in new water, wastewater, or storm drainage facilities being needed at the Project site or elsewhere. As this alternative would retain existing conditions at the Project site, there would be no potential to exceed wastewater treatment requirements or place addition demands on water supply. No Project Alternative 1 would not generate solid waste, and therefore would not require solid waste disposal. Therefore, No Project Alternative 1 would have no impact on utilities, while the Project would have a less-than-significant impact.

Energy Conservation

No construction or operation would occur under No Project Alternative 1; therefore, no consumption of energy would be required in comparison to existing conditions. No Project Alternative 1 would have no impact related to energy conservation, while the Project would have a less-than-significant impact.

Effects Found not to be Significant

No agricultural or mineral resources would be affected under No Project Alternative 1. As existing conditions would remain and there are no agricultural or mineral resources at or near the Project site, there is no potential for this alternative to eliminate, consume, or interfere with access to these resources. Both the Project and No Project Alternative 1 would have no impact on agricultural and mineral resources.

AERIAL STRUCTURE - ALTERNATIVE 2

Alternative 2 would include an elevated roadway extension generally following the same alignment of the Project. Alternative 2 would use an aerial structure and piers similar to overpasses and roadway bridges to traverse the area between Fallon Road and Doolan Road. The roadway extension would include pedestrian and bicycle facilities similar to those described for the Project. Proposed utility extensions and hydromodification controls would need to be contained within the aerial structure. Alternative 2 would not include a new intersection with Croak Road or otherwise connect to Croak Road, to avoid environmental impacts associated with converting Croak Road into a larger, ramp structure.

Aesthetics

Alternative 2 would include new streetlights along an alignment similar to that of the Project, connecting Dublin Boulevard to the Doolan Road/North Canyons Parkway intersection. This would result in similar lighting impacts as described for the Project. Implementation of an aerial structure would reduce the need for surface grading along the Project alignment and in particular would minimize grading work in the scenic hills to the north. This would avoid or reduce direct impacts to the scenic hills. However, an aerial alignment would obscure scenic views of the hills to a greater extent than the Project, as the alignment would be approximately 20 feet high in some areas. Mitigation such as surface aesthetic treatments along the aerial structure could be employed to minimize visual impacts, and a detailed design for Alternative 2 would need to be developed to fully evaluate the effect of an aerial structure on views of the scenic hills. Further, an elevated roadway with streetlights would have greater potential for light pollution. This would generally be avoided through the same light-shielding measures required for the Project based on each jurisdiction's exterior lighting requirements. Therefore, for the purposes of this analysis, it is assumed this impact would be reduced to a less-than-significant level with mitigation for Alternative 2, and would require development of a new mitigation measure addressing surface aesthetic treatments or other aesthetic design elements to minimize the visual change. Both the Project and Alternative 2 would result in impacts to aesthetics that would be reduced to a less-than-significant level with mitigation, with Alternative 2 requiring additional mitigation to reduce visual impacts.

Air Quality

Construction of Alternative 2 would require a different mix of construction activities when compared to the Project. Major construction activities for the Project would include areas of grading and new pavement. Project construction would require mitigation to avoid impacts from

fugitive dust. For Alternative 2, major construction work would include pile driving, drilling, and/or other construction methods to install footings and piers for the aerial structure. Alternative 2 would also require more extensive concrete, rebar, and formwork. It is unknown whether this alternative would ultimately require a larger construction area or longer duration when compared to the Project.

Based on the above, it is conservatively assumed that implementation of Alternative 2 would result in construction air quality impacts requiring mitigation for fugitive dust. Alternative 2 may also require construction-period mitigation measures to reduce pollutant emissions from construction equipment, based on the type of construction work required. Both the Project and Alternative 2 would result in temporary construction-period impacts to air quality, which would be less-than-significant with mitigation.

Operation of Alternative 2 can reasonably be assumed to be similar to the Project, as this alternative would include a new local roadway connection between eastern Dublin and Livermore. As described above, this alternative would present future access issues for planned development along the roadway in Dublin, which may reduce the number of vehicles that access the roadway. Therefore, operational emissions for Alternative 2 are anticipated to be similar to or less than the Project, which would be less than significant. This alternative would not include new land uses; therefore it would not have the potential to include land uses known to generate objectionable odors.

Alternative 2 would not interfere with implementation of the Clean Air Plan. The Clean Air Plan calls for increased multimodal transportation options and relies in part on regional planning efforts such as Plan Bay Area, which include the Project. Alternative 2 would conform to the region's air quality planning efforts as it would include implementation of the planned roadway extension included in the TIP, Plan Bay Area, and local planning documents, and would include multimodal improvements. Both the Project and Alternative 2 would result in less-than-significant impacts related to consistency with the Clean Air Plan.

Biological Resources

Alternative 2 would include an elevated roadway along the same or similar alignment as the Project. An aerial structure would allow existing wildlife species to continue moving north-to-south across the study area, from breeding habitat to the north to foraging and dispersal habitat in the south. This would greatly reduce indirect impacts to protected species. The placement of an aerial structure over existing habitat areas would result in shading, and for the purposes of this analysis it's assumed the shaded areas would no longer be considered as habitat. Therefore, Alternative 2 would result in permanent impacts to existing habitat to a similar extent as the Project.

Construction of Alternative 2 would likely require less grading than the Project, but would require more drilling and potential pile driving. Less grading work would minimize some temporary direct impacts, however, intensive work such as drilling and pile driving would result in increased noise

and vibration levels. Construction-period mitigation measures identified for the Project would be applicable to Alternative 2 and would reasonably be anticipated to reduce construction impacts to a less-than-significant level.

A detailed design for Alternative 2 has not been completed. In lieu of a detailed design, for the purposes of this analysis it is assumed that the majority of indirect impacts identified in **Section 5.3, Biological Resources** would be avoided under Alternative 2, and the permanent direct impacts to habitat from conversion to roadway facilities would be similar to the Project. These are conservative estimates only; with a detailed design, permanent direct impacts could likely be reduced further. Under Alternative 2, remaining permanent direct impacts and permanent indirect impacts would be reduced to less-than-significant through the same mitigation measures as those required for the Project. In comparison to the Project, less compensatory mitigation would be required under this alternative as impact areas would be reduced.

An aerial structure would need to span Cottonwood Creek, similar to the Project. However, an aerial structure may provide more flexibility to place piers further away from the edges of the Creek. As a detailed design for Alternative 2 has not been developed, it is conservatively assumed that the design of this alternative would have similar pier structures at Cottonwood Creek. A more detailed design would likely show that piers could be placed entirely outside of Cottonwood Creek including bank areas. This impact would be less than significant, and impacts to Cottonwood Creek under the Project would be less than significant with mitigation.

Cultural and Tribal Cultural Resources

Alternative 2 would include an elevated roadway along the same or similar alignment as the Project. An elevated structure would greatly reduce the amount of ground disturbance required in comparison to the Project. It is anticipated that an aerial structure would reduce the amount of grading needed both along the roadway alignment and to the north along the foot of the hills. As the Project site is known to have sensitivity for buried paleontological resources, and could have buried archeological and/or historic-period archeological resources, limiting the area of ground-disturbing work would reduce the potential for the discovery of unidentified buried cultural resources. However, the potential to encounter buried resources would still exist under Alternative 2. Implementation of Alternative 2 would require the same mitigation measures as those identified for the Project in **Section 5.4, Cultural and Tribal Cultural Resources**, and these measures would reduce potential impacts to a less-than-significant level.

There is one known historic-period archeological site that overlaps the Project site. Based on the location of this resource, it would also overlap the footprint required for Alternative 2. Therefore, Alternative 2 would not avoid impacts to this resource. Mitigation identified for the Project to reduce impacts to this resource would equally apply to Alternative 2. With mitigation, this impact would be less than significant. Neither the Project nor Alternative 2 would result in indirect effects to historic resources, as potential historic structures within the area of potential effects are not eligible based on their existing setting. Based on Native American coordination completed to-date, no tribal cultural resources are present at the Project site or in the surrounding area. In the event

that unrecorded tribal cultural resources are encountered during construction, mitigation identified in **Section 5.4, Cultural and Tribal Cultural Resources** would be implemented and would reduce this impact to a less-than-significant level for both the Project and Alternative 2.

Geology and Soils

Construction of Alternative 2 would require ground-disturbing work similar to the Project, and would additionally require more pile driving or other foundation work to construct piers. Alternative 2 would potentially require less grading work in comparison to the Project, as the Project requires extensive grading to provide a reasonably flat and safe at-grade road bed. The final layout and design of the roadway under Alternative 2 is reasonably anticipated to encounter similar types of geology and soils as the Project, as the alternative would be constructed along the same or similar alignment.

Therefore, similar to the Project, potential risks associated with geology and soils would be reduced to a less-than-significant level through mitigation, including preparation of a design-level geotechnical and geologic report that would include subsurface field work and laboratory testing. Recommendations from the design-level report would be incorporated into the design for Alternative 2. Based on the above, both the Project and Alternative 2 would have similar impacts related to geology and soils, which would be reduced to a less-than-significant level with mitigation.

Greenhouse Gas Emissions

Under Alternative 2, the primary source of GHG emissions would be operational emissions from VMT. Alternative 2 would connect the intersection of Dublin Boulevard/Fallon Road to Doolan Road/North Canyons Parkway in Livermore. This alternative would not connect to Croak Road, or provide convenient access to developable areas of eastern Dublin. In comparison, the Project would connect intersection of Dublin Boulevard/Fallon Road to Doolan Road/North Canyons Parkway in Livermore, would create a new intersection with Croak Road, and would provide access to developable areas of eastern Dublin. Therefore, Alternative 2 would be less interconnected to the existing roadway network and areas of future development. This would reasonably result in fewer vehicles using the aerial structure when compared with the Project.

Based on this assumption, Alternative 2 would result in extremely limited changes to regional VMT. As discussed in **Section 5.6, Greenhouse Gas Emissions**, the Project would not result in a notable change to GHG emissions from changes in regional VMT. By comparison, Alternative 2 would be reasonably anticipated to have an even lower effect on regional VMT.

As this alternative would connect to Livermore, it would have the potential to reduce localized VMT in the same way as the Project. As described above, the Project would provide local travelers with a more direct route between Dublin and Livermore, thereby reducing localized VMT and associated GHG emissions. Based on the above, both the Project and Alternative 2 are anticipated to have less-than-significant impacts related to GHG emissions from VMT.

Alternative 2 would be somewhat consistent with applicable plans and policies designed to reduce GHG emissions in the region. On a regional scale, the Project is included in the MTC's RTP, Plan Bay Area, and the TIP. At the local level, the Project is consistent with Dublin, County, and Livermore's Climate Action Plans. The Project is included as part of the adopted roadway networks in Dublin, the County, and Livermore's General Plans. Alternative 2 would be generally consistent with each of these documents, as it would include implementation of the planned roadway extension between Dublin and Livermore, including multimodal infrastructure for transit, bicycles, and pedestrians between these two jurisdictions. However, Alternative 2 would indirectly limit accessibility to developable land uses in eastern Dublin, including bicycle, transit, and pedestrian access to this area. Both Alternative 2 and the Project would have a similar, less-than-significant impact related to plan consistency for GHG reduction.

Hazards and Hazardous Materials

Based on the Phase I Environmental Site Assessment completed for the Project, contaminated soils may be encountered during construction (see **Section 5.7, Hazards and Hazardous Materials**). Construction of Alternative 2 would encounter the same or similar risks associated with potentially contaminated soils at or near the Project site. Transportation of potentially hazardous soils within 0.25 mile of a school would pose the same risk as under the Project. Similarly, during construction a traffic management plan would be required to ensure emergency access would be maintained. These impacts can be reduced to less than significant with implementation of construction-period mitigation measures identified in **Section 5.7, Hazards and Hazardous Materials**.

Operation of this alternative would be similar to the Project in that it would include vehicles traveling on a roadway network. New roadways under this alternative would be subject to the same standard engineering requirements for roadway slope, curvature, speeds, storm water treatment, lane orientation, and other standard roadway design criteria as the Project. Compliance with these standards would minimize the potential for hazardous material or waste release under accident conditions. Based on the above, both the Project and Alternative 2 would have similar impacts related to hazards and hazardous materials, which would be reduced to a less-than-significant level with mitigation.

Hydrology and Water Quality

Implementation of Alternative 2 would be subject to permitting requirements to protect water quality and hydrology during both construction and operation. This alternative would introduce new impervious surfaces to the Project site, which would in turn require stormwater retention and treatment controls to avoid increased stormwater runoff and to maintain water quality. These would be required as a part of the roadway design based on permitting requirements. In comparison to the Project, Alternative 2 would introduce a similar amount of new impervious surface area. Similar to the Project, operation of this alternative would not increase water demand that would contribute to lowering of the groundwater table, as operation would not require the regular use of water. Based on the above, both the Project and Alternative 2 would have a similar, less-than-significant impact related to hydrology and water quality.

Land Use and Planning

Alternative 2 would not have the potential to physically divide an established community. Rather, this alternative would provide new roadway access between Dublin and Livermore. This alternative would be somewhat consistent with the roadway alignment adopted in Dublin's General Plan, the EDSP, the County's General Plan, Livermore's General Plan, and Plan Bay Area. These documents identify an at-grade alignment to allow access to developable land uses in Dublin, which Alternative 2 would not provide. However, this alternative would connect the two jurisdictions. Any potential conflicts with local General Plans could reasonably be resolved through amendments to these documents if necessary. An amendment to the TIP would also be required. Therefore, this impact would be less than significant. Based on the above, both the Project and Alternative 2 would have less-than-significant impacts related to land use, with Alternative 2 presenting greater inconsistency with adopted plans.

Noise and Vibration

Construction of Alternative 2 would result in temporary noise increases that could exceed local standards. Construction of Alternative 2 would require a different mix of construction activities when compared to the Project. Major construction activities for the Project would include large areas of grading and new paving. The Project may require pile driving to construct the bridge over Cottonwood Creek, but would not require pile driving in any other locations. For Alternative 2, major construction work would include pile driving, drilling, and/or other construction methods to install footings and piers for the aerial structure as well as concrete, rebar, and formwork. Pile driving is one of the loudest construction activities (see **Section 5.10, Noise and Vibration**). Therefore, construction of this alternative would result in more instances of maximum construction noise levels in comparison to the Project. As the Project would also include drilling and pile driving, mitigation measures were developed to reduce temporary noise impacts to a less-than-significant level. Construction-period impacts under Alternative 2 would reasonably be anticipated to be reduced to a less-than-significant level through the same construction noise control measures as those identified for the Project.

Pile driving results in the highest amount of temporary vibration in comparison to other construction activities. Under the Project, construction vibration levels were estimated and found to be less than significant. However, given the amount of pile driving that could be needed to implement Alternative 2, it is conservatively anticipated that new mitigation would need to be developed to avoid construction vibration impacts. This mitigation measure could include construction protocols to monitor vibration levels during pile driving and temporarily stop work if vibration levels exceed acceptable levels. With mitigation, this impact would be reduced to a less-than-significant level for Alternative 2. Overall, construction of this alternative would generate slightly greater temporary noise and vibration levels in comparison to the Project.

The amount of construction vehicles needed at any one time to implement this alternative is anticipated to be similar to the Project, as both options include construction of a linear roadway project along the same or similar alignment. Alternative 2 is anticipated to require less grading

work than the Project, and as a result would have fewer soil hauling trips leaving the site. Conversely, Alternative 2 may require more trips to deliver construction materials such as concrete, rebar and formwork. As discussed in **Section 5.10, Noise and Vibration**, local traffic levels would need to double during construction in order to result in a perceptible noise increase. Based on the above, Alternative 2 is anticipated to generate construction trips similar in magnitude to the Project. Under the Project, construction trips would not have the potential to result in a temporary noise impact. Therefore, construction traffic noise is anticipated to be less than significant for Alternative 2, similar to the Project.

Operation of Alternative 2 would result in noise from vehicle circulation. Under the Project, noise from vehicle circulation was determined to be less than significant, as the vehicle volumes were not great enough to cause a noticeable increase in ambient noise levels. As this alternative would provide a connection between Dublin and Livermore but would not provide convenient access to developable areas of eastern Dublin or a connection to Croak Road, traffic volumes are anticipated to be the same as or less than those of the Project. While the aerial structure would place vehicles higher above the existing grade and therefore may increase the potential for noise propagation, the vehicle volumes are reasonably not anticipated to be great enough to result in a noticeable change in ambient noise levels. Therefore, this alternative would generate operational noise levels equivalent to or slightly less than those of the Project. This impact would be less than significant.

Alternative 2 would occupy generally the same area as the Project. The Project site and surrounding area is located within the 55 CNEL noise contour for the Livermore Municipal Airport. As this alternative does not propose noise sensitive land uses, it would not contribute to the exposure of persons to excessive noise levels. This impact would be less than significant under the Project and Alternative 2.

Population and Housing

Alternative 2 would not displace existing housing or people, as the Project site and surrounding areas of eastern Dublin (east of Fallon Road, south of the rolling hills) and the County are not developed with residential uses. This alternative does not include new residential or employment uses, and therefore would not directly increase population. Implementation of this alternative could result in a temporary increase in construction-related job opportunities in the local area. Since the opportunities provided by construction would be temporary, this is not reasonably anticipated to result in the relocation of construction workers to the region. Operation of this alternative would not generate jobs.

This alternative would support implementation of the County's General Plan (East County Area Plan) or Livermore's General Plan, both of which include the extension of Dublin Boulevard through the County to Livermore. However, Alternative 2 would not adequately support planned development in eastern Dublin. An elevated roadway structure would present design challenges and limitations for future development projects which would need to connect to the roadway. However, this would not represent a significant impact related to population and housing. Based on the above, similar to the Project, Alternative 2 would have a less-than-significant impact related to population and housing.

Public Services

Alternative 2 would not include the provision of new or physically altered government facilities. There are no government facilities within the Project site or surrounding areas. Therefore, this alternative would not result in direct physical impacts related to the construction or expansion of government facilities.

As discussed in **Chapter 3.0, Project Description** and **Chapter 7.0, Other CEQA Considerations**, of this Draft EIR, reasonably foreseeable indirect growth resulting from roadway access to eastern Dublin is already planned for and forecasted in land use regulating documents (Dublin's General Plan and the EDSP). Because this alternative would not encourage growth beyond what is already planned for and forecasted, the propose improvements would not result in an indirect increased demand for public services. This alternative would provide a planned roadway connection between Dublin and Livermore, indirectly supporting planned growth in PDAs in Dublin and Livermore, and indirectly supporting implementation of Livermore's General Plan.

Similar to the Project, construction of this alternative could temporarily result in interference with emergency services access. This could result from temporary roadway or intersection closures. This impact would be reduced to a less-than-significant level through the same mitigation measure identified for the Project, which requires the creation and implementation of a traffic management plan (see **Section 5.14, Transportation and Traffic**). Based on the above, both the Project and Alternative 2 would have a less-than-significant impact related to public services with implementation of mitigation.

Recreation

Alternative 2 would not include the construction or expansion of any recreational facilities, nor does it include any housing or major employment uses, and therefore would not generate new users or demand for local parks or other recreational facilities. This alternative would provide roadway access connecting eastern Dublin to Livermore. Dublin has taken the implementation of this roadway extension into account in its General Plan, the EDSP, and Fallon Village SEIR. Similarly, the County and Livermore have accounted for the extension of Dublin Boulevard to North Canyons Parkway in their respective General Plan documents. This alternative would not result in unplanned demand for local and regional parks or recreational facilities, or an incremental increase in demand that would reasonably be expected to necessitate new or expanded recreational facilities. Similar to the Project, this impact would be less than significant.

Transportation and Traffic

Under Alternative 2, a new roadway connection between eastern Dublin and Livermore would be implemented using an aerial structure. This Alternative would not create a new connection to Croak Road or provide convenient access to developable areas of eastern Dublin, and therefore would be less integrated into the existing roadway network when compared with the Project. This is reasonably anticipated to result in fewer vehicles using the roadway under Alternative 2. Detailed LOS and vehicle queuing analyses have not been completed for Alternative 2.

As detailed analysis is not available, for the purposes of this analysis it is conservatively assumed that Alternative 2 would have similar impacts to local intersections as the Project. The Project would result in significant and unavoidable impacts related to intersection LOS and vehicle queuing in Livermore. Alternative 2 is conservatively assumed to result in similar impacts. A detailed analysis would likely show that Alternative 2 would result in fewer LOS and queuing impacts, as fewer drivers would use the roadway.

Alternative 2 would include new roadway access between Dublin and Livermore, and would include pedestrian and bicycle facilities similar to the Project but would not support convenient bike and pedestrian access to developable areas of eastern Dublin. This impact would be less than significant. This alternative would allow for future implementation of planned transit service between Dublin and Livermore, but would interfere with transit access to developable areas of eastern Dublin. Therefore, this alternative would impede the implementation of planned transit services. Interference with implementation of multimodal and transit access and/or infrastructure results in indirect impacts to the environment through the continued prioritization of vehicle travel. As required by Senate Bill 743, evaluation of transportation impacts under CEQA should consider that in order to meet statewide GHG reduction goals, transportation must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1). Under Alternative 2, the impact related to interference with planned transit service in eastern Dublin would indirectly promote continued vehicle travel. It is conservatively assumed this impact would be significant, but could be mitigated through the development of new mitigation measures. This might include a fair share contribution to the cost of future connections between the aerial structure and developable areas of eastern Dublin, to support transit access to these areas. By comparison, the Project would result in a less-than-significant impact related to transit service.

Utilities

Alternative 2 would include the extension of water, recycled water, electrical, and communication utilities into eastern Dublin and the extension of an existing water line to Livermore. Proposed utility extensions would need to be enclosed within the aerial structure, as Dublin requires undergrounding of new or relocated utility lines. As the roadway would be on an aerial structure, containing utility lines within the structure would achieve a similar effect (avoiding the use of telephone poles and similar catenary structures). Utilities would be extended to support future development in eastern Dublin; however, the design of Alternative 2 would present technical obstacles for future connections between utilities within the aerial structure and ground-level development.

Similar to the Project, operation of this alternative would not include the regular use of water or recycled water services. Water may be used intermittently for maintenance purposes such as street sweeping and landscape irrigation. This would not require water or water services to the extent that new or expanded treatment facilities would be required. Similarly, operation of this alternative would not generate wastewater, as no habitable structures or other facilities such as restrooms are proposed. Operation of this alternative would not require use of domestic water, recycled water, or the expansion of water, recycled water, or wastewater treatment facilities. As a result of the project

type, construction and operation of Alternative 2 would not significantly alter water and recycled water use or wastewater generation compared to existing conditions. Therefore, similar to the Project, impacts related to utilities would be less than significant under Alternative 2.

Energy Conservation

Construction of Alternative 2 would require electricity usage, diesel fuel consumption from on-road hauling trips and off-road construction diesel equipment, and gasoline consumption from on-road work commute and vendor trips. The precise amount of construction equipment and associated energy consumption needed for this alternative has not been determined as it would require a more detailed design. However, as demonstrated in **Section 5.16, Energy Conservation**, energy consumption for roadway construction is generally not held to be wasteful or inefficient when the construction would be typical compared to other similar projects. As this alternative would be constructed on and/or adjacent to the Project site, and would include the construction of new roadway access, it is reasonably assumed that construction of this alternative would not have unique characteristics which would result in the wasteful or inefficient use of energy. As described above, this alternative is anticipated to require less grading work than the Project, but more concrete, rebar, and formwork.

Direct consumption of energy during operation of this alternative would be limited to electricity needed to power street lights and traffic signals. This alternative would include high-efficiency streetlights, as required by Dublin. Indirect energy consumption as a result of Alternative 2 would result from any increases in VMT. As described under Greenhouse Gas Emissions above, this alternative is not anticipated to notably change VMT in the region and would slightly reduce VMT locally. Therefore, this alternative is not anticipated to increase indirect energy consumption when compared to existing conditions, but rather may result in a slight decrease in indirect energy consumption. Based on the above, similar to the Project, Alternative 2 would have a less-than-significant impact related to energy conservation.

Effects Found not to be Significant

No agricultural or mineral resources would be affected under Alternative 2. As existing conditions would remain and there are no existing agricultural or mineral resources at or near the Project site, there is no potential for this alternative to eliminate, consume, or interfere with access to these resources. Both the Project and Alternative 2 would have no impact on agricultural and mineral resources.

6.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Section 21002 of the CEQA Guidelines requires lead agencies to adopt feasible mitigation measures or feasible environmentally superior alternatives in order to substantially lessen or avoid otherwise significant adverse environmental effects, unless specific social or other conditions make

such mitigation measures or alternatives infeasible. CEQA also requires that an environmentally superior alternative be identified among the alternatives analyzed. In general, the environmentally superior alternative is the project that avoids or substantially lessens some or all of the significant and unavoidable impacts of the proposed project (CEQA Guidelines Section 15126.6). If one of the No Project Alternatives is the environmentally superior alternative, the EIR must also specify which of the other build alternatives (including the project) would be environmentally superior.

Each of the evaluated alternatives would result in lesser environmental impacts to some environmental resources and greater impacts to others when compared to the Project. None of the alternatives presented would only reduce impacts associated with the Project. When considering objectives, the Project would best meet the stated objectives. In contrast, Alternative 1 would not provide interconnectivity between PDAs in Dublin and Livermore, new transportation facilities or other public infrastructure to support planned development in Dublin, or multimodal access between Dublin and Livermore. Alternative 2 would indirectly place limitations on how and to what extent future land uses could be accessed in eastern Dublin, as designing and constructing access points from the aerial structure would require a larger footprint for future projects than connecting to an at-grade roadway. In this way, Alternative 2 would not meet the objective of establishing transportation facilities and other public infrastructure to serve planned development in eastern Dublin. Furthermore, an aerial structure unconnected to Croak Road would not support local bicycle, pedestrian, and automobile connectivity along Croak Road.

On the basis of comparing the extent to which the alternatives would reduce or avoid the significant impacts of the Project, No Project Alternative 1 would be the environmentally superior alternative. However, No Project Alternative 1 would not attain the primary objectives of the Project. As required by State CEQA Guidelines (California Code of Regulations Section 15126.6 [e][2]), because the environmentally superior alternative was identified as the No Project Alternative, another environmentally superior alternative must be identified among the other alternatives considered.

Alternative 2 would result in a smaller permanent footprint compared to the Project, which would lower direct and indirect impacts to biological resources and somewhat reduce the likelihood of encountering buried cultural resources. While the permanent footprint area would be smaller, construction-period noise and vibration levels would be greater than those under the Project. Alternative 2 would be less consistent with local and regional land use policies and objectives, particularly related to the development of eastern Dublin. Alternative 2 would also interfere with planned transit service, and would not support local bicycle and pedestrian infrastructure in eastern Dublin. Alternative 2 would be more visually prominent and would obscure the scenic hills to the north to a greater extent than the Project. All other environmental impacts under Alternative 2 would be generally similar to those of the Project.

On balance, the environmentally superior alternative would be either the Project or Alternative 2, depending on Dublin's decisions weighing types of environmental benefits and adverse effects. The Project would result in greater temporary and permanent indirect impacts to biological resources,

and Alternative 2 would result in greater construction noise and aesthetic impacts. Additionally, Alternative 2 would be less consistent with local and regional planning documents created to reduce or avoid environmental impacts from GHG emissions. In weighing the consideration of the environmentally superior alternative, decision-makers must weigh the relative importance of greater biological resource impacts associated with the Project, compared to the greater construction-period noise impacts and multimodal transportation associated with Alternative 2. Both Alternative 2 and the Project would result in long-term, significant and unavoidable impacts related to intersection level of service and vehicle queuing. Therefore, the environmental impact differences between these two alternatives are not substantial enough that one is clearly superior over the other.

Table 6-3 Comparison of Impacts between Project Alternatives

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
Aesthetics					
Cause a substantial adverse effect on a scenic vista	LTS/M	NI	↓	LTS/M	=
Substantially degrade the existing visual character or quality of the site and its surroundings	LTS/M	NI	↓	LTS/M	=
Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings with a State scenic highway	LTS/M	NI	↓	LTS/M	=
Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area	LTS/M	NI	↓	LTS/M	↑
Cumulative	None	None	=	None	=
Air Quality					
Conflicts with or obstructs implementation of the BAAQMD 2017 Clean Air Plan	LTS	SU	↑	LTS	=
Violates any air quality standard or contributes substantially to an existing or projected air quality violation	LTS/M	NI	↓	LTS/M	=
Exposes sensitive receptors to substantial pollutant concentrations, including those that increase health risks such as cancer	LTS	NI	↓	LTS	=
Creates objectionable odors affecting a substantial number of people	LTS	NI	↓	LTS	=

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
Cumulative impact of any criteria pollutant	LTS	NI	↓	LTS	=
Cumulative Impacts	None	None	=	None	=
Biological Resources					
Have an adverse effect, either directly or through habitat modifications, on any species listed as endangered, threatened, or proposed or critical habitat for these species	LTS/ M	NI	↓	LTS/M	↓
Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS	LTS/ M	NI	↓	LTS/M	↓
Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS	LTS/ M	NI	↓	LTS/M	↓
Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marshes, vernal pools, etc.) through direct removal, filling, hydrological interruption, or other means	LTS/ M	NI	↓	LTS/M	↓
Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	LTS/ M	NI	↓	LTS/M	↓

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances	LTS	NI	↓	LTS	=
Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP	LTS/ M	NI	↓	LTS/M	=
Cumulative Impacts	None	None	=	None	=
Cultural and Tribal Cultural Resources					
Cause a substantial adverse change in the significance of a historic resource (CEQA Guidelines Section 15064.5)	LTS/ M	NI	↓	LTS/M	=
Cause a substantial adverse change in the significance of an archaeological resource (CEQA Guidelines Section 15064.5)	LTS/ M	NI	↓	LTS/M	↓
Directly or indirectly destroy a unique paleontological resource or site or unique geological feature	LTS/ M	NI	↓	LTS/M	↓
Disturb any human remains, including those interred outside of formal cemeteries	LTS	NI	↓	LTS	↓
Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 [see Section 5.4 for full significance criteria description]	LTS/ M	NI	↓	LTS/M	↓
Cumulative Impacts	None	None	=	None	=

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
Geology and Soils					
Result in soils that are unable to support an on-site wastewater disposal system (septic)	NI	NI	↓	NI	=
Expose people or structures to potential risk of loss or injury where there is high potential for seismically induced ground shaking, landslides, liquefaction, settlement, lateral spreading, and/or surface cracking	LTS/ M	NI	↓	LTS/M	=
Expose people or structures to potential risk of loss or injury where there is high potential for earthquake-related ground rupture near major fault crossings	LTS	NI	↓	LTS	=
Result in triggering or acceleration of geologic processes, such as landslides, substantial soil erosion, or loss of topsoil during construction	LTS/ M	NI	↓	LTS/M	=
Expose people or structures to potential risk of loss or injury where corrosive, expansive or other unsuitable soils are present	LTS/ M	NI	↓	LTS/M	=
Cumulative	None	None	=	None	=
Greenhouse Gas Emissions					
Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	LTS	LTS	=	LTS	=
Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases	LTS	SU	↑	LTS	=
Cumulative	None	None	=	None	=

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
Hazards and Hazardous Materials					
Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment	NI	NI	↓	NI	=
Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	LTS	NI	↓	LTS	=
Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	LTS/ M	NI	↓	LTS/M	=
Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	LTS/ M	NI	↓	LTS/M	=
For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area	LTS	NI	↓	LTS	=
For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area	LTS	NI	↓	LTS	=
Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	LTS/ M	NI	↓	LTS/M	=

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands	LTS	NI	↓	LTS	=
Cumulative Impacts	None	None	=	None	=
Hydrology and Water Quality					
Result in or be subject to damage from inundation by mudflow	NI	NI	↓	NI	=
Violate any water quality standards or waste discharge requirements, create any substantial new sources of polluted runoff, or otherwise degrade surface water or groundwater quality	LTS	NI	↓	LTS	=
Place within a watercourse or flood hazard area structures which would impede or redirect flood flows, or otherwise substantially alter the existing drainage pattern of an area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation, or flood-related damage on- or offsite	LTS	NI	↓	LTS	=
Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite	LTS	NI	↓	LTS	=
Substantially deplete groundwater supplies or interfere with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)	LTS	NI	↓	LTS	=
Cumulative Impacts	None	None	=	None	=

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
Land Use and Planning					
Physically divide an established community	LTS	LTS	=	LTS	=
Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect	LTS	SU	↑	LTS	↑
Cumulative Impacts	None	None	=	None	=
Noise and Vibration					
Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	LTS/ M	NI	↓	LTS/M	=
A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project	LTS	NI	↓	LTS	=
A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	LTS/ M	NI	↓	LTS/M	=
Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels	LTS	NI	↓	LTS/M	↑
For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels	LTS	NI	↓	LTS	=

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels	LTS	NI	↓	LTS	=
Cumulative Impacts	None	None	=	None	=
Population and Housing					
Displace substantial numbers of people and existing housing, necessitating the construction of replacement housing elsewhere	NI	NI	=	NI	=
Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)	LTS	LTS	=	LTS	=
Cumulative Impacts	None	None	=	None	=
Public Services					
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, other public facilities	LTS/ M	NI	↓	LTS/M	=
Cumulative Impacts	None	None	=	None	=
Recreation					
Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial	LTS	NI	↓	LTS	=

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
physical deterioration of the facility would occur or be accelerated					
Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment	LTS	NI	↓	LTS	=
Cumulative	None	None	=	None	=
Transportation and Traffic					
Result in unacceptable LOS conditions at signalized or unsignalized intersections	SU	SU	=	SU	=
Result in an impact to vehicle queuing	SU	SU	=	SU	=
Impede existing or planned transit services	LTS	SU	↑	LTS	↑
Impede pedestrian circulation, access, or safety	LTS	SU	↑	LTS	↑
Impede the circulation, access, or safety of bicyclists or bicycle facilities	LTS	SU	↑	LTS	↑
Cumulative	SU	SU	=	SU	=
Utilities					
Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	LTS	NI	↓	LTS	=
Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	LTS	NI	↓	LTS	=
Require or result in the construction of a new storm drainage facilities or expansion of existing facilities, the construction of which could cause significant effects	LTS	NI	↓	LTS	=

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed	LTS	NI	↓	LTS	=
Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	LTS	NI	↓	LTS	=
Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs	LTS	NI	↓	LTS	=
Comply with federal, state, and local statutes and regulations related to solid waste	LTS	NI	↓	LTS	=
Cumulative	None	None	=	None	=
Energy					
Result in the inefficient, wasteful or unnecessary consumption of energy during project construction or operation	LTS	NI	↓	LTS	=
Cumulative Impacts	None	None	=	None	=
Other Resource Topics					
Agriculture and Forestry					
Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use	NI	NI	=	NI	=

Environmental Topic	Project	No Project Alternative 1		Aerial Structure Alternative 2	
		Significance	Comparison	Significance	Comparison
Key: NI = No Impact LTS = Less than Significant SU = Significant Unavoidable LTS/M = Less than Significant with Mitigation = Equal to ↓ Lesser Impact than Project ↑ Greater Impact than Project					
Conflict with existing zoning for agricultural use or a Williamson Act contract	NI	NI	=	NI	=
Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))	NI	NI	=	NI	=
Result in the loss of forest land or conversion of forest land to non-forest use	NI	NI	=	NI	=
Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use	NI	NI	=	NI	=
Cumulative Impacts	NI	NI	=	NI	=
Mineral Resources					
Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state	NI	NI	=	NI	=
Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan	NI	NI	=	NI	=

Source: Circlepoint, 2019

7 OTHER CEQA CONSIDERATIONS

As required by the California Environmental Quality Act (CEQA) and discussed in Section 15126 of the CEQA Guidelines, this chapter discusses growth-inducing impacts of the Project, significant irreversible environmental changes, and significant unavoidable impacts. Additionally, this section provides a discussion of vehicle miles traveled (VMT), Senate Bill (SB) 743, and how the Project would change VMT in the immediate Project vicinity and regional roadway network.

7.1 GROWTH INDUCEMENT

CEQA requires a discussion of the ways in which a project could induce growth. CEQA Guidelines Section 15126.2(d) identifies a project as growth inducing if it would "foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Furthermore, the CEQA Guidelines require that an environmental impact report (EIR) address the ways a project could be growth inducing by discussing how the project may "encourage and facilitate other activities that could significantly affect the environment." However, the CEQA Guidelines do not require a prediction or speculation of where, when, and in what form such growth would occur.

According to the CEQA Guidelines, a project would have potential to induce growth if it would:

A. Remove obstacles to population growth (e.g., through the expansion of public services into an area that does not currently receive these services), or through the provision of new access to an area, or a change in a restrictive zoning or General Plan land use designation.

B. Result in economic expansion and population growth through employment opportunities and/or construction of new housing.

CEQA does not require separate mitigation for growth inducement as it is assumed that these impacts are already captured in the analysis of environmental impacts.

A. <u>Remove obstacles to population growth (e.g., through the expansion of public services into an area that does not currently receive these services), or through the provision of new access to an area, or a change in a restrictive zoning or General Plan land use designation.</u>

Growth in an area may indirectly result from the removal of physical impediments or restrictions to growth, as well as the removal of planning impediments resulting from land use plans and policies. In this context, physical growth impediments may include non-existent or inadequate access to an area, or the lack of essential public services (e.g., water, wastewater, etc.).

The Project would not include or result in a change in any zoning or land use designation. The Project would include extension of the transportation network into developable areas of eastern Dublin, and would include the extension of utilities within the roadway to provide future service to

developable areas in Dublin. The Project would connect eastern Dublin to Livermore through an undeveloped area of unincorporated Alameda County (County). Within the County, land use development other than minor agricultural-related uses is prohibited. Within Livermore, the area adjacent to the Project is currently developed with business and commercial uses.

The Project would not reasonably be expected to induce unplanned growth in Dublin. The Project would not directly affect the rate, type, or amount of planned growth in eastern Dublin, as the Project includes a roadway extension only. The Project would indirectly support the rate, type, and amount of growth planned in eastern Dublin.

CITY OF DUBLIN

The Project is included in the Land Use and Circulation elements of Dublin's General Plan and the Eastern Dublin Specific Plan (EDSP). The Project is allowed in the Open Space Initiative Protection Area in Dublin. In addition to the Project itself, future land uses surrounding the Project site in Dublin are planned for in these documents. As discussed in the *Community Impact Assessment* (CIA)[1] prepared for the Project, planned growth in the region has been included and fully evaluated through Plan Bay Area and in the applicable CEQA documents for each jurisdiction's adopted General Plan, as well as the EDSP.

The Project would include installation of new water and wastewater lines within the Project site to support planned development in Dublin. Installation of utilities as a part of the Project would avoid or minimize additional, future utility trenching at the Project site. Wastewater lines would be extended from the Dublin Boulevard/Fallon Road intersection to the eastern edge of Dublin in order to support planned growth in eastern Dublin. Water lines would be extended from the Dublin Boulevard/Fallon Road intersection to the Doolan Road/North Canyons Parkway intersection. Water lines would be extended to intertie with the existing water system in Livermore to provide additional water service capacity to both jurisdictions in the event of an emergency (also known as an emergency intertie). These utility lines would support future land use development in Dublin as described in Dublin's General Plan and the EDSP. For a detailed discussion of utilities, refer to **Section 5.15, Utilities**.

ALAMEDA COUNTY

The Project would not reasonably be expected to indirectly induce growth in the County, as it would include a roadway only which would traverse County land designated for agricultural and resource conservation uses. The Project would not include alterations to the County's urban growth limit, which prohibits urban development in unincorporated areas designated for agricultural and resource management uses. Further, the Project would not connect to any existing roadways within unincorporated County land, and therefore would not provide expanded access to unincorporated areas of the County, but would rather provide a roadway connection through the County.

[1] The CIA is available on file with the City of Dublin at 100 Civic Plaza, Dublin, California.

CITY OF LIVERMORE

The Project would not reasonably be expected to induce unplanned growth in Livermore. The Project would provide new local access between Dublin and Livermore, which would indirectly make Priority Development Areas (PDAs) in Livermore more accessible. The Project and growth within PDAs is planned for in Livermore's General Plan and regional planning documents.

CONCURRENCE FROM RESPONSIBLE AGENCIES

In the CIA, a screening analysis was used to evaluate potential growth-related impacts. It was determined that indirect, Project-related growth in Dublin is reasonably foreseeable but would not impact resources of concern. This analysis was vetted with each jurisdiction (Dublin, the County, and Livermore) in September 2018, and received concurrence on the determination that the Project would indirectly support planned growth in eastern Dublin. As discussed in **Section 5.12, Public Services**, and **Section 5.15, Utilities** of this Draft EIR, implementation of the Project would not result in significant impacts related to the provision of public services or utilities. This includes growth-related impacts and cumulative impacts.

B. Result in economic expansion and population growth through employment opportunities and/or construction of new housing.

Typically, the growth-inducing potential of a project is considered significant if it fosters growth in a secondary location, or exceeds assumptions established by pertinent land use plans or regional projections. **Section 5.11, Population and Housing**, addresses indirect population growth as a result of the Project. The Project would not include new employment opportunities beyond those temporary opportunities created during the construction period. Employment opportunities provided by construction of the Project would not reasonably result in the relocation of construction workers to the region. Therefore, the employment opportunities provided by construction are not anticipated to induce indirect growth in the region. The Project would not include any new housing. The Project would indirectly support development of planned uses and associated planned growth in eastern Dublin, County, and Livermore consistent with local and regional planning documents as described above. Therefore, the Project is not anticipated to result in indirect impacts related to growth.

7.2 VEHICLE MILES TRAVELED

BACKGROUND

On September 27, 2013, Governor Brown signed Senate Bill 743 (SB 743). Among other things, SB 743 creates a process to change analysis of transportation impacts under CEQA. Historically, environmental review of transportation impacts has focused on the delay that vehicles experience at intersections and on roadway segments. That delay is measured using a metric known as "level of service," or LOS. Mitigation for increased delay often involves increasing capacity (i.e., the width of a roadway or size of an intersection), which may increase auto use and emissions and discourage

alternative forms of transportation. Under SB 743, the focus of transportation analysis shifts from driver delay to reduction in vehicle miles traveled, creation of multimodal networks, and promotion of a mix of land uses which will result in a reduction of greenhouse gas emissions.

In January 2018, the Office of Planning and Research (OPR) transmitted its proposed changes to the CEQA Guidelines implementing Senate Bill 743 to the California Natural Resources Agency. In December 2018, new CEQA Guidelines were adopted and are now in effect. Lead Agencies have until April 2019 to begin using the new CEQA Guidelines. In addition to the April 2019 timeline, Lead Agencies have until July 1, 2020 to apply updates to the Guidelines related to VMT analysis. As such, analysis of VMT is not required under CEQA at this time, and VMT analysis is not required for this Project specifically because the Notice of Preparation was issued before any final guidelines had been adopted. Moreover, given the evolving nature of VMT analysis under CEQA, the analysis in this Draft EIR is not being formally adopted as a CEQA policy or significance criteria by Dublin as the Lead Agency at this time. The analysis and significance criteria used in this Draft EIR are not binding on Dublin in future EIRs. Accordingly, this Draft EIR provides an assessment of the VMT that would be generated by the Project for informational purposes only.

CHANGES TO THE CEQA GUIDELINES

The revised text of the CEQA Guidelines includes the following:

> (b) Criteria for Analyzing Transportation Impacts.
>
> > (2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.
> >
> > (4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

SIGNIFICANCE CRITERIA

In addition to changes to the CEQA Guidelines, OPR published a Technical Advisory on Evaluating Transportation Impacts in CEQA in December 2018. The Technical Advisory contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. It also includes guidance on consideration of the effects of transportation projects on vehicle travel, and provides the following as one option for evaluation of VMT impacts: "A lead agency that uses the VMT metric to assess the transportation impacts of a transportation project may simply report that change in VMT as the impact". Therefore, for the purposes of this EIR, the significance threshold for evaluating the potential VMT impact of the Project is as follows:

An impact may occur if the project results in a significant increase in VMT compared with the no project condition.

METHODOLOGY

To estimate changes in VMT as a result of the Project, two analyses were completed by Kittelson & Associates in 2018. The first examined how the Project may influence VMT regionally, and the second examined VMT changes in the immediate Project area. The Alameda County Transportation Commission (ACTC) Countywide model was used to calculate regional and local VMT changes with implementation of the Project in the years 2025 and 2040. The resulting metric is the total VMT and a summary of the average VMT per household and service population (residents and workers) for "No Project" and "Plus Project" conditions. This allows for a calculation of the net change in VMT with the Project.

The regional evaluation of VMT with implementation of the Project shows a negligible decrease in VMT attributable to the Project under the 2025 Plus Project scenario, and a similarly negligible increase in VMT attributable to the Project in the 2040 Plus Project scenario. A comparison of "No Project" and "Plus Project" VMT for the region is shown in **Table 7-1** below and the regional study area is shown in **Figure 7-1**.

Table 7-1 Regional VMT Comparison

VMT	2025				2040			
	2025 No Project	2025 Plus Project	Change over 2025 No Project	Percent Change	2040 No Project	2040 Plus Project	Change over 2040 No Project	Percent Change
Daily VMT	5,168,804	5,168,581	-223	**0.0%**	5,858,023	5,859,720	1,697	**0.0%**
Annual VMT	1,349,057,818	1,348,999,732	-58,086	**0.0%**	1,528,944,016	1,529,387,024	443,008	**0.0%**

VMT	2025				2040			
	2025 No Project	2025 Plus Project	Change over 2025 No Project	Percent Change	2040 No Project	2040 Plus Project	Change over 2040 No Project	Percent Change
AM Peak 1 Hour VMT	500,044	500,316	272	**0.1%**	561,362	562,026	664	**0.1%**
PM Peak 1 Hour VMT	533,716	533,400	-317	**-0.1%**	610,243	609,918	-325	**-0.1%**

Source: Kittelson & Associates, 2018

As shown above, the Project would result in minimal change to VMT at a regional level. Given the relatively small size of the Project (1.5 miles) within the overall network and the type of project (a local roadway) it is understandable that the Project would not result in notable changes to regional VMT. Taking into consideration the expected margin of error from the Countywide model and expert professional judgement, it is determined that the VMT reductions and increases of 0.0-0.1 percent are negligible and would not represent a significant increase in VMT as a result of the Project.

To further support the VMT analysis for the Project, a "select link" analysis was prepared using the same Countywide model as the regional analysis. This allows for a clearer, more accurate understanding of how the Project would affect VMT. Specifically, the select link analysis evaluated how local drivers would use the Project, and if – and to what extent – drivers would use the Project as an alternative to completing local trips using Interstate 580 (I-580). Local trips were defined as trips with localized origins and destinations occurring north of I-580. For example, under current conditions eastbound drivers travel locally by leaving Dublin Boulevard, entering I-580, and then exiting in Livermore. This requires a longer trip (.52 miles) than would be required with Project implementation. With implementation of the Project, drivers would have the option to complete a shorter local trip using the Dublin Boulevard extension.

The select link analysis determined there are typically 63 vehicles per hour during the AM peak and approximately the same number eastbound during the PM peak that would continue to divert onto I-580 without the Project. The net VMT reduction associated with these trips with implementation of the Project would be 33 VMT during the AM peak hour and 33 VMT during the PM peak hour. This equates to a reduction of about 328 VMT daily. This is generally consistent with the results of the year 2040 regional analysis above, and demonstrates that VMT changes as a result of the Project would be localized.

CONCLUSION

Results of the VMT analysis indicate that the Project would contribute to a localized reduction in VMT as the Project adds a local alternative to diverting onto I-580. Regionally, the Project would have a negligible effect on VMT. Because the Project is expected to contribute to decreased VMT, the VMT impact of the Project would be less than significant based on the proposed significance criteria.

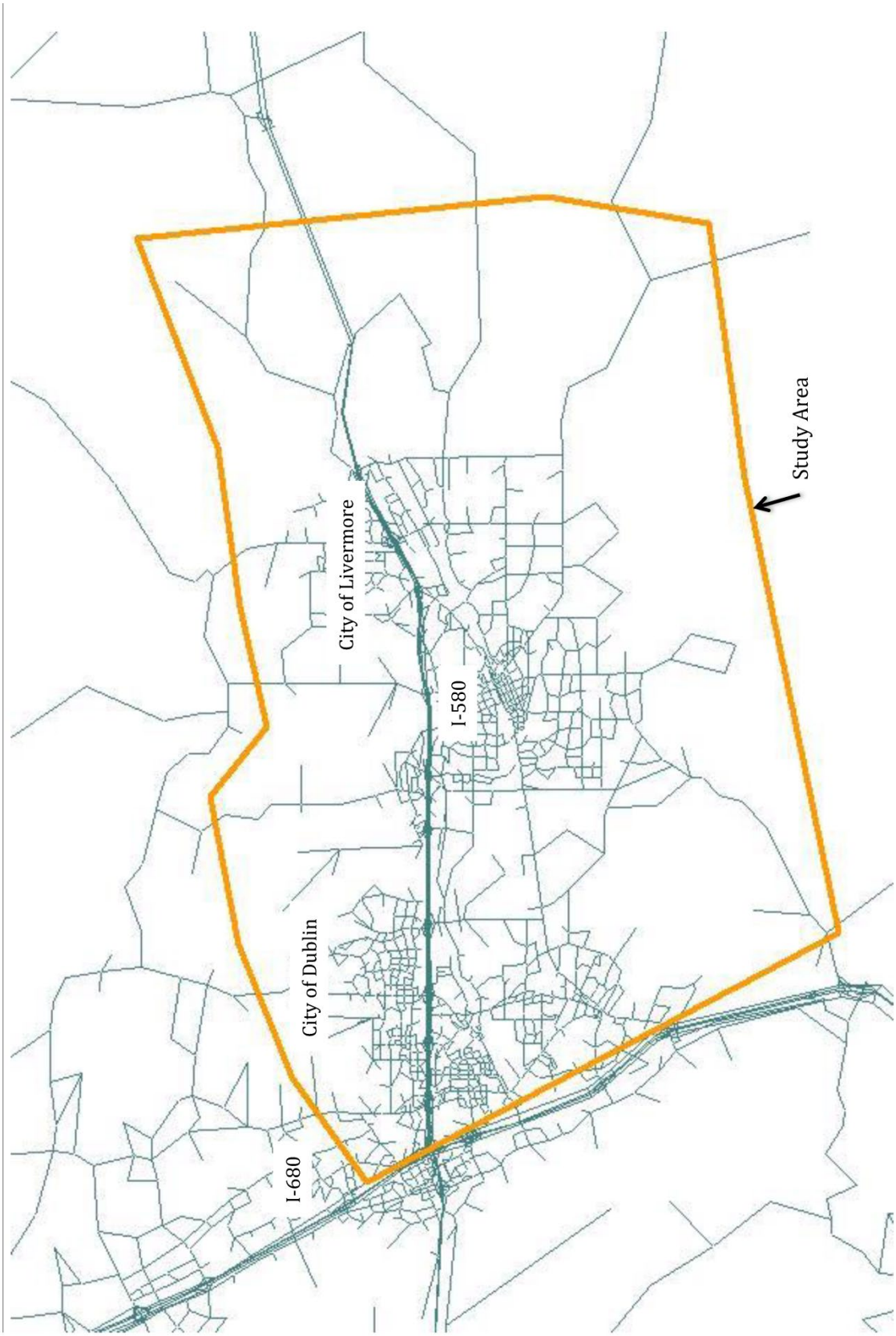


Figure 7-1

Regional VMT Study Area

Source: Kittelson & Associates, 2018

7.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

According to Section 15126.2(c) of the CEQA Guidelines, an EIR must identify, evaluate, and justify significant irreversible changes that may result from full implementation of a project. There are three categories of irreversible changes identified in the CEQA Guidelines:

- Consumption of nonrenewable resources
- Primary and secondary impacts that commit future generations to similar uses
- Irreversible damage caused by environmental accidents associated with the project

CONSUMPTION OF NONRENEWABLE RESOURCES

Construction of the Project would require the consumption of nonrenewable resources, including electricity, natural gas, asphalt, steel, and other construction materials that are considered to be available in finite supply. Operation of the Project would not directly require commitment of notable nonrenewable resources; however, roadway maintenance over the operational life of the

Project would require some additional commitment of nonrenewable resources. Neither construction nor operation would consume nonrenewable resources in amounts substantially different from or greater than typical transportation projects in the region. The Project would not affect agricultural resources, mineral resources, or access to such resources. Therefore, the Project would not involve a large commitment of nonrenewable resources.

LAND USE WHICH WOULD COMMIT FUTURE GENERATIONS

The Project would not include changes to land use. The Project would provide access to developable areas of eastern Dublin, and would indirectly contribute to development of planned land uses outlined in Dublin's General Plan and the EDSP. Planned land uses in eastern Dublin include office, commercial, open space, residential, and light industrial. Planned land uses in Livermore, within PDAs, vary and generally consist of a mix of residential, commercial, and retail uses. However, development of those land uses would continue to be dependent on a variety of market factors, and specific development is not reasonably foreseeable as a result of the Project. The Project would not prevent Dublin, the County, or Livermore from changing land use designations in the future. The Project would provide access through the County to Livermore, and would indirectly support the continuation of existing land uses in Livermore. As discussed in **Section 5.9, Land Use**, the indirect effects of the Project are consistent with local long-range planning documents. Therefore, the Project would not reasonably commit future generations to particular land uses.

IRREVERSIBLE DAMAGE

As discussed in **Section 5.7, Hazards and Hazardous Materials**, construction of the Project would require the temporary presence of small amounts of hazardous materials on the Project site, such as diesel fuel. All hazardous materials would be subject to existing storage, handling, and disposal

regulations that limit the potential for exposure to workers and the public. During operation, no storage or use of hazardous materials would be required. Vehicles traveling along the roadway would not represent a hazard in relation to irreversible environmental damage. As discussed in **Section 5.5, Geology and Soils**, the Project is not reasonably anticipated to contribute to hazards such as landslides or other exacerbation of existing geologic conditions. Therefore, the Project would not reasonably result in irreversible damage to the environment.

7.4 SIGNIFICANT UNAVOIDABLE IMPACTS

The Project would result in the following significant unavoidable impacts related to traffic:

- **Existing (2017) Plus Project Traffic Conditions**: The change in travel patterns resulting from the Project would result in unacceptable traffic operations at the intersection of Airway Boulevard and North Canyons Parkway in Livermore (labeled intersection #8 in the traffic analysis) during the AM peak hour when compared to existing conditions. With implementation of the Project, this intersection would experience significant growth to the northbound left turn with the demand exceeding 800 vehicles per hour during the AM peak hour. The existing lane configuration of a single shared left and through lane for the northbound approach is insufficient to handle this demand. The Project would cause the level of service (LOS) at this intersection to degrade from LOS D to LOS F in the AM peak hour. An intersection operation of LOS F would be below the LOS E standard for this intersection. This would be a significant impact. Implementation of **Mitigation Measure TRAF-3** would improve the operation of this intersection to LOS D during the AM peak hour. However, because the intersection is in Livermore, outside of Dublin's jurisdiction, Dublin as the Lead Agency cannot guarantee the implementation and timing of the mitigation measure. Therefore, this impact would be significant and unavoidable.

- **2025 Plus Project Traffic Conditions:** The Project would result in unacceptable operations at the intersection of Airway Boulevard and North Canyons Parkway (#8) in Livermore during the AM peak hour under 2025 Plus Project conditions. As one of the primary access points for the Project, this intersection would experience significant increased demand in the northbound left turn, with the demand exceeding 800 vehicles per hour during the AM peak hour. The existing lane configuration is insufficient to handle this demand. This would be a significant impact. Implementation of **Mitigation Measure TRAF-3** would improve the operation of this intersection to LOS D during the AM peak hour. However, because the intersection is in Livermore, outside of Dublin's jurisdiction, Dublin as the Lead Agency cannot guarantee the implementation and timing of the mitigation measure. Therefore, this impact would be significant and unavoidable.

- **Cumulative (2040 Plus Project) Traffic Conditions:** The Project would result in unacceptable operations at the intersection of Airway Boulevard and North Canyons Parkway in Livermore (#8) during the AM and PM peak hours under the cumulative (2040 Plus Project) condition. Implementation of **Mitigation Measure TRAF-3** would improve the operation of this intersection to LOS C during the AM peak hour and LOS D during the PM peak hour, reducing this impact to less than significant. However, because the intersection

is in Livermore, outside of Dublin's jurisdiction, Dublin as the Lead Agency cannot guarantee the implementation and timing of the mitigation measure. Therefore, this impact would be significant and unavoidable.

- **Cumulative (2040 Plus Project) Queuing Impact:** The Project would cause the westbound queue at Airway Boulevard and North Canyons Parkway (#8) in Livermore to extend beyond the capacity of the turn pocket by 29 feet during the PM peak hour under the cumulative (2040 Plus Project) condition. The queue length modeled at this intersection for 2040 No Project would exceeds the available storage, and implementation of the Project would further extend the queue length. This represents a significant impact. Implementation of **Mitigation Measure TRAF-3** would reduce this impact to a less-than-significant level. However, because the intersection is in Livermore, outside of Dublin's jurisdiction, Dublin as the Lead Agency cannot guarantee the implementation and timing of the mitigation measure. Therefore, this impact would be significant and unavoidable.

- **Cumulative (2040 Plus Project) Queuing Impact:** The Project would cause the westbound right turn queue at the intersection of Isabel Avenue and I-580 Westbound off-ramps (labeled intersection #11 in the traffic analysis) to exceed the available turn pocket storage by 58 feet during the AM peak hour under cumulative conditions. This represents a significant impact. Implementation of **Mitigation Measure TRAF-4** would reduce this impact to a less-than-significant level. However, this intersection is under the jurisdiction of Caltrans and outside of Dublin's jurisdiction. Therefore, Dublin as the Lead Agency cannot guarantee the implementation and timing of the mitigation measure and this impact would be significant and unavoidable.

8 EIR PREPARERS

CITY OF DUBLIN

Obaid Khan, Transportation and Operations Manager

Jeff Baker, Assistant Community Development Director

Timothy Cremin, City Attorney's Office

BKF

Natalina Bernardi, PE, LEED AP, Principal/Vice President, Principal in Charge

Gordon Sweet, PE, Vice President, Project Manager

Blake Silkwood, PE, Engineer III, Roadway Design Engineer

Ramon Alvarez Muro, Engineer III, Water Quality/Hydraulics Engineer

CIRCLEPOINT

Audrey Zagazeta, Project Director

Brianna Bohonok, AICP, Project Manager

Alex Casbara, Deputy Project Manager

Nicole Cuevas Leber, Associate Environmental Planner

Juliet Martin, Assistant Planner

Rebecca Fleischer, Assistant Planner

KITTELSON & ASSOCIATES

Damian Stefanakis, Principal Planner

Aaron Elias, P.E., Senior Engineer

HT HARVEY & ASSOCIATES

Steve Rottenborn, Ph.D., Vice President, Wildlife Ecologist

Kelly Hardwicke, Principal, Plant Ecology

ILLINGWORTH & RODKIN

James Reyff, Principal

Michael Thill, Principal

Dana M. Lodico, PE, INCE Bd. Cert., Senior Consultant

Keith Pommerenck, Senior Consultant

PALEOWEST

Heather Price, PhD, RPA, Principal Archaeologist, Office Principal

Jennifer Wildt, Ph.D., RPA, Senior Archaeologist

Evan Tudor Elliott, MA, RPA, Senior Archaeologist

FIELD OF VISION

Richard Tsai, Principal

GEOGRAFIKA CONSULTING

Megan Gosch, President

GEOCON INC

Luann Beadle, Project Scientist

Shane Rodacker, PE, GE, QSP, Vice President

BIGGS CARDOSA ASSOCIATES, INC

Ines Li, PE, Engineering Manager

Roy Schnabel, PE, Principal